

State of California
AIR RESOURCES BOARD

**Final Statement of Reasons for Rulemaking,
Including Summary of Comments and Agency Responses**

PUBLIC HEARING TO CONSIDER THE AMENDMENTS TO THE CALIFORNIA CAP ON
GREENHOUSE GAS EMISSIONS AND MARKET-BASED COMPLIANCE MECHANISMS

Public Hearing Date: December 13, 2018
Agenda Item No.: 18-10-7

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I. GENERAL

A. Action Taken in This Rulemaking

In this rulemaking, the California Air Resources Board (CARB or the Board) is adopting amendments to the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms (California Cap-and-Trade Regulation or Regulation) to reflect the requirements of Assembly Bill 398 (AB 398, Chapter 135, Statutes of 2017), respond to Board direction, and otherwise clarify and improve the Regulation. Changes include new price containment points and a price ceiling, limits on offset use, new industrial facility leakage assistance factors for 2018 and beyond, clarifications on electric and gas utility use of allowance value, compliance provisions for Energy Imbalance Market (EIM)-related GHG emissions, offset invalidation clarifications, streamlining implementation requirements, and adjustments to linkage reflecting Ontario's actions to revoke its participation in the cap-and-trade market. The amendments are codified at Subchapter 10 Climate Change, Article 5, sections 95802, 95811, 95812, 95813, 95820, 95830, 95831, 95834, 95841, 95841.1, 95851, 95852, 95854, 95856, 95870, 95871, 95890, 95891, 95892, 95893, 95894, 95911, 95912, 95913, 95915, 95920, 95921, 95942, 95943, 95973, 95974, 95976, 95977.1, 95979, 95981, 95981.1, 95982, 95983, 95984, 95985, 95987, 95989, 95990, 96011, 96022, and Appendices B and E, title 17, California Code of Regulations (CCR).

California's suite of climate policies includes the Cap-and-Trade Program (Program) as a key element to ensure the state meets its GHG reduction targets established by AB 32 (Chapter 488, Statutes of 2006) and Senate Bill 32 (SB 32; Chapter 250, Statutes of 2016), and does so in a cost-effective manner. In AB 398, the legislature clarified the role of the Cap-and-Trade Program in achieving the SB 32 target for 2030 and added specific requirements for aspects of the Program. This rulemaking amends the Regulation to reflect AB 398 requirements, and responds to direction provided by the Board in Board Resolution 17-21 (July 27, 2017). It also makes further changes to strengthen and clarify the Regulation, including delinking from Ontario, which revoked its cap-and-trade program.

As adopted, the regulatory amendments would:

- Establish and implement a price ceiling and two price containment points (also called new post-2020 Reserve tiers in this FSOR);¹
- Revise the offsets quantitative usage limits in the post-2020 period;
- Establish criteria such that at least half of the allowable quantitative offset usage limits post-2020 result in direct environmental benefits in the State of California;

¹ Consistent with terminology used in the Staff Report: Initial Statement of Reasons (ISOR), for the purposes of this document, "current Reserve" means the existing allowance price containment reserve with three price tiers, "post-2020 Reserve" means the collapsed single tier reserve as currently included in the Cap-and-Trade Regulation, and "new post-2020 Reserve" means the two tier reserve structure as directed in AB 398.

- Specify leakage assistance factors for allowance allocation post-2020 and in the third compliance period;
- Update allowance allocation methodologies to expand transition assistance and make other changes to ensure equitable and appropriate allocation levels;
- Clarify how allowance value allocated to electricity distribution utilities (EDUs) and natural gas suppliers can best be utilized to encourage emissions reductions and protect ratepayers;
- Streamline offset implementation requirements, including clarifying regulatory compliance and invalidation requirements of the Compliance Offset Program;
- Establish a process to assess a compliance obligation for GHG emissions in the electricity EIM;
- Clarify rules for the use of compliance instruments with respect to other regulatory programs;
- Modify provisions related to linkage with Ontario to delink with Ontario's program in order to reflect the recent action by Ontario to revoke its cap-and-trade regulation;
- Simplify participation in the Program by streamlining registration, auction participation, and other Program processes;
- Modify provisions to improve clarity regarding expired limited exemptions; and
- Make non-substantive changes to improve and clarify the Regulation.

The public process for the proposed amendments began with a kickoff workshop on October 12, 2017, and a total of four publicly noticed workshops were held from October 2017 through June 2018. In addition, CARB staff held numerous informal meetings with stakeholders to discuss specific topics related to the proposed amendments. Over 180 written comments were received in response to these informal workshops. All of the workshop presentations and other materials provided by CARB are included in Appendix G Public Process of the Staff Report discussed below, and both the materials and public comments are posted on the Cap-and-Trade Program's Public Meetings webpage.² In addition, since January 1, 2018, staff participated in three legislative hearings related to the Cap-and-Trade Program and topics addressed in this rulemaking, held by the Joint Legislative Committee on Climate Change and the Senate Environmental Quality Committee.

The proposed amendments were formally noticed in the California Notice Register on September 4, 2018.³ The Staff Report: Initial Statement of Reasons, entitled "Public Hearing to Consider the Proposed Amendments to the California Cap on Greenhouse

² More information, workshop comments, presentations and other materials can be found on the Cap-and-Trade website at <https://www.arb.ca.gov/cc/capandtrade/meetings/meetings.htm>.

³ California Air Resources Board. Notice of Public Hearing to Consider Amendments to the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms. Posted August 2, 2016. Available online at: <https://www.arb.ca.gov/regact/2018/capandtrade18/capandtrade18.htm>

Gas Emissions and Market-Based Compliance Mechanisms Regulation” (Staff Report or ISOR), which is incorporated by reference herein, the full text of the proposed regulatory amendments, all references relied upon and identified in the staff report, and other supporting documentation were made available for public comment starting on September 7, 2018, running for 45 days through to October 22, 2018.⁴ The Board held a public hearing on the proposed amendments on November 15, 2018, where they received written and oral public comments.⁵ Additional proposed amendments and supporting materials were made available for at least 15 days of public review on November 15, 2018 with a deadline to submit comments on November 30, 2018.⁶ Public comments received during these comment periods are posted on the CARB webpage for this rulemaking.⁷

On December 13, 2018, the Board held a second public hearing, where the public submitted additional comments.⁸ At this hearing the Board approved Resolution 18-51, approving the written responses to environmental comments, making required CEQA and other findings, and adopting the final regulatory amendments. The Resolution also directed the Executive Officer to finalize the Final Statement of Reasons (FSOR) for the regulatory amendments and to submit the final rulemaking package to the Office of Administrative Law for review.

This FSOR provides written responses to all public comments received on the proposed amendments during the 45-day and 15-day comment periods and during the first and second Board hearings.

B. Mandates and Fiscal Impacts to Local Governments and School Districts

The Board has determined that this regulatory action will not create costs or savings, as defined in Government Code sections 11346.5(a)(5) and 11346.5(a)(6), to State agencies or in federal funding to the State. The proposed regulatory action will not create costs and will not impose a mandate on State and local agencies, or school districts. Ten California public universities, several municipal utilities, and one county correctional facility are currently subject to the Regulation, and would continue to have a compliance obligation under the amended Regulation. These entities would be required to surrender allowances or offset credits equal to the amount of their GHG emissions during the compliance period as is already required under the current regulation.

Because the regulatory requirements apply equally to all covered entities and unique requirements are not imposed on local agencies, the Board has determined that the

⁴ Available online at: <https://www.arb.ca.gov/regact/2018/capandtrade18/capandtrade18.htm>.

⁵ Written comments submitted at the board hearing are available online at: <https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=ct2018>.

⁶ Ibid.

⁷ Ibid.

⁸ See footnote 3.

proposed regulatory action imposes no costs on local agencies that are required to be reimbursed by the State pursuant to part 7 (commencing with section 17500), division 4, title 2 of the Government Code, and does not impose a mandate on local agencies or school districts that is required to be reimbursed pursuant to section 6 of article XIII B of the California Constitution.

C. Consideration of Alternatives to the Proposed Amendments

Staff is required to consider alternatives to the proposed amendments for the Cap-and-Trade Regulation. As discussed in Chapter IX of the Staff Report, staff analyzed the following alternatives to the proposed amendments to the Cap-and-Trade Regulation:

- Take no action for the complete Regulation (No Project Alternative);
- Set the price ceiling at a higher level;
- Set the price ceiling at a lower level.

For the reasons set forth in the Staff Report, in staff's comments and responses at the Board hearings, and in this FSOR, the Board determined that no alternative considered by the agency would be more effective in carrying out the purpose for which the regulatory action was proposed, including compliance with the authorizing law, or would be as effective and less burdensome to affected private persons, or would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provisions of law than the action taken by the Board. Further, none of the options that would have enabled California to meet the goals of reducing GHG emissions to 1990 levels by 2020 and to continue achieving reductions toward the 2030 target of 40 percent below the 1990 level were as cost effective as the proposed Regulation and substantially address the public problem stated in the notice. Staff provides a discussion of each alternative in Chapter IX of the Staff Report for the proposed amendments.

II. MODIFICATIONS MADE TO THE ORIGINAL PROPOSAL

A. MODIFICATIONS CONSIDERED AT THE BOARD HEARING AND PROVIDED FOR IN THE 15-DAY COMMENT PERIOD

CARB released a Notice of Public Availability of Modified Text and Availability of Additional Documents and Information (15-Day Notice) on November 15, 2018, which placed additional documents into the regulatory record and presented modifications to

the regulatory text reflecting public comments made during the 45-day comment period and November 15, 2018 Board hearing as well as additional staff analysis.⁹

B. NON-SUBSTANTIAL MODIFICATIONS

After the close of the second 15-day comment period, the Executive Officer determined that no additional modifications should be made to the regulations, with the exception of the non-substantive changes listed below.

Section 95802: In the definition of “Lobbying,” the term “elective official” was corrected to “elected official.”

Section 95834: A dash was added between “Your” and “Customer” in the title of the section “Know-Your-Customer Requirements.”

Section 95871(b)(2): An errant period was removed after “95910(c)(2)” in the sentence “All Advance Auction allowances not sold pursuant to section 95913(f)(5) 95910(c)(2) will be auctioned pursuant to section 95910.”

Section 95891(c): A semicolon was added at the end of the phrase defining “ProcessEmissions.”

Section 95911(c)(5) [deleted]: The section number “(5)” was crossed out to correct the changes in the 45-day package in which the section in its entirety was deleted but the “(5)” was mistakenly not crossed out.

Section 95913(f) [deleted]: The deleted title of this section was incorrectly stated in the 45-day package as “~~Sales from Reserve Tiers from 2013-2020~~,” and was corrected to “~~Reserve Tiers from 2013-2020~~.”

Section 95973(b)(1)(E)1.: Underlined the new capital “F” at the beginning of the section, strike out a period that had been replaced with a comma following “...in sections 95973(a)(2)(C)2. or 5.”, and strike out the capital “T” that was replaced with a lowercase “t” in “...Tthe entire calendar day...”

Section 95987(b)(6): Replaced a comma at the end of the section with a period to close the section.

The above described modifications constitute non-substantial changes to the regulatory text because they more accurately reflect the numbering of sections, correct spelling and grammatical errors, and correct citations, but do not materially alter the

⁹ California Air Resources Board. Notice of Public Availability of Modified Text and Availability of Additional Documents and Information. Posted November 15, 2018. Available online at: <https://www.arb.ca.gov/regact/2018/capandtrade18/capandtrade18.htm>.

requirements, rights, responsibilities, conditions, or prescriptions of the proposed rulemaking action.

III. DOCUMENTS INCORPORATED BY REFERENCE

The Cap-and-Trade Regulation incorporates by reference the following documents:

California Air Resources Board (2018). California Climate Investments Quantification Methodology Emission Factor Database Documentation. August 1, 2018:

https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/ccli_emissionfactordatabase_documentation_100918.pdf

California Energy Commission (2017). Renewables Portfolio Standard Eligibility, 9th edition, Commission Guidebook, pp. 85-86. CEC-300-2016-ED9-CMF-REV. Released January, 2017:

http://doCKETpublic.energy.ca.gov/PublicDocuments/16-RPS-01/TN217317_20170427T142045_RPS_Eligibility_Guidebook_Ninth_Edition_Revised.pdf

U.S. Environmental Protection Agency (2010). Mandatory Reporting of Greenhouse Gases; Final Rule. 40 CFR Part 98. December 17, 2010.

<https://www.gpo.gov/fdsys/pkg/CFR-2011-title40-vol21/pdf/CFR-2011-title40-vol21-part98-subpartC.pdf>

These documents were incorporated by reference because it would be cumbersome, unduly expensive, and otherwise impractical to publish them in the California Code of Regulations. The documents are lengthy and highly technical test methods and engineering documents that would add unnecessary additional volume to the regulation. Distribution to all recipients of the California Code of Regulations is not needed because the interested audience for these documents may obtain them directly from the public agencies which authored them. Also, the incorporated documents were made available by CARB upon request during the rulemaking action and will continue to be available in the future. The documents are also available from college and public libraries, or may be requested directly from the publishers.

IV. SUMMARY OF COMMENTS MADE DURING THE 45-DAY COMMENT PERIOD AND NOVEMBER 15, 2018 BOARD HEARING AND AGENCY RESPONSES

Chapter IV of this FSOR contains all comments submitted during the 45-day comment period and the November 15, 2018 Board hearing that were directed at the proposed amendments or to the procedures followed by CARB in proposing the amendments, together with CARB's responses. The 45-day comment period commenced on September 4, 2018, and ended on October 22, 2018, with additional comments submitted at the November 15, 2018 Board hearing on the proposed amendments.

ARB received 75 letters on the proposed amendments (not including duplicates) during the 45-day comment period and one written comment at the Board hearing. In addition, 73 commenters gave oral testimony at the Board hearing. To facilitate use of this document, comments are categorized into sections, and are grouped by response wherever possible.

Table IV-1 below lists the organizations and individuals that submitted oral and written comments on the proposed amendments during the 45-day comment period and at the November 15, 2018 Board hearing, identifies the date and form of their comments, and shows the abbreviation assigned to each. Eight commenters, the Southern California Gas Company, Energy Innovation, Covanta, Indigenous Peoples Reducing Emissions, Gateway Cities Council of Governments, the City of Long Beach, the California Business Roundtable, and the Western States Petroleum Association, submitted late comment letters which are therefore not included in this document. The letter from the Southern California Gas Company is identical to a letter they submitted to the Mandatory Reporting Regulation comment log during the 45-day comment period which is responded to in section M. One commenter, WSPA, submitted the identical comment letter twice.

Note that some comments which follow were scanned or otherwise electronically transferred, so they may include minor typographical errors or formatting that is not consistent with the originally submitted comments. However, all content reflects the submitted comments. All originally submitted written comments are available here: <https://www.arb.ca.gov/regact/2018/capandtrade18/capandtrade18.htm>. A transcript including the verbal testimony presented is available here: <https://www.arb.ca.gov/board/mt/2018/mt111518.pdf>.

A. LIST OF COMMENTERS

Table IV-1

Abbreviation	Commenter
3DEGREES	Nick Facciola, 3Degrees Group Written Testimony: 10/17/18
3DEGREES2	Nick Facciola, 3Degrees Group Written Testimony: 10/17/18
AAFC	Will Scott, African-American Farmers of California Oral Testimony: 11/15/18
ACR	Arjun Patney, American Carbon Registry Written Testimony: 10/22/18
ACR2	Arjun Patney, American Carbon Registry Oral Testimony: 11/15/18
AECA	Maddie Munson, Agricultural Energy Consumers Association Oral Testimony: 11/15/18

Abbreviation	Commenter
APC	Cody Boyles, Agricultural Presidents Council Oral Testimony: 11/15/18
AWEA	Danielle Osborn Mills, American Wind Energy Association California Written Testimony: 10/22/18
BICEP	Kirsten James, Business for Innovative Climate & Energy Policy Written Testimony: 10/22/18
BICEP2	Patty Modellmog, Business for Innovative Climate and Energy Policy, Ceres Oral Testimony: 11/15/18
BIZFEDCV	Melissa Travgh, BizFed Central Valley Oral Testimony: 11/15/18
BLOOM	Sam Schabacker, Bloom Energy Written Testimony: 10/22/18
BLOOM2	Brian Biering, Ellison, Schneider, Harris & Donlan LLP Oral Testimony: 11/15/18
BLUESOURCE	Kevin Townsend, Bluesource Written Testimony: 10/22/18
BLUESOURCE2	Roger Williams, Bluesource Oral Testimony: 11/15/18
BMCLA	Lovester Adams, Baptist Ministers Conference of Los Angeles and Southern California Oral Testimony: 11/15/18
BMCLA2	Jack Wilson, Baptist Ministers Conference of Los Angeles and Southern California Oral Testimony: 11/15/18
BMCLA-NAN-NAACP	Jarron Nichols, Baptist Ministers Convention, National Action Network and Compton NAACP Oral Testimony: 11/15/18
BOSWELL	Dennis Tristao, J.G. Boswell Company Oral Testimony: 11/15/18
CAISO	Andrew Ulmer, California Independent System Operator Written Testimony: 10/22/18
CALCHAMBER	Leah Silverthorn, California Chamber of Commerce Oral Testimony: 11/15/18
CALDEM WOMEN	Carolyn Fowler, California Democratic Party Women's Caucus Oral Testimony: 11/15/18
CAMPBELLSSOUP	Thomas Maulhardt, Campbell Soup Supply Company L.L.C. Oral Testimony: 11/15/18

Abbreviation	Commenter
CCEEB	Mikhael Skvarla, California Council for Environmental and Economic Balance Written Testimony: 10/22/18
CCEEB2	Michael Skvarla, California Council for Environmental and Economic Balance Oral Testimony: 11/15/18
CCPC	Shelly Sullivan, CCPC & Statewide Business Groups Written Testimony: 10/22/18
CCPC2	Shelly Sullivan, Climate Change Policy Coalition Oral Testimony: 11/15/18
CDCCB	Ron Chavez, The Two Hundred and Community Development for California Community Builders Oral Testimony: 11/15/18
CEJA	Stephanie Tsai, California Environmental Justice Alliance Written Testimony: 10/22/18
CENTERBIODIV	Maya Golden-Krasner, Center for Biological Diversity Written Testimony: 10/22/18
CFCC	Tony Brunello, California Strategies, LLC Written Testimony: 10/24/18
CFCC2	Tony Brunello, California Forest Carbon Coalition Oral Testimony: 11/15/18
CHEVRON	Julia Bussey, Chevron Corporation Oral Testimony: 11/15/18
CHOC	Anna Solorio, Community Housing Opportunities Corporation Oral Testimony: 11/15/18
CIPA	Rock Zierman, California Independent Petroleum Association Written Testimony: 10/22/18
CLFP	John Larrea, California League of Food Producers Written Testimony: 10/22/18
CLFP2	John Larrea, California League of Food Producers Oral Testimony: 11/15/18
CLIMACTRESERV	Sarah Wescott, Climate Action Reserve Written Testimony: 10/15/2018
CLIMATEREALITY	Karen Nelson, Climate Reality Project Written Testimony: 10/22/18
CMTA	Michael Shaw, California Manufacturers & Technology Association Written Testimony: 10/22/18

Abbreviation	Commenter
CMTA2	Michael Shaw, California Manufacturers & Technology Association Written Testimony: 10/22/18
CMTA3	Naomi Padron, McHugh, Koepke and Associates Oral Testimony: 11/15/18
CMUA	Tony Braun, California Municipal Utilities Association Oral Testimony: 11/15/18
COACHELLA	Patrick Swarhout, Greater Coachella Valley Chamber of Commerce Oral Testimony: 11/15/18
COVANTA	Michael Van Brunt, Covanta Written Testimony: 10/22/18
COVANTA2	Scott Henderson, Covanta Written Testimony: 10/17/2018
COVANTA3	Scott Henderson, Covanta Oral Testimony: 11/15/18
CROCKETTCOGEN	Peter Weiner, Crockett Cogeneration Written Testimony: 10/17/18
CROCKETTCOGEN2	Peter Weiner, Paul Hastings Oral Testimony: 11/15/18
CSCME	John Bloom, Coalition for Sustainable Cement Manufacturing and Environment Written Testimony: 10/22/18
CSCME2	Bruce Magnani, Coalition for Sustainable Cement Manufacturing and the Environment Oral Testimony: 11/15/18
CUPERTINOSUSTAINCOMM	Gary Latshaw, Cupertino Sustainability Commissioner Written Testimony: 10/21/18
DENTONS	Jeffrey Fort, Dentons US LLP Written Testimony: 10/22/18
DWR	Ram Verma, California Department of Water Resources Written Testimony: 10/22/18
EDF	Katelyn Roedner Sutter, Environmental Defense Fund Written Testimony: 10/22/18
EDF2	Katelyn Roedner Sutter, Environmental Defense Fund Oral Testimony: 11/15/18
EICHLEAY	John Sakamoto, Eichleay, Inc. Written Testimony: 10/16/2016
ENVENTREPRENEURS	Michelle Embury, E2 (Environmental Entrepreneurs) Oral Testimony: 11/15/18
FINITECARBON	Carrie Gombos, Finite Carbon Written Testimony: 10/19/18

Abbreviation	Commenter
FIRSTENVIRO	Jay Wintergreen, First Environment Written Testimony: 10/22/18
FOWLER	Daniel Parra, Fowler City Council and Central Valley Latino Mayors & Elected Officials Coalition Oral Testimony: 11/15/18
FRESNOCHAMBER	Nathan Alonzo, Fresno Chamber of Commerce Oral Testimony: 11/15/18
FRY	Rhoda Fry Written Testimony: 10/22/18
GLBC	James R. Jones, Jr., Greater Liberty Baptist Church and Ministers Alliance Oral Testimony: 11/15/18
GOLDENSTATEPOWER	Susie Berlin, Golden State Power Cooperative Written Testimony: 10/22/18
GSBC	Prentiss Lewis, Greater Starlight Baptist Church Oral Testimony: 11/15/18
GUARDIAN	Kevin Baird, Guardian Industries Kingsburg Operation Written Testimony: 10/22/18
GUARDIAN2	R. Andrew Westgate, Latham & Watkins LLP Written Testimony: 10/22/18
HAYA	Barbara Haya, University of California, Berkeley Written Testimony: 10/22/18
HAYAETAL	Barbara Haya, University of California, Berkeley, et al. Written Testimony: 10/22/18
HELGERSON	Cathy Helgerson Written Testimony: 10/22/18
HERNANDEZ	Rhea Hernandez Written Testimony: 10/22/18
HOLMANUMC	Oliver E. Buie, Holman United Methodist Church Oral Testimony: 11/15/18
IEEP	Luis Portillo, Inland Empire Economic Partnership Oral Testimony: 11/15/18
IEMAC	Ashley Conrad-Saydah, Independent Emissions Market Advisory Committee Written Testimony: 10/22/18
IETA	Katie Sullivan, International Emissions Trading Association Written Testimony: 10/22/18
IPRE	Nico van Aelstyn, Indigenous Peoples Reducing Emissions Written Testimony: 11/15/18
JOINTELECUTILS	Adam Smith, California Joint Utility Group Written Testimony: 10/22/18

Abbreviation	Commenter
JOINTGASUTILS	Fariya Ali, Gas Utility Group Written Testimony: 10/22/18
LADWP	Jodean Giese, Los Angeles Department of Water and Power Written Testimony: 10/16/18
LBA	Andrea Navarrete, for Dr. Ruben Guerra and Latino Business Association Oral Testimony: 11/15/18
LHOIST	Justin Andrews, Lhoist North America Written Testimony: 10/22/18
LONGBEACH	Diana Tang, City of Long Beach Oral Testimony: 11/15/18
LSMA	Maria Guriato, Latino Seaside Merchants Association Oral Testimony: 11/15/18
MARATHON	Brian McDonald, Marathon Petroleum Company Oral Testimony: 11/15/18
MCFB	Christina Beckstead, Madera County Farm Bureau Oral Testimony: 11/15/18
MILKPRODUCERS	Kevin Abernathy, Dairy Cares and Milk Producers Council Oral Testimony: 11/15/18
MOSELY	Jonathan Mosely, National Action Network Oral Testimony: 11/15/18
NAIMA	Angus Crane, North American Insulation Manufacturers Association Written Testimony: 10/24/18
NAN	Raemeisha Williams, National Action Network Oral Testimony: 11/15/18
NANLA	Vivian Mullen Williams, National Action Network of Los Angeles Oral Testimony: 11/15/18
NCCRC	Tim Litton, Northern California Carpenters Regional Council Oral Testimony: 11/15/18
NCPA	Susie Berlin, Northern California Power Agency Written Testimony: 10/24/18
NCPA-MSR-GOLDENSTATEPOWER	Susie Berlin, Northern California Public Power, MSR Public Power and Golden State Power Cooperative Oral Testimony: 11/15/18
NEARZERO	Danny Cullenward, Near Zero Written Testimony: 10/22/18
NEARZERO2	Danny Cullenward, Near Zero Oral Testimony: 11/15/18

Abbreviation	Commenter
NEWFORESTS	Emily Warms, New Forests Written Testimony: 10/22/18
NEWFORESTS2	Emily Warms, New Forests Oral Testimony: 11/15/18
NEXTGEN	David Weiskopf, NextGen California Written Testimony: 10/22/18
NEXTGEN2	David Weiskopf, NextGen America Oral Testimony: 11/15/18
NISEIFARMERS	Peter Aguyo, Nisei Farmers League Oral Testimony: 11/15/18
ORANGECOVE	Victor Lopez, Mayor of Orange Cove, Central Valley Latino Mayors & Elected Officials Coalition Oral Testimony: 11/15/18
ORANGECOVE2	Roy Rodriguez, Orange Cove City Council and Central Valley Latino Mayors & Elected Officials Coalition Oral Testimony: 11/15/18
P&G	Simon Martin, P&G Manufacturing Written Testimony: 10/18/18
P&G2	Simon Martin, Procter & Gamble Manufacturing Company Written Testimony: 10/22/18
P&G3	Simon Martin, Procter & Gamble Oral Testimony: 11/15/18
PACCOASTPRODUCERS	Erick Watkins, Pacific Coast Producers Oral Testimony: 11/15/18
PACIFICORP	Mary Wiencke, PacifiCorp Written Testimony: 10/22/18
PANOCHE	Robin Shropshire, Panoche Energy Center Written Testimony: 10/22/18
PANOCHE2	Robin Shropshire, Panoche Energy Center Oral Testimony: 11/15/18
PG&E	Fariya Ali, Pacific Gas & Electric Written Testimony: 10/22/18
PG&E2	Fariya Ali, Pacific Gas and Electric Oral Testimony: 11/15/18
PG&E3	Mark Krausse, Pacific Gas and Electric Oral Testimony: 11/15/18
PGCS	Juan Garcia, PG Cutting Services Oral Testimony: 11/15/18
PHILLIPS66	John Askounis, Phillips 66 Written Testimony: 10/22/18
PHILLIPS662	Steven Smith, Phillips 66 Oral Testimony: 11/15/18

Abbreviation	Commenter
PLACERVILLE	Michael Saragosa, City of Placerville Oral Testimony: 11/15/18
POLICYINTEGRITY	Denise Grab, Institute for Policy Integrity, NYU Law Written Testimony: 10/22/18
QCR	Sterling Griffin, Quality Carbon Registry Written Testimony: 10/22/18
QUALCOMM	Gail Welch, Qualcomm Inc. Written Testimony: 10/22/18
ROSEVILLEELECTRIC	David Siao, Roseville Electric Oral Testimony: 11/15/18
SCPPA	Nicholas Blair, Southern California Public Power Authority Written Testimony: 10/15/2018
SCPPA2	Tanya DeRivi, Southern California Public Power Authority Oral Testimony: 11/15/18
SCS	Zane Haxtema, SCS Global Services Written Testimony: 10/22/18
SDG&E	Tim Carmichael, San Diego Gas & Electric Company Written Testimony: 10/22/18
SEMPRA	Tim Carmichael, Sempra Utilities (SoCalGas and San Diego Gas and Electric) Oral Testimony: 11/15/18
SHELL	Heather Karlstad, Shell Energy North America (US), LP Written Testimony: 10/22/18
SIERRACLUB-EARTHJUSTICE	Ana Boyd, Sierra Club California Written Testimony: 10/22/18
SILICONVALLEADERGROUP	Mike Mielke, Silicon Valley Leadership Group Written Testimony: 10/22/18
SILICONVALLEYCOALITION	Deborah Levoy, for 350 Silicon Valley et al. Written Testimony: 10/22/18
SJFB	Bruce Blodgett, San Joaquin Farm Bureau Oral Testimony: 11/15/18
SMUD	William Westerfield, Sacramento Municipal Utility District Written Testimony: 10/22/18
SMUD2	Timothy Tutt, Sacramento Municipal Utility District Oral Testimony: 11/15/18
SPI	Cedric Twight, Sierra Pacific Industries Oral Testimony: 11/15/18
TCFB	Tricia Stever Blattler, Tulare County Farm Bureau Oral Testimony: 11/15/18

Abbreviation	Commenter
TURLOCKID	Dan B. Severson, Turlock Irrigation District Written Testimony: 10/22/18
UC	Nicholas Balistreri, University of California Written Testimony: 10/22/18
URFC	Tom Tuchman, Usal Redwood Forest Company Oral Testimony: 11/15/18
VERA	Jon Costantino, Verified Emissions Reduction Association Written Testimony: 10/16/2018
VERA2	Jon Costantino, Verified Emissions Reduction Association Oral Testimony: 11/15/18
VICA	Ryan Hallenberg, Valley Industry and Commerce Association Oral Testimony: 11/15/18
VISIONS	Ron Hayes, Visions of Heaven Church and Visions Community Outreach Oral Testimony: 11/15/18
WAPA	Santee Peebles, Western Area Power Administration Written Testimony: 10/22/18
WEBER	Todd Weber Written Testimony: 10/22/18
WPTF	Clare Breidenich, Western Power Trading Forum Written Testimony: 10/16/2018
WSPA	Tiffany Roberts, Western States Petroleum Association Written Testimony: 10/22/18
WSPA2	Tiffany Roberts, Western States Petroleum Association Written Testimony: 10/22/18
WSPA3	Andrew Westgate, Latham & Watkins LLP Written Testimony: 10/22/18
WSPA4	Tiffany Roberts, Western States Petroleum Association Oral Testimony: 11/15/18

B. GHG EMISSIONS BUDGET AND COST CONTAINMENT

B-1. Achieving Emissions Reductions: Priorities and Strategies

Economic Growth, Benefitting Disadvantaged and Other Californians, and Environmental Integrity

B-1.1. Comment:

We begin with three important principles. First, it is crucial that decarbonization of the state’s economy not interfere with California’s economic growth and that the state

continues the trend of decoupling greenhouse gas (GHG) emissions from economic activity. Ensuring that our climate policies are as cost-effective as possible (consistent with other goals) is important to achieving this outcome. Second, the programs the state has adopted to reduce our GHG emissions – both legislatively and administratively – must be administered in ways that maximize benefits to all Californians, particularly those in disadvantaged and vulnerable communities. And third, the state’s programs to reduce emissions must be designed to maximize environmental integrity – to produce real, verifiable emissions reductions that help reduce overall global emissions. As the state’s emissions targets ratchet down and the state aims to achieve carbon neutrality by 2045, achieving cost-effective reductions that have environmental integrity and produce benefits to all Californians will become tougher. Our aim in this report is to begin to evaluate areas of carbon market design with these background principles in mind. (IEMAC)

Response: The commenter lays out principles the commenter will utilize in evaluating climate programs administered by CARB, but does not suggest any modifications to the amendments. As such, no further response is necessary.

Concerns with Cap-and-Trade Program Stringency

B-1.2. Comment:

The need for steep reductions in greenhouse gas emissions in order to avoid the worst impacts of climate change is becoming clearer every year, and indicates that California and the world must use all available options to reduce greenhouse gas emissions in the near term. In this context, the cap-and-trade program is frustrating, as that market mechanism tends to postpone potentially greater reductions in favor of smaller and less expensive options in the near term, and can divert attention and resources from other urgently needed and cost-effective GHG reduction activities.

A recent 2018 report from the Intergovernmental Panel on Climate Change (IPCC) highlights the necessity of limiting warming to 1.5°C, rather than the Paris Agreement’s 2°C, to avoid catastrophic impacts to people and life on Earth.¹⁰ According to the IPCC’s analysis, the damages that would occur at 2°C warming compared with 1.5°C include more deadly heatwaves, drought and flooding; 10 centimeters of additional sea level rise within this century, exposing 10 million more people to flooding; a greater risk of triggering the collapse of the Greenland and Antarctic ice sheets with resulting multi-meter sea level rise; dramatically increased species extinction risk, including a doubling of the number of vertebrate and plant species losing more than half their range, and the virtual elimination of coral reefs; 1.5 to 2.5 million more square kilometers of thawing permafrost area with the associated release of methane, a potent greenhouse gas; a

¹⁰ IPCC [Intergovernmental Panel on Climate Change], *Global Warming of 1.5°C*, an IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty (October 6, 2018), <http://www.ipcc.ch/report/sr15/>.

tenfold increase in the probability of ice-free Arctic summers; a higher risk of heat-related and ozone-related deaths and the increased spread of mosquito-borne diseases such as malaria and dengue fever; reduced yields and lower nutritional value of staple crops like corn, rice, and wheat; a doubling of the number of people exposed to climate-change induced increases in water stress; and up to several hundred million more people exposed to climate-related risks and susceptible to poverty by 2050.¹¹

In order to avoid these catastrophic consequences, the 2018 IPCC report provided a revised carbon budget for a 66 percent probability of limiting warming to 1.5°C, estimated at 420 GtCO₂ and 570 GtCO₂ depending on the temperature dataset used, from January 2018 onwards.¹² At the current emissions rate of 42 GtCO₂ per year, this carbon budget would be expended in just 10 to 14 years, underscoring the urgent need for immediate, transformative global action to transition from fossil fuel use to clean energy.¹³ Simply put, we are out of time to make the significant and systemic changes needed to avert disaster.

However, given that ARB has chosen to place a great emphasis on cap-and-trade as a mechanism for achieving California's greenhouse gas reduction goals, it is very important that the program be as ambitious and well designed as possible. It is in that context that we offer these comments. (CENTERBIODIV)

Response: The comment highlights the recent 2018 Intergovernmental Panel on Climate Change (IPCC) report. The commenter appears to question the use of a cap-and-trade mechanism, and indicates that further comments are intended to ensure an ambitious and well designed Cap-and-Trade Program. While this specific comment does not provide recommended changes, as those are addressed elsewhere, CARB staff responds as follows. CARB staff agrees that the IPCC report highlights the need for ambition, and the need to simultaneously find a path to zero emissions in all of our energy and industrial sectors while we reduce emissions from deforestation and sequester carbon through our natural working lands and other mechanisms. The current SB 32 target is consistent with the IPCC calls for decarbonizing the transportation, energy, and other covered sectors, but additional action on sequestration will be needed. Moreover, in developing the 2017 Climate Change Scoping Plan (2017 Scoping Plan),¹⁴ CARB assessed a suite of policies, including a Cap-and-Trade Program, that was found to be the most cost-effective path to achieve California's

¹¹ Id. at Summary for Policymakers.

¹² IPCC [Intergovernmental Panel on Climate Change], Global Warming of 1.5°C, an IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty (October 6, 2018), <http://www.ipcc.ch/report/sr15/>.

¹³ Id.

¹⁴ See https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.

ambitious 2030 target, with the least estimated impacts to the economy, jobs, and households.

Need to Model Cap-and-Trade Program

B-1.3. Comment:

According to the Final 2030 Scoping Plan, the cap and trade market will have to achieve 43 percent of the total reductions needed to achieve the 2030 target. In CEJA's comment letter on the 2030 Final Scoping Plan, we note that there has yet to be clear analysis to show how the cap and trade market will achieve the additional reductions, how new prescriptions may or may not necessitate changes in market design, nor what other measures might be needed if the market cannot achieve the emissions outlined. We encourage CARB to model how different design scenarios for the cap and trade market will impact California's ability to meet the 2030 emission reduction goals. This should include, but is not limited to, modeling various pricing options, including the price ceiling, price floor and price containment points, strategies to addressing the issue of overallocation, and what the impacts by sector will be on actual emission trends. (CEJA)

Comment:

a. ARB has not shown how the proposed market design will achieve the emission reductions identified as necessary in the Board's 2017 Scoping Plan.

Cap-and-trade programs can be effective mechanisms to reduce greenhouse gas emissions, but only if the supply of allowances (and offset credits) is appropriately balanced in relation to the emissions covered under the program. If the supply of allowances is too generous, emissions won't fall in line with program expectations; conversely, if the supply is too restrictive, emissions will be forced to decline more rapidly, and likely at higher cost, than policymakers intended. With or without a binding supply of allowances, market prices will also induce some level of emission reductions, but the extent of this price-induced mitigation would need to be analyzed carefully. ARB has not analyzed this issue during the AB 398 implementation process. (NEARZERO)

Comment:

1. Create an Open and Transparent Market: We strongly encourage creating a more open and transparent market while maintaining appropriate protections. This includes providing more open and transparent information regarding the total number of allowances in the market, including those that are banked, and for how long, while maintaining protections for market-sensitive entity information...

Open and Transparent Market

Our primary concern is the issue of transparency, including privately banked, as we are concerned there may be an oversupply of allowances in the market. A lack of

transparency can inhibit performance by making it difficult to estimate the total amount of existing allowances.

After speaking to multiple subject matter experts, there is consensus that there appears to be an oversupply in the current market. Allowances left over at the end of auctions indicate some oversupply. This oversupply jeopardizes the ability of the program to help achieve the state's goal, as it negates the effects of lowering emissions if entities can purchase and bank more allowances than is needed. Left unaddressed, this could cause the state to overshoot its 2030 emissions target.

We ask that the CARB consider a system to track and publicly post information about allowances while ensuring the safety of market sensitive information.
(SILICONVALLEADERGROUP)

Comment:

Consistency of Market Design and Pollution Reduction Targets

We reiterate our request that the Board analyze the proposed rules for consistency with the Scoping Plan and our long term carbon reduction targets. The proposed regulations do not appear to fully grapple with the credible evidence put forward by many observers that the overallocation that exists in the cap-and-trade market may interfere with the market's ability to drive pollution reductions at the scale required to reach our 2030 target, or to put us on track to achieve the 2050 80% reduction goal and to achieve a carbon neutral state by 2045. We urge the Board to fully analyze whether the proposed rules, and the proposed decision to take no steps to adjust allowance supply or banking rules while maintaining current price floor trajectories will result in an adequate price signal to spur the innovation needed to reach our scientifically-needed goals...

Attachment 1: October 12, 2017 Workshop Comments

As the California Air Resources Board (CARB) considers how best to implement AB 398 and achieve the greenhouse gas reduction targets required under SB 32 and AB 197, cap and trade program design considerations will be more important than ever. According to the updates to the scoping plan that CARB shared on the morning of October 12, 2017, CARB is contemplating a scoping plan under which the existing emissions-reducing policies that will contribute to meeting our 2030 carbon reduction targets will only drive 57% of projected cumulative emissions reductions with cap and trade driving the remaining 43% via the price signal it creates. As recently as March of this year, CARB expected these policies to provide 72% of reductions, and cap and trade to provide 28%.¹⁵ (See Figure 1).

¹⁵ Compare PATHWAYS Outputs, GHG Emissions by Measure, Scoping Plan Scenario, https://www.arb.ca.gov/cc/scopingplan/pathways_ghgs_by_measure_final_17jan2017.xlsx, to Slide 16, <https://www.arb.ca.gov/cc/scopingplan/meetings/101217/sp-october-workshop-slides.pdf>.

This shift means that the cap and trade program must drive 53% more reductions than CARB had previously expected unless additional technological breakthroughs, more aggressive complementary policies adopted via regulation or legislation, or other exogenous factors lead to significantly more reductions than are currently anticipated. In previous years, scoping plans anticipated that the carbon market would drive far fewer reductions both in absolute terms and as a proportion of all emissions reductions.

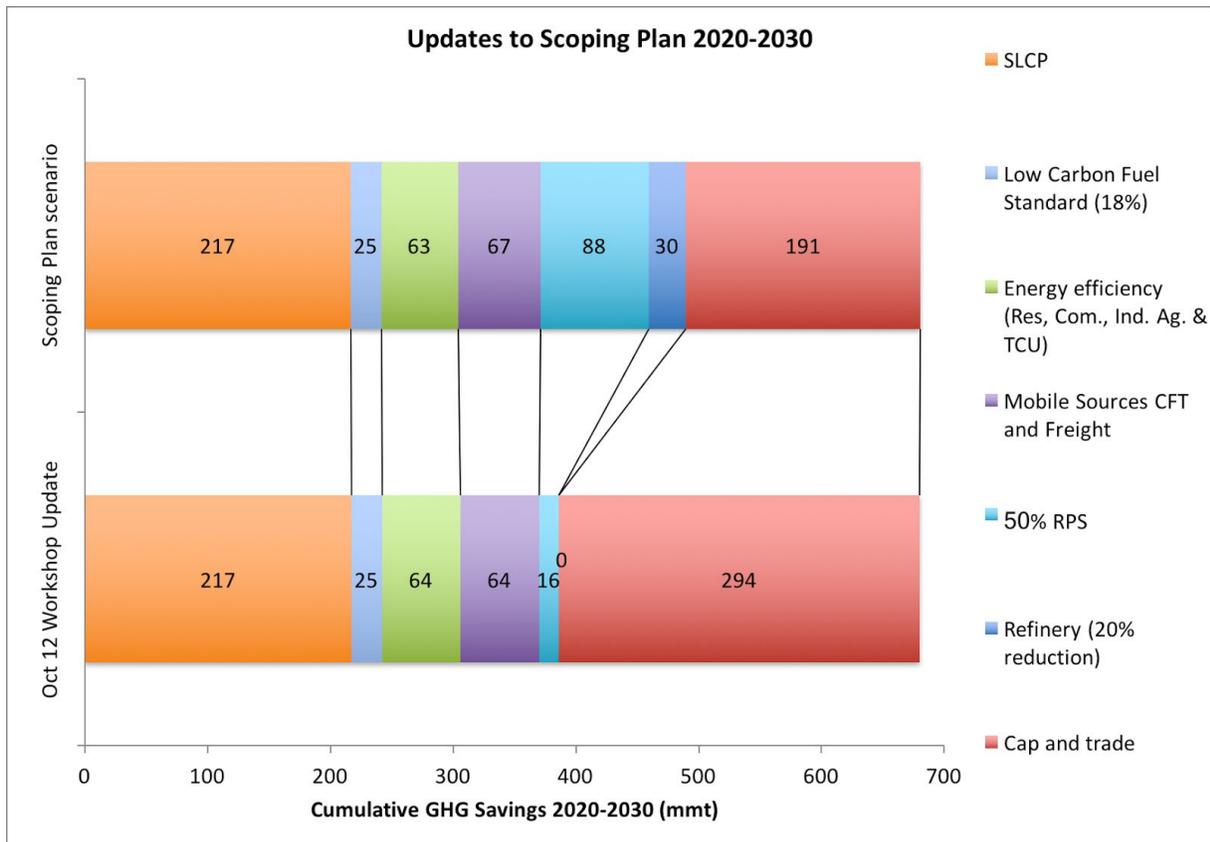


Figure 1: Comparison of Cumulative Projected Emissions Reductions, March 2017 PATHWAYS Outputs vs. October 12 Scoping Plan Update Presentation

These shifts come at a time when additional reductions from the electric sector, which has led emissions reductions to date, will begin to take on a diminishing role in California’s overall greenhouse gas abatement efforts. Electricity sector emissions currently represent only about one fifth of statewide emissions. Even if this sector were to achieve carbon neutrality in 2030 (a significantly faster rate of decarbonization than is contemplated even by SB 100, which, if passed, would establish a 60% Renewable Energy target for 2030), it would only achieve about half of the required reductions. Other economic sectors, which have historically had more difficulty reducing emissions, must significantly accelerate their rate of decarbonization, and these reductions must be driven in substantial part by the carbon pricing mechanism in the cap and trade program.

At the same time, AB 398 limits some tools available to the state to help drive reductions in some of the sectors where it has been most difficult to make progress, by eliminating CARB's authority to directly regulate CO2 from refineries and by removing authority of Air Districts to adopt more stringent local and source-specific CO2 standards than CARB. AB 398 also requires CARB to maintain high Industry Assistance Factors for refineries and other heavy industrial emitters, which reduces the incentive cap and trade can provide for these sources to invest in technologies that will help them to reduce carbon emissions. These statutory changes place even more pressure on the cap and trade program to drive large emissions reductions from a shrinking pool of emissions, even as some sources are provided with counter-incentives that may tend towards slowing those same reductions.

It is therefore essential that CARB assess how updates to the cap and trade program are likely to affect economy-wide and sector-specific emissions prior to adopting new regulations. The following comments offer constructive suggestions for how CARB can help to ensure that the cap and trade program is as effective as possible as it takes on this difficult, but achievable task.

1. CARB should adopt market rules that will help to ensure that the ambitious level of emissions reductions reflected in the scoping plan are actually achieved and that the State achieves both cumulative and annual emissions reductions in a manner that complies with SB 32 and AB 197

SB 32 requires that CARB “ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below the statewide greenhouse gas emissions limit no later than December 31, 2030.”¹⁶ It is notable that this target sets a date certain by which the 40% emissions reduction must be achieved, rather than establishing a cumulative emissions limit. This date-specific target is consistent with the broader goal of California's climate policy: to move our state towards a clean economy that will be sustainable for many future generations.

Achieving this goal requires substantially decarbonizing by mid-century and achieving at least the 80% reduction by 2050 specified in Executive Order B-30-15. The 2030 target marks progress along the way but simply meeting this target – or some proxy for it as expressed in a cumulative emissions inventory – does not constitute success; the State's emissions must be on a trajectory that maximizes the chance of achieving broad mid-century decarbonization. The current cap and trade market structure could allow real emissions to greatly exceed the SB 32 target even while the program is nominally meeting all of its own goals, through the use of allowances banked or held in reserve – of which there is a massive supply at present¹⁷ – and offsets. Such an outcome would

¹⁶ California Health and Safety Code § 38566.

¹⁷ Legislative Analyst's Office, letter to Hon. Cristina Garcia, June 26, 2017. Attached. [The attached letter of 7 pages appears intended to support the arguments and requests stated in the main comment. These documents can be viewed in the original comment letter, available in the comment log for Cap and Trade 2018 at <https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=ct2018>.]

dramatically increase the required rate of post-2030 emissions cuts, making attainment of critical mid-century goals much more difficult. To avoid this dangerous outcome, actual emissions in 2030 must be at or below SB 32 targets.

Merely identifying the remaining required reductions after existing complementary measures are fully achieved as work for cap and trade to do through “the magic of the marketplace” does not provide Californians with an adequate basis for assessing the efficacy of proposed market changes to achieve the substantial remaining reductions. Nor is this approach consistent with the spirit of AB 197, which requires that CARB’s actions to reduce greenhouse gas emissions “be done in a manner that is transparent and accountable to the public and the Legislature” and CARB prioritize approaches “that result in direct emission reductions at large stationary sources of greenhouse gas emissions sources and direct emission reductions from mobile sources.”¹⁸

When considering how best to implement cap and trade for 2020-2030, CARB should therefore analyze and publish one or more scenarios showing actual emissions by sector that comply with the SB 32 target that could plausibly result from the combination of cap and trade and existing complementary measures. If CARB determines that additional complementary measure will be needed in order to ensure that cap and trade allowance prices remain within tolerable ranges, it should adopt those policies if it has authority to do so and identify needed policy changes that the legislature should consider...

Attachment 2: March 2, 2018 Workshop Comments

2. Several Interacting Factors Affect the Market’s Ability to Drive Cumulative Reductions Expected by the Scoping Plan and Achieve the 2030 Target, Given Current Oversupply

We have previously commented on the significant role assigned to the cap and trade program in the Scoping Plan, and asked CARB to fully evaluate whether and how proposed market rules will enable the program to deliver pollution reductions at this unprecedented scale. Our concern is that nominal compliance with cap-and-trade obligations will not guarantee compliance with the annual emissions target in 2030 if large numbers of banked permits are used for compliance in the last compliance period, or if current market oversupply conditions persist long enough to unduly delay investments in pollution reducing technologies that will be needed to achieve the 2030 target and put us on a trajectory to achieve the 2050 target.

We identify three interdependent factors that will affect the cap and trade program’s ability to deliver the pollution reductions required to achieve the 2030 target: Total Allowance Supply and Distribution Among Reserve Tiers, Banking Rules, and Complementary Policies. No one of these factors should be considered in isolation,

¹⁸ AB 197 (2016) Findings and Declarations and California Health and Safety Code § 38562.5(a). I.e., if 6% of aggregate emissions are offset, to reach a nominal cap of 200.5 million tonnes, actual emissions will be $200.5 / .94 = 213.3$ million tons, 12.8 million tons above the nominal cap.

because each affects the overall market dynamics, including allowance scarcity, price signals, and investment timing. For this reason, CARB should analyze likely market performance under a range of scenarios, and adopt rules that are consistent with the level of performance required of the market under the Scoping Plan Scenario...

3. CARB Should Provide a Transparent Analysis Showing that its Proposed Cap and Trade Market Rules, plus Complementary Policies, will Deliver Compliance with SB 32

The Scoping Plan attributes 236 million tons of cumulative emissions reductions between 2021 and 2030 to the cap and trade program, and 60 (34 – 79) million tons of reductions in the year 2030. These numbers, however, were derived by subtraction, not analysis. Staff developed an estimate of the total emission reductions from a Reference scenario required to meet the SB 32 target and subtracted reductions expected from a set of sector-specific “known commitments,” yielding a gap that the Scoping Plan assumes will be filled by the cap and trade program.

While this may have been an acceptable approach for developing the Scoping Plan at a time when the post-2020 cap and trade market rules had not yet been defined, CARB staff should present a more rigorous estimate of the emission reductions that cap and trade can be expected to deliver given the final set of market rules it proposes for adoption. This would allow the Board to assess whether the proposed rules, in combination with complementary sector-specific policies, are likely to achieve the SB 32 target, as required.

This analysis should not only provide a reasonable estimate of the aggregate emission reductions expected from cap and trade, given the proposed market rules, but also one or more SB 32-compliant scenarios showing actual emissions by sector that could plausibly result from the combination of cap and trade and known commitments to complementary sector-specific measures. This level of disaggregation is necessary to allow CARB and interested stakeholders to evaluate the credibility of the analysis in attributing emissions reductions to different policies while avoiding double counting. This would also allow CARB to determine whether it would be desirable to strengthen known commitments or adopt additional complementary measures to provide greater assurance that the SB 32 target will be met. (NEXTGEN)

Response: The commenters state that CARB should demonstrate specific means by which the Cap-and-Trade Program, in combination with complementary measures, will achieve SB 32’s 2030 emissions targets in an effective manner. Staff responds to the specific points made in the comment letters below. Due to the number of comment letters making similar points, CARB uses headings to inform the reader of the specific substantive issue that CARB is addressing.

Inclusion of the Cap-and-Trade Program in 2017 Scoping Plan is appropriate

Some commenters express concern over the role of the Cap-and-Trade Program in the context of the 2017 Scoping Plan and its role in reducing GHG emissions towards the statewide GHG reduction targets. It appears some of the data relied upon by these commenters is outdated and does not reflect the final 2017 Scoping Plan where, using the best available data at the time, it was estimated the Cap-and-Trade Program would need to deliver 38 percent of the reductions post-2020 to achieve the 2030 target. CARB staff also notes that increased reductions from complementary policies (such as the recently adopted more rigorous 20 percent reduction in carbon intensity from the Low Carbon Fuel Standard) would mean less remaining reductions for the Cap-and-Trade Program

It is important to note that the 2017 Scoping Plan is a suite of policies, of which many are leveraged for reducing both traditional local air pollutants and GHGs. In the development of the 2017 Scoping Plan, various alternatives to a Cap-and-Trade Program were evaluated. These included prescriptive regulations and carbon taxes. Through the emissions and economic evaluations, it was demonstrated that a suite of policies that includes the Cap-and-Trade Program is the most cost-effective path to achieving the 2030 target, resulting in lower impacts to the economy, households, and jobs. A Scoping Plan that includes the Cap-and-Trade Program was found to be 4 times less costly than other alternatives.

A Scoping Plan that includes a Cap-and-Trade Program has the highest certainty in achieving the 2030 target

Some commenters request an analysis of how the Cap-and-Trade Program, along with the other measures in the Scoping Plan, will enable to state to achieve the 2030 target. The suite of measures evaluated in the 2017 Scoping Plan, which is called the 2017 Scoping Plan Scenario, represents an expected case where current and proposed GHG reduction policies and known commitments perform as expected and technology is readily available and deployed on schedule. CARB conducted an uncertainty analysis for the 2017 Scoping Plan¹⁹ to examine the range of outcomes that could occur under the Scoping Plan policies and measures. This analysis evaluated the following factors:

- Economic growth through 2030;
- Emission intensity of the California economy;
- Cumulative emissions reductions (2021 to 2030) achieved by the prescriptive measures, including the known commitments; and

¹⁹ See Appendix E to the 2017 Scoping Plan, at https://www.arb.ca.gov/cc/scopingplan/2030sp_appe_econ_final.pdf.

- Cumulative emissions reductions (2021 to 2030) that can be motivated by emission prices under the Cap-and-Trade Program.

Using a Monte Carlo simulation, the uncertainty analysis concluded a Scoping Plan with a Cap-and-Trade Program has the highest likelihood of achieving California's 2030 GHG target.²⁰ As further described below, the commenters appear to misunderstand that this analysis was actually conducted and CARB staff encourages the commenters to refer back to the 2017 Scoping Plan, as well as the uncertainty analysis contained in Appendix E to the 2017 Scoping Plan. That same uncertainty analysis had to make some assumptions about the ability of the Cap-and-Trade Program to deliver specific quantities of reductions at specific prices. All of this supporting information was made available during the development of the 2017 Scoping Plan for public review and comment.

Cap-and-Trade Program transparency

Some commenters claim that the Cap-and-Trade Program lacks transparency in its contributions to meeting the SB 32 target. It is unclear what the commenter is seeking as further transparency. One design feature of the Program is its ability to allow businesses flexibility to identify their own cost-effective reductions opportunities and take action on those first. This is unlike a prescriptive regulation where the regulator would specify which specific actions businesses must undertake to reduce emissions. Staff recognizes this approach is a departure from historical command and control regulations deployed by the state and specific actions to reduce emissions within entities across the economy are not knowable. As part of the Standard Regulatory Impact Assessment (SRIA), contained as Appendix C of the ISOR,²¹ staff highlighted a few actions that could be taken to reduce emissions at large GHG emissions sources.

In terms of progress towards achieving the SB 32 target, CARB closely monitors the State's emissions and other factors in order to ensure measures in the 2017 Scoping Plan will meet the State's statutory GHG reduction targets. CARB ensures public transparency in this process by posting an annual GHG inventory on our website.²² GHG emissions may change year-to-year, and CARB tracks factors including economic activity, fuel use, climate conditions, growth in renewables, deployment of cleaner vehicles, and others. All of these metrics, including the GHG inventory, are publicly available data.

The Cap-and-Trade Program is just one of several policies in place to reduce GHG emissions. As has been mentioned in public workshops, it is challenging to identify a specific action in response to the Program when there are local, state,

²⁰ See *Uncertainty Analysis Results*, p90

https://www.arb.ca.gov/cc/scopingplan/2030sp_appe_econ_final.pdf

²¹ <https://www.arb.ca.gov/regact/2018/capandtrade18/ct18sria.pdf>

²² <https://www.arb.ca.gov/cc/inventory/data/data.htm>

and federal regulations, and complementary policies that overlay many of the sectors in the Program. If it appears emissions are not declining as needed, recognizing year to year variability due to climate, global fuel prices, or economic factors that can influence emissions, CARB would evaluate which sectors are not responding as anticipated, review all programs that cover those sectors, and ascertain why as well as assessing the best path forward to achieve the reductions necessary to meet the legislatively-established GHG targets.

Use of the Cap-and-Trade Program is in keeping with Assembly Bill 197's requirements

With respect to one commenter's assertions that relying on a market program does not comport with the spirit of Assembly Bill 197 (AB 197; Chapter 250, Statutes of 2016) to provide transparent accounting, CARB staff strongly disagrees with the comment, and as indicated in the next paragraph, provides substantial data that is released to ensure transparent accounting. Moreover, as indicated in Chapter VII of the Staff Report, AB 197 provides that, when adopting rules and regulations pursuant to Division 25.5 of the Health and Safety Code to achieve emissions reductions beyond the 2020 statewide greenhouse gas limit, CARB shall follow the requirements in Health and Safety Code section 38562(b), consider the social costs of the emissions of greenhouse gases, and prioritize emissions reduction rules and regulations that result in direct emission reductions from various sources. The adopted amendments are wholly consistent with these considerations pursuant to AB 197. See also Response to 45-Day Comment C-1.4 for a further discussion of Cap-and-Trade and AB 197.

Several commenters requested more transparent information, including on allowance supply and banked allowances. As noted above, all GHG inventory data is already public. CARB also provides annual facility- and entity-level GHG data once it is verified, compliance instrument usage (e.g., number of each vintage of allowances and the number of offsets and specific projects surrendered for compliance), as well as quarterly reports on compliance instrument supply (e.g., whether they are in private accounts, state accounts, the retirement account, etc.), offset credit issuance and offset project information, and other market-related information. In some instances, it is unclear if the commenters are asking for additional data or for the existing public data to be summarized and reported out in a different format. CARB staff continues to assess other types of information and analyses that might be helpful to release, while balancing the need to protect confidential information.

Ongoing opportunities for effective oversight on progress towards meeting the SB 32 target

Opportunities to review the State's progress toward achieving our GHG targets include statutorily required updates to the Scoping Plan at least every five years,

AB 32 reporting requirements, annual updates to the GHG inventory, annual oversight hearings by the Joint Committee on Climate Change Policies, and CARB Board updates. As with all of CARB's programs, staff will monitor and evaluate modifications to ensure the state remains on track to achieve the statutory GHG reduction targets.

AB 398 provides additional opportunities for reviewing the economic and environmental performance of the 2017 Scoping Plan measures. Specifically, AB 398 calls for the independent emissions advisory committee (IEMAC) to report annually on the economic and environmental performance of Cap-and-Trade and other related climate policies. AB 398 also calls for the Legislative Analyst's Office to annually report to the legislature on the economic impacts and benefits of specified greenhouse gas targets.

The design of the Cap-and-Trade Program supports a steadily increasing carbon price signal

One commenter states that the current price trajectory will not result in sufficient reductions to meet the 2030 goals. As noted in Appendix D to the ISOR, since the very beginning, the Cap-and-Trade Program has included several features to support a steadily increasing carbon price signal. These features include:

- An increasing Auction Reserve Price (floor price),
- Holding limits to deter and prevent market manipulation by restricting the number of allowances any single entity can own, and
- A self-ratcheting mechanism to remove unsold auction allowances from the market and place those in higher priced tiers

As included in Appendix D, the allowance prices in the state's Cap-and-Trade Program are higher than those in the Regional Greenhouse Gas Initiative and the European Emissions Trading System (until the recent implementation of the Market Stability Reserve). See Response to 45-Day Comment B-2.1 for a further discussion of allowance prices in California's Program relative to other emissions pricing initiatives.

Appendix D also includes details regarding how the post-2020 caps will be binding on GHG emissions to further support a steadily increasing carbon price signal. CARB disagrees with the comment that the existence of the Cap-and-Trade Program has no effect on emissions. The commenter provides no analyses or support that indicates the current allowance prices in the Program are insufficient to result in GHG emissions reductions towards achieving the 2030 target and also ignores that not all GHG sources counted under the SB 32 target are under the Program and therefore may need to be addressed through completely separate mechanisms to ensure the state achieves the 2030 target.

California allowances have recently been trading around \$15 per ton, and the Greenhouse Gas Reduction Fund (GGRF) has received billions in proceeds from auction purchases. It is not reasonable to assume that businesses would pay this much without carefully examining opportunities to reduce such costs in the future by investing in direct emissions abatement.

The Cap-and-Trade Program is designed to prompt covered businesses to implement the lowest-cost emissions reduction actions first. As regulators, we do not always have perfect information on where the lowest-cost emissions reductions can occur which is why the Cap-and-Trade Program delivers reductions at lower costs than other prescriptive alternatives. Some sectors will respond more quickly to a carbon price than others. For example, the electricity sector is already responding to today's carbon price since the price has been incorporated into electricity dispatch models in response to the Cap-and-Trade Program. The ability of each sector to react to a carbon price without merely reducing production is something that CARB has been evaluating for the past few years and discussing with industry and stakeholders.

CARB expects a smooth transition from the current path of meeting our 2020 climate targets ahead of schedule, to the prices that will motivate further reductions to achieve our 2030 target. This smooth transition is realized due to cost-containment features that already exist in the Program and the new features included in AB 398. As stated in Response to 45-Day Comment B-2.1, based on staff and third-party analyses, it is expected that allowance prices will continue to steadily increase in the next decade. Any proposal to remove allowances from the system must acknowledge that the result will be higher allowance prices, reached sooner, than would result from the adopted amendments to the Regulation.

No changes to banking rules

One key feature of the Cap-and-Trade Program is the ability of businesses to reduce emissions early and "bank" those allowances for future use. Since the beginning of the Program, CARB has included rules allowing limited banking of compliance instruments, recognizing that banking creates flexibility and "an incentive to make early reductions and encourages long-term commitment to the system from stakeholders."²³ Under the analysis conducted in Appendix D to the ISOR for this rulemaking,²⁴ staff believe that the existing banking provisions of the Regulation, in conjunction with holding limits and other requirements of the Program, already discourage speculation, avoid financial windfalls, and consider the impact on complying entities and volatility in the market. As noted in Appendix D, and based on program data, in the last three years the average

²³ <https://www.arb.ca.gov/regact/2010/capandtrade10/capv2appd.pdf>

²⁴ <https://www.arb.ca.gov/regact/2018/capandtrade18/ct18398.pdf>

number of California registered entities that have come within at least 95 percent of the holding limit is less than one percent. As such, staff has established such banking rules and has not proposed any modifications to the existing banking rules as part of the adopted amendments.

The historical performance of the Program demonstrates it is designed to support a steadily increasing carbon price signal. The continued use of banking, carefully designed price containment tiers as required by AB 398, allocation to minimize leakage, a steadily escalating auction floor price, and sufficient offset supply should provide for a smooth carbon price trajectory through 2030.

Additional modeling scenarios

The commenters request CARB analyze one (or more) viable paths with sector-specific details demonstrating how the State will achieve the 2030 target with Cap-and-Trade. CARB staff emphasizes again that Cap-and-Trade is one of a suite of measures to meet the 2030 targets and the requested analysis was already conducted as part of the adoption of the 2017 Scoping Plan. As briefly described above, the 2017 Scoping Plan's Appendix E²⁵ and the Scoping Plan's use of the PATHWAYS modelling tool that was calibrated for California (California PATHWAYS) offer a detailed sector-specific analysis of the contributions of each measure included in the adopted Scoping Plan minus the Cap-and-Trade Program. The uncertainty analysis also evaluated scenarios across different economic conditions as noted earlier in this response. To better understand the opportunities to reduce emissions in sectors covered by the Cap-and-Trade Program, staff included several reduction scenarios in the SRIA, contained as Appendix C of the ISOR. See Responses to 45-Day Comments B-3.12 and B-3.14 for a further discussion of cost containment modelling conducted as part of the adopted Regulation.

One commenter also requested that CARB publish emissions scenarios showing actual emissions through 2030. CARB staff refers the commenter to the analyses referenced above from the 2017 Scoping Plan, but again notes that the exact reduction activities under the Cap-and-Trade Program are not known or able to be modeled given the flexibility afforded under the Program which differs from a traditional command and control regulatory approach.

On a related note, staff appreciates the commenters' interest in quantitative analyses, but would direct attention to the Appendix D to the ISOR which details the level of uncertainty in trying to forecast emissions out towards 2030. A path forward that includes periodic forecast modeling, with annual tracking, and

²⁵ https://www.arb.ca.gov/cc/scopingplan/2030sp_app_econ_final.pdf

adjustments as needed is a prudent approach to ensuring we achieve the 2030 target.

Price Ceiling modeling

With respect to one commenter's request for modeling different price ceilings, CARB staff notes that AB 398 states in part that, for any post-2020 Cap-and-Trade Program, CARB must "[e]stablish a price ceiling. In establishing the price ceiling, the state board shall consider, using the best available science, all of the following:

- (I) The need to avoid adverse impacts on resident households, businesses, and the state's economy.
- (II) The 2020 tier prices of the allowance price containment reserve.
- (III) The full social cost associated with emitting a metric ton of greenhouse gases.
- (IV) The auction reserve price.
- (V) The potential for environmental and economic leakage.
- (VI) The cost per metric ton of greenhouse gas emissions reductions to achieve the statewide emissions targets established in Sections 38550 and 38566."

(Health & Safety Code § 38562(c)(2)(A)(i)(I-VI).)

In other words, CARB must establish a price ceiling and, in so doing, consider the six factors indicated above. See Response to 45-Day Comment B-3.15 for an extended analysis of CARB's fulfillment of considering each of these six factors, and adopting a cost containment structure consistent with the AB 398 mandate.

CARB staff also notes that the SRIA for this rulemaking analyzed alternative specifications for the price ceiling, how the price ceiling relates to the existing Reserve as well as the new Reserve tiers mandated by AB 398; how the price ceiling relates to the Auction Reserve Price; and how the adopted amendments would enable CARB to ensure that the state's 2030 emissions reduction goals are met. CARB notes that changes to the auction reserve price are outside the scope of this rulemaking.

In addition, there is no model that staff is aware of to allow for different allowance price modeling on individual sectors. The premise and design of a cap-and-trade program is to allow for the discovery of the lowest-cost emissions reductions opportunities across the economy, regardless of sector. The Program covers approximately 80 percent of the state's emissions and there is no abatement curve by sector or facility to support such an analysis. In the development of the 2017 Scoping Plan, staff made assumptions about the ability of the Program to achieve reductions at several allowance price points and received no stakeholder

comments that disagreed with those assumptions. The subsequent uncertainty analysis used those same assumptions and demonstrated that a mix of complementary policies with a cap-and-trade program had the highest certainty of achieving the 2030 target at the lowest cost. All of the assumptions and analyses for this effort in the development of the 2017 Scoping Plan were made available for public review and comment.

Monitoring progress towards the SB 32 target

Several commenters raised concerns on monitoring progress toward the SB 32 target. Some raised this concern in terms of assessing Cap-and-Trade Program transparency, which is addressed above and the same response applies to comments on monitoring progress. In addition, in adopting the amendments, Board Resolution 18-51 directs staff to continue monitoring allowance supply, and to quantify and report to the Board, by no later than December 31, 2021, the volume of unused allowances from 2013 to 2020, including volumes held in private accounts, and the potential for unused allowances to hinder the ability of the Program to help achieve the SB 32 target. The Board further directed that CARB staff will hold a workshop in 2019 to discuss potential methodologies to evaluate this topic. When this report is concluded, staff will be able to provide the actual number of unused allowances carried forward to the post-2020 Program, which would also make any third-party forecasts of “oversupply” moot.

In addition, as staff noted in Appendix D to the ISOR, if it appears statewide emissions are not declining as needed to meet the 2030 goals, recognizing that year-to-year variability due to climate, global fuel prices, or economic factors can influence emissions, CARB staff will evaluate which sectors are not responding as anticipated, review all programs that cover those sectors, and ascertain why, as well as assess the best path forward to ensure California stays on track to meet its legislatively established GHG targets.

Looking beyond 2030

Finally, two commenters state that CARB should develop its regulations with an eye towards emissions goals beyond 2030 regardless of if the 2030 target is met. CARB agrees this is an important consideration: the 2020 and 2030 targets have not been set in isolation. They represent benchmarks, consistent with prevailing climate science, charting an appropriate trajectory forward that is in-line with California’s role in stabilizing global warming below dangerous thresholds. As we consider efforts to reduce emissions to meet the State’s near-term requirements, we will do so with an eye toward reductions needed beyond 2030, as well. The Paris Agreement – which calls for limiting global warming to well below 2 degrees Celsius and aiming to limit it below a 1.5 degrees Celsius increase – frames our path forward.

Developing and successfully implementing climate mitigation programs that reduce emissions while supporting a growing economy that can be replicable in other jurisdictions is critical if global GHG emissions are to decline. The 2017 Scoping Plan and subsequent design of the policies in the plan serve to achieve our GHG reduction targets and provide policies for others to consider and implement.

Prioritizing CO2-Emitting Technologies

B-1.4. Comment:

Though the first C&T priority must be for CARB to reduce emissions caps, we also urge state lawmakers to add *additional restrictions* to this program. The changes made to C&T in 2017 (bill AB 398) were disappointing, not only because of weak procedures for choosing caps, but because the bill did not address significant pathologies in California C&T.

We [I –HERNANDEZ] urge the state legislature to address the following two flaws. First, the goal of any carbon dioxide emissions program must be to eliminate all emissions as quickly as possible, not to simply reduce it by 20 or 30 percent. Unlike sulfates and particulates from coal plants, additional carbon dioxide stays in the atmosphere for millennia. [Therefore – WEBER, HERNANDEZ] Humanity soon needs to see virtually zero emissions, meaning that the only viable strategy is to use price signals to put pressure on CO2-emitting *technology*. [We demand that the – CLIMATEREALITY, WEBER] C&T program be *limited* to trading credits between technologies that actually emit GHGs—industry, electricity, transportation, and buildings. This would cause emitters to make improvements to technology that reduce emissions, whereas the current program does not...

We request that... the state legislature creates new C&T laws to address the severe inadequacies enumerated above. This is about more than just emissions from the Golden State itself—the rest of the world relies on us to set a new gold standard for climate policies, which we can begin to do by fixing the serious flaws in current policy. (CLIMATEREALITY, WEBER, HERNANDEZ)

Response: The commenters appear to be seeking modifications in statute to change the existing statutory GHG emission reduction targets, and to completely remove the offset credit provisions of the Regulation. A discussion of emissions targets is beyond the scope of this rulemaking, and would be better addressed to the Legislature. With respect to the trading rules related to covered sectors and offset credits, AB 32 and AB 398 all specify the statutory requirements that the Cap-and-Trade Program must follow, and the Program has been designed to meet these requirements, including on the amendments to further limit the usage of offset credits. As such, that portion of the comments is also outside the scope of this rulemaking. See Response to 45-Day Comment B-1.2 for a discussion of the level of reductions achieved by the adopted Scoping Plan's measures in

response to SB 32's 2030 target, and how this target relates to the reductions discussed in the IPCC's report. See Responses to 45-Day Comments B-2.9, B-3.14, and B-3.15 for a discussion of how offsets provide real emissions reductions, and provide important cost containment for the Program.

Availability of DEBS Offsets

B-1.5. Comment:

Finally, the new restrictions on offsets to require that half produce direct environmental benefits in state will restrict the number of offset projects that are eligible for compliance. The subcommittee is interested in knowing what efforts CARB, and/or the Compliance Offsets Protocol Task Force established pursuant to AB 398, are undertaking to increase the supply of offset credits that will meet the DEB requirements.

Additionally, the subcommittee thinks it would be beneficial for CARB to analyze the degree to which DEB-compliant offsets are likely to be available in the post-2020 period and whether such offsets will provide cost-containment. One commenter (Dentons) notes that the supply of credits under existing protocols may increase if allowance prices rise; we would encourage CARB to consider whether and how rising allowance prices might affect the supply of offset credits in such an analysis...

E. Longer term recommendations...

4) Finally, we recommend that CARB either conduct or solicit research to determine how many offsets are likely to be DEB-compliant in the post-2020 period and whether offset credits are likely to provide cost containment in the cap-and-trade program. (IEMAC)

Response: The comment seeks an analysis of offset supply with respect to the AB 398 direct environmental benefits in the state (DEBS) requirements. Since the comment does not propose changes to the amendments, it is outside the scope of the amendments. However, CARB staff agrees that if allowance prices rise then offset prices would as well. CARB staff also notes that it is not possible at this time to conduct an assessment of which offset projects will ultimately qualify for DEBS, especially as CARB staff does not know which offset projects may be submitted in the future. The SRIA (Appendix C to the ISOR) prepared for this rulemaking does include an assessment of the potential impacts to offset supply the new DEBS and post-2020 offset usage limit criteria may produce. Specifically, if the DEBS criteria cause a supply restriction, an even greater amount of entities' obligations would need to be made up of allowances, which would further increase the overall cost of compliance, and costs to consumers, as described in the SRIA.

Cost-effectiveness Required

B-1.6. Comment:

The Visible Hand - Manipulating Prices

CCEEB disagrees with stakeholders who are proposing to constrain the market through major manipulation of the liquidity and flexibility provided by a market-based mechanism. Artificially constraining the market to drive the market price toward the ceiling price is counter to the cost- effectiveness and cost-containing purposes of mitigating emissions through the codification of the Cap-and-Trade Program. These stakeholders are arguing to adopt a highly restricted market, through removal of unsold allowances, cap adjustments, and changes to banking or holding limits that will drive prices to a predictable ceiling tax, very similar to legislation that was introduced and not advanced in favor of a more cost-effective and more widely accepted Cap- and-Trade Program. The California legislature did not approve with a 2/3rds vote a narrowly priced cap-and-tax that these proposals propose. Those ideas did not have the support to receive a committee hearing. Those who fought to end the Cap-and-Trade program do not have the same interest in the success of the program as those who have compliance obligations and economic vitality of the State in mind.

A balanced regulation from the ARB should not incorporate or seek to balance ideas that were rejected by the legislature and not congruent with a successful Cap-and-Trade. High prices, manipulated supply, and a constrained market do not ensure the success of California's climate change programs.

Conclusion

In closing, CCEEB appreciates the opportunity to comment. We believe there is a great opportunity for California to lead global efforts on climate change with a thoughtfully designed Cap-and-Trade as the centerpiece of the State's climate change programs. An efficient and cost- effective program will deliver emission reductions at a cost that is tenable for the public without creating undue political pressure on the State's other funding priorities outside of climate change. California cannot afford to remove safeguards that were tightly negotiated by the Legislature and industry to appease stakeholders that opposed the marque super-majority approved legislation that explicitly chose Cap-and-Trade over other policy options. (CCEEB)

Response: The commenter is not proposing specific changes to the amendments of the rulemaking, but is rather critiquing some of the suggestions from other commenters that formed the basis of draft legislation. As such, the comment is not seeking changes to this rulemaking, and no further response is required. Notwithstanding, CARB staff agrees with the commenter that changes which would artificially tighten the program, such as retiring or discounting allowances, modifying banking rules, or altering the cap, are not warranted, and that CARB should not change the Program at this time to deliberately increase

market prices, especially when the state’s GHG emissions continue to decline. Such actions would conflict with AB 398’s directives to consider the potential adverse economic impact of changes on the state’s economy, costs to consumers, and leakage. CARB considered the need for changes to banking and other rules to deal with potential overallocation, as directed by AB 398. Appendix D of the Staff Report provides a summary of this analysis. See Responses to 45-Day Comments B-1.3, B-2.1, and B-2.7 for additional discussions of this analysis.

Environmental Justice Concerns

B-1.7. Comment:

CEJA previously submitted a comment letter dated March 21, 2018 regarding the first version of the Preliminary Discussion Draft, and we have attached it here for reference [included]. As we outlined in that letter, we have a number of concerns about the proposed structure of CARB’s cap and trade program and its ability to result in the significant greenhouse gas reductions that it is projected to provide in the Scoping Plan. These concerns have not been meaningfully addressed by the most recent version of the Proposed Amendments. In light of the most recent IPCC report, the need for action is more urgent than ever. This comment letter calls attention to the following points: (1) why greenhouse gas reductions are of critical importance to environmental justice and disadvantaged communities, as laid out in statute and highlighted by a July 10, 2018 peer- reviewed research paper...

(1) Ensuring actual greenhouse gas reductions is critically important to environmental justice and disadvantaged communities.

CEJA member and partner organizations are deeply rooted in and work closely with low-income communities and communities of color in some of the most disadvantaged areas of the state, as identified by CalEnviroScreen. Our communities are already experiencing negative impacts from climate change and will continue to. As stated in SB 32, “disadvantaged communities are affected first, and most frequently by the adverse impacts of climate change.”²⁶ At the same time, our communities have relatively less resources to adapt and still bear the impacts of long histories of disinvestment, marginalization, exclusion, and neglect. Achieving real greenhouse gas reductions and mitigating climate change and its impacts in our communities and our state is of critical importance to us.

Recent research highlights and supports this. The July 20, 2018 article entitled: “Carbon trading, co-pollutants, and environmental equity: Evidence from California’s cap and trade program (2011-2015)” written by Lara Cushing, Dan Blaustein-Rejto, Madeline Wanter, Manual Pastor, James Sadd, Allen Zhu, and Rachel Morello-Frosch discusses

²⁶ SB 32, Section 1(c)(2016).

the importance of real greenhouse gas reductions for the state’s most disadvantaged communities.²⁷ [The article is included in the original comment letter, available in the comment log for Cap and Trade 2018 at <https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=ct2018>.] This peer-reviewed journal article builds upon research we have previously highlighted and makes the following key findings:

- Facilities regulated under California’s cap and trade program are disproportionately located in disadvantaged neighborhoods.²⁸
- Most regulated facilities increased their local greenhouse gas emissions after implementation of cap and trade. A majority of facilities also increased their annual average PM2.5, VOC, and air toxics emissions during this time period.²⁹
- Greenhouse gases and hazardous co-pollutants emitted by facilities regulated under California’s cap and trade program were positively correlated when comparing across facilities.³⁰
- Since California’s cap and trade program began, neighborhoods that experienced increases in annual average greenhouse gas and co-pollutant emissions from regulated facilities nearby had higher proportions of people of color and poor, less educated, and linguistically isolated residents, compared to neighborhoods that experienced decreases in greenhouse gases.³¹

As highlighted in this study, low-income communities and communities of color are disproportionately located near the state’s largest greenhouse gas sources. Thus, our state’s ability to curb greenhouse gases and slow climate change has a direct impact on the state’s disadvantaged communities. Sources need to actually reduce greenhouse gases to mitigate these impacts and ensure that cap and trade does not disproportionately hurt the state’s most disadvantaged communities.

Importantly, AB 398 requires CARB to “[e]nsure that activities undertaken to comply with the regulations do not disproportionately impact low-income communities.”³² SB 32 further requires CARB to “achieve the state’s most stringent greenhouse gas reductions in a manner that benefits the state’s most disadvantaged communities.”³³ To meet these requirements, CEJA has and continues to recommend the following key ways to strengthen the effectiveness of the cap and trade program...

²⁷ <http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1002604>

²⁸ Id.

²⁹ Id.

³⁰ Id.

³¹ Id.

³² Cal Health & Safety Code § 38562(b)(2).

³³ Senate Bill 32, Section 1(d) (2016).

Whether California achieves our greenhouse gas emission reduction requirements in actual terms is a critical issue for the state's most disadvantaged communities. Environmental justice communities are on the frontlines of climate change.³⁴ Low-income communities and communities of color are disproportionately located near the state's largest sources of greenhouse gas emissions (GHG), including both industrial facilities and major transportation corridors,³⁵ as well as oil and gas infrastructure.³⁶ The communities where CEJA's members and partners work are already facing the impacts of climate change, from suffering most acutely during extreme weather events to bearing the burden of drought or exacerbated air quality impacts. Minimizing further climate change is critical to the long-term health and well-being of low-income communities and communities of color across the state.

Additionally, there are ongoing concerns that as designed, California's cap and trade program will have disproportionate impacts on environmental justice communities. If sources are not reducing their actual emissions because of cap and trade design features such as an oversupply of allowances, allowance banking, and offsets, it directly impacts disadvantaged communities – both in terms of localized GHG and co-pollutant emissions, and our state's overall ability to aggressively curb GHG's and thus slow climate change.

Recent data underscores the need for continued analysis and action on these EJ concerns. The 2016 Cushing et. al Report highlighted preliminary findings that showed emission increases in certain sectors under the cap and trade program.³⁷ The 2016 cap and trade compliance data also showed similar patterns: certain sectors, such as refineries, have actually increased emissions.³⁸

While CARB is relying heavily on implementation of AB 617 to address air quality issues in EJ communities, it still has a clear statutory authority to analyze EJ impacts within the cap and trade program and take corrective actions if disproportionate impacts continue to be documented. AB 398 requires CARB to “[e]nsure that activities undertaken to comply with the regulations do not disproportionately impact low-income communities.”³⁹ SB 32 further requires CARB to “achieve the state's most stringent

³⁴ See SB 32, Section 1(c) (2016) (describing how disadvantaged communities “are affected first, and, most frequently, by the adverse impacts of climate change”).

³⁵ See L. Cushing, et. al, A Preliminary Environmental Equity Assessment of California's Cap-and-Trade Program, pg. 2, 4, 5.

³⁶ See generally id.

³⁷ L. Cushing, et. al, A Preliminary Environmental Equity Assessment of California's Cap-and-Trade Program (2016).

³⁸ https://calmatters.org/articles/californias-emissions-dip-climate-policies-get-less-credit-weather/?utm_source=CALmatters+Newsletter&utm_campaign=fdcb7a06db-RSS_WEELKY_SUB_EMAIL&utm_medium=email&utm_term=0_faa7be558d-fdcb7a06db-150198313

³⁹ Cal. Health & Safety Code § 38562(b)(2). This provision is not limited to economic impacts, which CARB analyzes in Appendix E. As written, it includes all potential impacts including environmental impacts.

greenhouse gas reductions in a manner that benefits the state's most disadvantaged communities."⁴⁰ (CEJA)

Response: See Responses to 45-Day Comments B-1.3 and B-3.12 for a discussion of modeling conducted in support of the adopted regulation. See Response to 45-Day Comment B-1.3 for how the use of the Cap-and-Trade Program in keeping with AB 197's requirements. Also see Response to 45-Day Comment B-2.1 for staff's position that the Cap-and-Trade market is not in a state of oversupply.

In addition, with respect to the commenter's concerns that the Cap-and-Trade Program will lead to adverse air quality impacts in disadvantaged communities, CARB staff points to Master Response 1: Response to Comments Raising Environmental Justice Concerns, from the Response to Comments on the Draft Environmental Analysis for the Proposed Amendments to the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation And California's Compliance Plan for the Federal Clean Power Plan (July 17, 2017),⁴¹ at pages 2-10 through 2-23. That response is summarized below, and is hereby incorporated by reference.

As noted in the ISOR for this rulemaking (pp. 177-179), as designed, the Regulation will ensure GHG emission reductions occur within California that may also reduce criteria pollutants and toxic air contaminants. Sources covered by the Regulation include natural gas and fuel suppliers, large stationary sources, and electricity importers. Several features of the post-2020 Program and adopted amendments address concerns raised by environmental justice advocates:

- The steeper cap decline from 2021 through 2030 means that the adopted Regulation will result in direct emissions reductions at covered entities, including large stationary sources and other GHG emission sources, with potential co-benefits of reductions in criteria pollutants and toxic air contaminants
- The quantitative offset usage limit is reduced from 8 percent to 4 percent in 2021 through 2025, and then 6 percent thereafter
- The requirement that half of the quantitative offset usage limit apply to offsets that do not provide direct environmental benefits may also result in co-benefits within the state, and
- The removal of the exemption for waste-to-energy facilities is consistent with recommendations from some environmental justice stakeholders.

As a result of the efforts on addressing air quality, actions of CARB, local air districts, and federal air pollution control programs have made substantial

⁴⁰ Senate Bill 32, Section 1(d) (Pavley, 2016).

⁴¹ <https://www.arb.ca.gov/cc/powerplants/meetings/07272017/rtc-cpp.pdf>

progress towards improving the air quality in California. However, some communities, largely low-income and composed of people of color, continue to experience higher exposures than others because of the cumulative impacts of air pollution from multiple sources located in these communities. It is important to note that the Cap-and-Trade Program is just one of many programs that address air emissions in California, and CARB is just one of several organizations responsible for administering these policies. Following are examples of additional efforts in the State to reduce air emissions, as led by CARB and other organizations.

To date, at least half of the monies collected from the sale of Cap-and-Trade Program allowances at the quarterly auctions have been allocated for programs that benefit disadvantaged communities. These investments yield GHG and air pollutant co-benefits. The list below includes some of the programs being funded by the Cap-and-Trade Program auction monies that are benefitting disadvantaged communities:

- Low-Income Weatherization Program/Renewable Energy
- Urban forestry
- Zero and near-zero emission passenger vehicle rebates
- Heavy duty hybrid/ZEV trucks and buses
- Pilot programs (car sharing financing, etc.) in disadvantaged communities
- Intermodal affordable housing
- Transit-oriented development

Additionally, AB 617 (Chapter 136, Statutes of 2017) directs and authorizes CARB to take several actions to improve data reporting from facilities, air quality monitoring, and pollution reduction planning for communities affected by a high cumulative exposure burden. With regard to reporting, it requires CARB to develop a uniform statewide annual reporting system of criteria pollutants and toxic air contaminants for certain categories of stationary sources. As for monitoring, it required CARB to prepare a monitoring plan by October 1, 2018 to identify the highest priority locations around the state to deploy community air monitoring systems. By July 1, 2019, any district containing a high priority location would need to deploy a community air monitoring system for that location or locations. The districts would also have authority to require nearby facilities to deploy a fence-line monitoring system under certain conditions. These efforts will help better understand the complex emissions interrelations between the Cap-and-Trade Program and air district criteria and toxics programs.

Finally, with regard to planning, AB 617 also requires CARB to prepare, in consultation with numerous stakeholders (including environmental justice organizations), a statewide strategy to reduce emissions of toxic air contaminants and criteria air pollutants in communities affected by a high cumulative exposure burden. This strategy was required to be prepared by October 1, 2018. The Board approved AB 617 program requirements and community selection at the September 2018 Board hearing.

Other Policy Tools

B-1.8. Comment:

Complementary Sector-Specific Policies

As CARB further develops market rules for the 2021 – 2030 cap and trade program it must consider how this program will interact with sector-specific policies to meet the emission reduction target mandated in SB 32. In addition to managing the supply of allowances by setting the price ceiling and speed bumps at appropriate levels and adjusting banking rules to avoid speculative behavior, CARB should reduce demand for allowances by strengthening its other emission reduction policies.

i. Transportation

Targeted policies will be particularly important to reduce emissions from mobile sources, which emit 40 percent of California's greenhouse gases and are likely to be less responsive to the price signal from the cap and trade program than other sectors. Fortunately, CARB has a variety of other tools it can use to reduce mobile source emissions by improving vehicles, transportation fuels, and the transportation system to support California's vibrant economy in a progressively cleaner and more sustainable fashion.

California must transition to 100% clean vehicles as soon as possible to meet its climate and clean air goals. CARB must update its mobile source strategy for light duty vehicles to ensure that 5 million Zero Emission Vehicles (ZEVs) are on the road by 2030, as called for by Executive Order B-48-18. To accomplish this CARB should strengthen its Zero Emissions Vehicle mandate and develop 2026-2030 tailpipe greenhouse gas emissions standards that set a course to 100% clean new cars by no later than 2040. To jumpstart the transformation of California's new car market, CARB should enhance the effectiveness of its clean vehicle rebate program by establishing a rebate schedule that is high enough in the near term to make ZEVs price competitive with internal combustion engine vehicles, with rebate levels declining in steps as a function of cumulative sales. CARB should also work with the Franchise Tax Board to establish a system for instant eligibility verification to enable true point-of-sale rebates. For the medium- and heavy-duty sector CARB should adopt the Innovative Clean Transit Regulation and continue to focus incentives on true zero emission vehicles whenever they are available for a given duty cycle.

The Low Carbon Fuels Standard (LCFS) is an essential tool for expanding the clean transportation fuels market in parallel with improving the vehicles which use these fuels. The LCFS has reduced emissions by over 30 million metric tons of carbon dioxide equivalent since its inception in 2011 by incentivizing transportation fuel producers to bring to market cleaner alternatives to petroleum like biodiesel, renewable diesel, ethanol, renewable natural gas and electricity. CARB's draft plan to extend the program calls for the carbon intensity reduction target to rise from 8% in 2020 to 20% by 2030. This is a very conservative goal and NextGen will be providing detailed comments to the LCFS rulemaking showing that there will be enough low-carbon fuel available to set a higher target, which will reduce emissions by millions of tons per year.

We can also get smarter and more equitable in the way we think about transportation in the first place. California's Sustainable Communities and Climate Protection Act (aka, SB 375, passed in 2008) requires city transportation planners to improve access to transit, change zoning to bring people closer to jobs and services, and encourage more walking and biking.

SB 375 sets a good goal, but more is needed to achieve it. California should invest more in programs like Transformative Climate Communities, which creates a pool of funding from cap and trade that neighborhoods can use to help make walking, biking, carsharing, and transit the best transportation option for people in their communities. Neighborhoods can begin to guide their own process of transforming their mobility by adopting innovative solutions, while serving as living laboratories for novel ideas.

ii. Buildings

Homes and commercial buildings (restaurants, hospitals, stores, offices, etc.) were responsible for 11 percent of California's heat-trapping pollution in 2015, as much as emissions from in-state electricity generation.

Besides improving our buildings' ability to keep warm with less fuels through strong efficiency standards, we need to begin replacing fossil natural gas in buildings with electricity and renewable gas.

CARB and California's energy regulators have taken some initial steps to recognize the benefits of building electrification and have the opportunity to do more in 2018. To the extent that buildings continue to use gas it is also possible to reduce emissions by replacing some fossil natural gas with renewable natural gas (RNG). For example, biogas captured from landfills, dairy digesters, and waste treatment plants can be purified to produce pipeline quality gas and injected into the existing gas distribution system. This strategy should not be considered a substitute for building electrification because using RNG does not eliminate methane leaks and RNG supplies are limited.

iii. Oil Supply

When it adopted the 2030 Scoping Plan, CARB also resolved to "continue to evaluate and explore opportunities to achieve significant cuts in greenhouse gas emissions from

all sources, including supply-side opportunities to reduce production of energy sources.” A recent report from the Stockholm Environment Institute (SEI) shows that there are indeed significant opportunities to reduce emissions by aligning California’s oil supply policies with its policies to reduce demand for petroleum products.⁴² Indeed, failure to do so would lead to significant leakage of the emission reduction benefits from California’s clean cars and low carbon fuels policies as the petroleum demand reductions produced by these policies are partially offset by increased oil demand outside of California. SEI’s analysis also indicates that the cost of emission reductions driven by phasing down oil production in California are comparable to the cost of other policies included in the Scoping Plan.

CARB should evaluate available regulatory pathways to begin bringing fossil fuel production in California into line with the decline in consumption (relative to a BAU baseline) we are currently achieving, and prepare for the significant declines in consumption that will and must occur if we are to achieve our 2030 and 2050 pollution reduction targets.

iv. CARB Should Continue to Develop New Pathways

As our understanding of climate change increases, so does the need to address a broader spectrum of both causes and effects. CARB must proactively expand the portfolio of tools at its disposal, to continue to drive down emissions in an efficient manner while addressing critical economic, equity, and environmental goals. Expanding the set of tools at our disposal will be essential to our long term success. Accordingly, CARB should commit significant resources to develop new methods of leveraging the power of the Cap and Trade market to address a variety of critical challenges. Developing methods to quantify the GHG benefit from forest management practices which reduce wildfire risk and valorizing that through the Cap and Trade market would help bring resources into this desperately needed area. Developing a carbon capture and sequestration protocol eligible to generate credits or offset emissions would help drive that critical climate-protective technology forward. Another possible opportunity to drive further emissions reductions would be to use the Cap and Trade market to value fossil fuel supply limitation measures. (NEXTGEN)

Response: The commenter encourages CARB to work to balance Cap-and-Trade with sector-specific policies. CARB works to maintain a balance between the role of the Cap-and-Trade Program and other Scoping Plan measures, and will evaluate and consider additional measures that are cost-effective and technologically feasible. The commenter also suggests using other methods to leverage the Cap-and-Trade Program. These suggestions refer to aspects of the Program that were not noticed for amendments as part of this rulemaking and as such are outside the scope of this rulemaking. See Response to 45-Day

⁴² https://www.sei-international.org/mediamanager/documents/Publications/SEI_2018-DB-California_oil.pdf

Comments B-1.3 for further detail on how the 2017 Scoping Plan contemplates a suite of measures to ensure the state achieves its emissions targets and meets other statutory mandates. See Response to 45-Day Comments B-1.3 and B-2.1 for how the 2017 Scoping Plan with Cap-and-Trade is expected to help the State successfully achieve the 2030 climate goals in a cost-effective and technologically feasible manner.

Potential New Rulemaking and 2017 Scoping Plan

B-1.9. Comment:

We respectfully urge the Board to consider tightening the market design in the current proposal, which cannot reasonably be said to deliver on the role ARB identified for this program in last year's Scoping Plan. If the Board is unwilling or unable to do so, however, we request the Board to (1) call for a future rulemaking to address allowance overallocation, and (2) begin a process for revising the Scoping Plan to reflect the actual market design adopted in the current process. (NEARZERO)

Comment:

Finally, we do ask that the Board require staff to take a close look and propose regulatory changes that may be needed, if it turns out that either because of oversupply or other elements of the market design, cap and trade is not performing at the levels required of it and envision in the scoping plan. So we think that that would be a good -- a good proposal for subsequent regulation. (NEXTGEN2)

Response: CARB disagrees with the commenters that the adopted amendments do not deliver on the role of the Cap-and-Trade Program as outlined in the 2017 Scoping Plan or in AB 398. See Response to 45-Day Comments B-1.3 and B-2.1, that detail the modelling conducted to support the adopted Regulation, and discuss Appendix D to the ISOR. As noted in Appendix D, at this time, staff is not proposing to change existing banking rules, remove unused allowances, or change post-2020 annual caps as part of this rulemaking. See also Response to 45-Day Comments B-1.3 for a discussion of Board Resolution 18-51, that directs staff to quantify the pre-2021 allowance supply that may be carried into the post-2020 Program.

Requests for a future rulemaking and Scoping Plan revisions are outside the scope of this rulemaking.

Maintaining Auction Reserve Price

B-1.10. Comment:

1. Reasonable Floor Prices for a Stable and Exportable Cap-and-Trade Program

In October 2018, the United Nations Intergovernmental Panel on Climate Change (IPCC) released a Special Report⁴³ on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas (GHG) emission pathways, with an eye toward strengthening global efforts to combat climate change.⁴⁴ The findings of this report have spurred new pressure to increase pricing in the Cap-and-Trade program under the theory that price increases would incentivize additional emissions reductions from compliance entities. While this could work for the state, California's contribution to GHG emissions is relatively low; approximately 1% of all global GHG emissions come from California. Even if the state were to cut its emissions in half, the impact on global warming and global climate change would still be negligible.

The path to meaningful global reductions in GHG emissions is exporting the Cap-and-Trade Program to other jurisdictions. Thus, the program needs to be attractive to other governments and stakeholders, which can be accomplished by ensuring a stable and sustainable program by maintaining a reasonable Cap-and-Trade auction floor price. Drastic increases in the price of Cap-and-Trade allowances due to an unreasonable, elevated floor price would have destabilizing political and economic effects on the Program, including market uncertainty and economic leakage. Maintaining the annual price floor, with an increase of 5% plus the consumer price index (CPI), is a stable and sustainable strategy that will support the long-term viability and exportability to other markets of the California Cap-and-Trade Program. (SDG&E)

Response: The commenter discusses maintaining the current auction reserve price structure of the Cap-and-Trade Regulation. This provision was not opened for changes as part of this rulemaking and staff is not proposing any changes to the Auction Reserve Price (ARP). As such, the comment is outside the scope of the rulemaking. The rest of the comment provides additional context for the design of the Program that addresses the comment's concerns.

In setting the ARP, staff added an escalator mechanism to ensure that the Program continued to support both direct reductions and the production of offset credits. As noted in the 2010 ISOR (IX-71),⁴⁵ staff proposes an inflator

⁴³ United National Intergovernmental Panel on Climate Change. Special Report – Global Warming of 1.5°C. 8 October 2018: <http://www.ipcc.ch/report/sr15/>

⁴⁴ The report details the environmental and human benefits of keeping global warming to 1.5°C, versus exceeding 1.5°C and then gradually stabilizing at 1.5°C, especially if the peak is high (e.g., 2°C). The modeled differences in regional climate characteristics between the current level of global warming and 1.5°C, and between 1.5°C and 2°C, are robust, including increases in mean land and ocean temperatures, hot extremes, heavy precipitation in some regions, and drought in others. These changes will impact biodiversity, ecosystems, sea level rise, human health and security, food security, water supply, and economic growth. Adaption is also expected to be more challenging for some human and environmental systems at 2°C of warming than at 1.5°C. Global net anthropogenic emissions of CO₂ would need to decline roughly 45% below 2010 levels by 2030, and reach “net zero” emissions around 2050, to limit global warming to 1.5°C. Any remaining emissions would have to be balanced by removing CO₂ from the air. According to the report, current nationally-stated mitigation commitments under the Paris climate agreement are not sufficient to limit global warming to 1.5°C.

⁴⁵ <https://www.arb.ca.gov/regact/2010/capandtrade10/capisor.pdf>

mechanism based on the expectation that marginal abatement costs and offset project costs will increase over time as lower cost-abatement measures are undertaken first, and due to inflation. Auction reserve prices would need to increase to reflect the increased marginal abatement cost and the inflation rate; otherwise, the reserve price would no longer support direct reductions and offset projects as intended.

From the outset, staff acknowledged the importance of a common ARP in establishing linked programs with other jurisdictions. Again from the 2010 ISOR (II-37), the auction reserve price is one of the components of a linked regional market program for which consistency across the individual programs is especially important. For this reason, CARB staff will work closely to evaluate this issue with other linked jurisdictions while evaluating their programs for possible linkage.

Auction Reserve Price Too Low to Support Offset Projects

B-1.11. Comment:

Offset prices are linked to allowance prices in that they trade at a slight discount to the allowance price. However, the cost of high-quality offset prices (especially anaerobic digestors) is generally higher than the current price of allowances and is limiting the number of projects being developed in other protocols. If the price of allowances continues to trade at the auction price floor, the forward price curve still does not provide the appropriate price incentive for offset projects (see comments on overallocation report). (DENTONS)

Response: The comment asserts that if allowance prices remain close to the Auction Reserve Price (ARP) then prices would be too low to incent investment in offset projects. Staff disagrees with the comment. While prices have historically been near the ARP, this has not prevented the operation of a significant number of offset projects. To date, CARB has issued over 143 million compliance offset credits.⁴⁶ For the second full compliance period, which ran from 2015 through 2017, California compliance entities surrendered just over 62.7 million offsets, equal to 6.36% of their combined compliance obligations. The primary role of the Program is to result in cost-effective reductions in the covered sectors. The offset program is a limited opportunity for the Program to help fund reductions in non-covered sectors and support cost containment in the overall Program.

See Response to 45-Day Comment B-1.3 for how design features of the Cap-and-Trade Program will support a smooth increase in the carbon price signal, including the escalation of the Auction Reserve Price itself, that may incent additional offset projects.

⁴⁶ Available at CARB offsets web page: <https://www.arb.ca.gov/cc/capandtrade/offsets/offsets.htm>

B-2. Emissions Caps and Program Stringency

Critique of Overallocation Analysis in Appendix D to ISOR

B-2.1. Comment:

Reflecting mounting concerns that California's program has too many allowances, AB 398 instructs ARB to "Evaluate and address concerns related to overallocation in the state board's determination of the number of available allowances for years 2021 to 2030, inclusive, as appropriate."⁴⁷ The Board's response to that instruction is factually and analytically deficient, as explained further below.

i. The Board's only analysis of allowance overallocation is based on a factual error that, once corrected, shows how excess allowances banked from the market period through 2020 will frustrate the program's ability to reduce greenhouse gas emissions in later years.

In April 2018, ARB staff released a report to address AB 398's instruction on allowance overallocation. The staff report purported to show that with a bank of up to 150M allowances at the end of 2020, the post-2020 cap-and-trade program would still achieve the cumulative emission reductions called for in the 2017 Scoping Plan.⁴⁸ These findings are incorporated into Appendix D to the Initial Statement of Reasons in the proposed regulation.⁴⁹

ARB's report is based on a factual mathematical error that Near Zero identified and a staff report from the Joint Legislative Committee on Climate Change Policies affirmed.⁵⁰ Once this error is corrected by the same method ARB employed in the original 2010 cap-and-trade regulation, ARB's analysis indicates the cap-and-trade program will fall well short of the greenhouse gas emission reductions called for in the 2017 Scoping Plan.⁵¹ In other words, a corrected analysis shows that the proposed program's instrument supplies won't sufficiently constrain emissions to deliver the necessary emission reductions.

Since then, ARB staff have offered a series of non-sequitur responses about the cap-setting process that do not respond to the error Near Zero identified. Even if taken as

⁴⁷ Cal. Health & Safety Code § 38562(c)(2)(D) (as added by AB 398)

⁴⁸ ARB, Supporting Material for Assessment of Post-2020 Caps (Apr. 2018).

⁴⁹ ARB, ISOR Appendix D: AB 398: Evaluation of Allowance Budgets 2021 through 2030 (Sept. 4, 2018) (hereinafter "ISOR Appendix D") at 7-11.

⁵⁰ Mason Inman et al., Ready, fire, aim: ARB's overallocation report misses its target. Near Zero Research Note (May 7, 2018); Joint Legislative Committee on Climate Change Policies, Informational Hearing: Cap-and-Trade, Background Document (May 24, 2018).

⁵¹ Inman et al., *supra* note 7.

true, ARB's responses do not establish that the program has been designed to achieve the emission reductions called for in the 2017 Scoping Plan.⁵²

It has now been over five months since Near Zero identified this fundamental factual error. Despite public discussion of this issue in the media,⁵³ at a legislative oversight hearing,⁵⁴ and in multiple comment letters in response to ARB workshops,⁵⁵ ARB's proposed regulations dismiss Near Zero's criticism without a substantive response:

In response to the initial staff analysis, one commenter stated there was an error in the CARB analysis. Staff evaluated the assertion and found that no error existed. The proposed adjustment by the commenter would have actually introduced an error.⁵⁶

Since Near Zero released our report identifying ARB's error in May, we have had dozens of conversations with program stakeholders, policymakers, and independent researchers. Not a single individual or organization has disputed our calculations. ARB's reaction is, we believe, a regrettable attempt to marginalize an accurate criticism by dismissing it.

Furthermore, we note that the Independent Emissions Market Advisory Committee (IEMAC)—on which one of us (Dr. Cullenward) serves—elected not to address this factual question in its subcommittee on Managing Allowance Supply.⁵⁷ If ARB is confident in the accuracy of its approach, then the Board should request that the IEMAC evaluate whether or not ARB made a factual error in its April 2018 staff report and in Appendix D to the Initial Statement of Reasons in this rulemaking.

ii. Even if ARB's analysis were not factually incorrect, empirical evidence and credible estimates suggest allowance banking will be much larger than ARB projects.

⁵² Letter from Dr. Danny Cullenward to Hon. Eduardo Garcia and Sen. Henry Stern (May 30, 2018), <https://www.ghgpolicy.org/s/2018-05-30-Cullenward-letter-to-JLCCCP.pdf>; Near Zero, comment letter to ARB (July 5, 2018), <https://www.arb.ca.gov/lists/com-attach/29-ct-6-21-18-wkshp-ws-WzUHZFc3ACEFXFlo.pdf>.

⁵³ See, e.g., Julie Cart, Checking the math on cap and trade, some experts say it's not adding up, CALmatters (May 22, 2018), <https://calmatters.org/articles/checking-the-math-on-cap-and-trade-some-experts-say-its-not-adding-up/>.

⁵⁴ Testimony of Dr. Danny Cullenward before the Joint Legislative Committee on Climate Change Policies (May 24, 2018), <https://www.ghgpolicy.org/s/2018-05-24-Cullenward-testimony.pdf>.

⁵⁵ Near Zero, comment letter to ARB (May 10, 2018), <https://www.arb.ca.gov/lists/com-attach/1200-ct-4-26-18-wkshp-ws-Uz1RMlw8BSQKU1Qu.pdf>; Near Zero, comment letter to ARB, *supra* note 9.

⁵⁶ ARB, ISOR Appendix D, *supra* note 6, at 10-11, footnote 11.

⁵⁷ IEMAC, 2018 Annual Report of the Independent Emissions Market Advisory Committee, Chapter 6: Managing Allowance Supply (Oct. 22, 2018) (hereinafter "2018 IEMAC Report"); *Id.* at Appendix A (Dr. Cullenward's dissenting statement) (noting that this subcommittee could not reach consensus on whether to evaluate the technical validity of ARB's calculations). The IEMAC subcommittees operate on a consensus basis, such that consensus between subcommittee members is a prerequisite for a subcommittee to address a given topic.

ARB's April 2018 analysis and Appendix D to the current ISOR both assume that no more than 150M allowances will be banked in private accounts at the end of 2020.⁵⁸ But multiple credible lines of evidence indicate that the likely amount of allowance banking over this period will be much larger than what ARB expects.

- **Empirical banking metric.** Near Zero has published a method for calculating the bank of compliance instruments held in private accounts, which we define as the total number of allowances and offset credits held beyond the number needed for compliance obligations that have been incurred, but not yet satisfied. In other words, the metric measures the excess instruments held beyond what is needed for program compliance through any given point in time. Our metric is based on public market data and indicates that at the end of 2017, the private bank was 108.1M (± 11.3 M) compliance instruments.⁵⁹

Furthermore, emissions under the program through 2016 have been consistently far lower than annual program caps. As a result, the private bank has grown and is likely to grow for years to come, until such time as either emissions rise to meet the cap or the cap falls to reach where covered emissions actually are. In the first three auctions in 2018, current vintages have sold out—despite offering not only more allowances from the 2018 budget than covered entities likely need for this year's obligations, but also an additional 44 million allowances that went unsold in the 2016-17 auction collapse.⁶⁰ This evidence strongly indicates that the 2018 bank is likely to be much larger than in 2017, unless a catastrophic auction failure occurs at the fourth quarterly auction in November 2018.

- **Legislative Analyst's Office projections.** The non-partisan Legislative Analyst's Office has published multiple studies on the question of allowance overallocation, including an estimate that ARB adjusted downward to make its official projection for the April 2018 staff report.⁶¹ At a recent IEMAC hearing, LAO's Dr. Ross Brown indicated that his office continues to project that the private bank of allowances is most likely to be in the range of 200M to 250M at the end of 2020—and that this projection takes into account methodological changes ARB proposed in its April 2018 staff report (which reduce the estimate),

⁵⁸ ARB, Post-2020 Caps Report, *supra* note 5; ARB, ISOR Appendix D, *supra* note 6.

⁵⁹ Mason Inman et al., Tracking banking in the Western Climate Initiative cap-and-trade program. Near Zero Research Note (Sept. 12, 2018). We intend to update our metric once ARB releases official data on 2017 emissions covered by the cap-and-trade program in November 2018.

⁶⁰ Mason Inman et al., California's "self-correcting" cap-and-trade auction mechanism does not eliminate market overallocation. Near Zero Research Note (May 23, 2018).

⁶¹ Legislative Analyst's Office, Letter to Hon. C. Garcia (June 16, 2017) (offering a central estimate of 200M allowances banked at the end of 2020).

as well as newer data showing that covered emissions remain far below annual program caps (which increase the estimate).⁶²

- **Energy Innovation’s projections.** Dr. Chris Busch from Energy Innovation LLC estimated that the private bank of allowances is likely to be 270M (±70M) at the end of 2020.⁶³
- **Environmental Commissioner of Ontario’s projections.** Finally, the independent Environmental Commissioner of Ontario has estimated that the private bank of allowances will be greater than 300M at the end of 2020.⁶⁴

The ARB and independent analyses listed above, as well as Near Zero’s banking metric, look only at allowance banking in private entities’ accounts. In addition to private allowance banking, though, there are also additional allowances held in program reserves (i.e., government-controlled accounts) that could later enter the market. ARB is also proposing, per AB 398, to transfer an additional 160.8M allowances from the market’s pre-2021 reserve accounts into the post-2020 reserve accounts.⁶⁵ If sold to private actors, these allowances would enable higher emissions and therefore would contribute to overallocation conditions. The lower the prices at which ARB makes these surplus allowances available for purchase, the greater the likely extent of allowance overallocation.⁶⁶

iii. Near Zero’s preliminary modeling results suggests that any reasonable scenario for emissions will produce banking in excess of 150M compliance instruments at the end of 2020.

Near Zero has developed an open-source model of supply and demand in the Western Climate Initiative (WCI) cap-and-trade program.⁶⁷ As we stressed in an October 11 webinar releasing the initial model, the purpose of our effort is to accurately represent the cap-and-trade regulations as they are proposed in California and as they currently exist in Quebec, as well as the program’s historical performance to date. The model takes as input from users three types of projections of the future: (1) covered emissions

⁶² September 2018 IEMAC meeting, morning session, timestamp 48:18,

<https://youtu.be/PGTeMUJUsiM?t=2898>; see also Legislative Analyst’s Office, Handout for the Joint Legislative Committee on Climate Change Policy hearing on Cap and Trade (May 24, 2018).

⁶³ Chris Busch, Oversupply grows in the Western Climate Initiative carbon market: An adjustment for current oversupply is needed to ensure the program will achieve its 2030 target. Energy Innovation LLC Report (Dec. 2017).

⁶⁴ Environmental Commissioner of Ontario, Ontario’s Climate Act: From Plan to Progress, Appendix G: Technical Aspects of Oversupply in the WCI Market (Jan. 30, 2018).

⁶⁵ ARB, ISOR, *supra* note 3 at 44 (Table 8).

⁶⁶ Because the reserve allowances will be made available at different price points, reflecting the level at which ARB establishes the two “price containment points” and “price ceiling” accounts pursuant to AB 398, their sale to private entities is contingent on market price outcomes.

⁶⁷ Mason Inman et al., An open-source model of supply and demand in the Western Climate Initiative cap-and-trade program. Near Zero Software (Oct. 10, 2018), available at <http://www.nearzero.org/wp/2018/10/10/an-open-source-model-of-supply-and-demand-in-the-western-climate-initiative-cap-and-trade-program/>.

subject to the program, (2) outcomes of quarterly allowance auctions, and (3) the supply of offset credits. Critically, it does not assume what emissions will be, but rather allows users to explore the supply and demand implications of scenarios of their choosing.

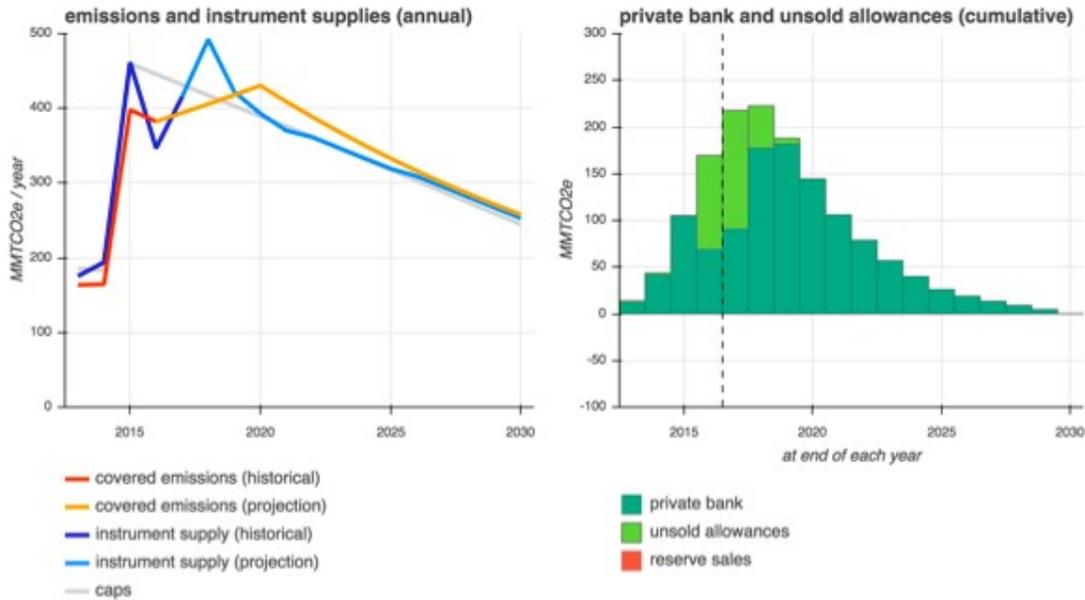
We have been collecting feedback from model users and program stakeholders but have not yet received any input from ARB. We very much welcome ARB's feedback because it is essential to us to ensure that the model accurately depicts market rules. Given that the model is new and not all key stakeholders have offered their comments, we emphasize that the results shown here should be taken as preliminary. Nevertheless, because we have conducted extensive review of the program regulations and have been able to accurately reproduce historical market outcomes with our model, we believe that our projections offer some additional evidence to explore the question of whether or not the supply-demand balance is set appropriately in the current regulatory proposal.

Our model of the WCI program suggests that it would take very specific assumptions to produce a private bank of only 150M allowances along with a post-2020 program cap budget that is cumulatively binding on post-2020 emissions.⁶⁸ For example, if California's and Quebec's covered emissions increased 3% per year each year from 2017 through 2020, but then decreased 5% per year through 2030, the model shows that the private bank would peak at close to 180M compliance instruments in 2019 and fall to just under 150M at the end of 2020 (see Figure 1), consistent with ARB's assertions.

Due to the rapidly falling emissions trajectory assumed thereafter, the private bank would be used up and program caps would be binding by 2030, without requiring sales from reserve accounts.

Figure 1: WCI cap-and-trade banking of 150M instruments in 2020

⁶⁸ Both of the scenarios discussed here use the model's default settings for offsets supplies and auction outcomes. Under these settings, offsets supplies are equal to the projections ARB makes in its projections in the current rulemaking. ARB, Post-2020 Caps Report, *supra* note 5. The auctions are assumed to sell all available allowances.

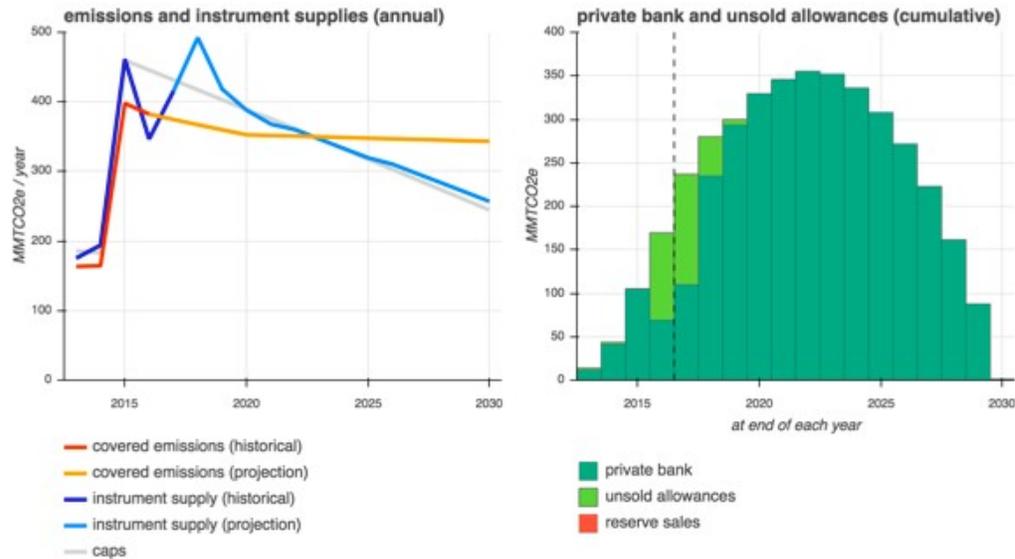


While these assumptions would make it possible to reach ARB’s low estimate for allowance banking at the end of 2020 and also result in program caps that are binding through 2030, they are not particularly plausible in our view. Such an emissions trajectory would be a reversal in California’s climate progress, but ARB has not indicated such a reversal is likely. In addition, this scenario would require an increase in covered emissions through 2020 that would likely cause California’s total statewide emissions to exceed the state’s 2020 limit mandated by AB 32.

To give a sense of how alternative assumptions can generate larger allowance banks at the end of 2020 that interfere with the ability of the program to limit emissions in line with 2030 goals, we consider a second scenario. Here, California’s and Quebec’s emissions are assumed to fall at 2% per year through 2020, consistent with the 2017 Scoping Plan Scenario⁶⁹, but then are held constant at 2020 levels through 2030. In this relatively pessimistic post-2020 scenario, the program caps are likewise binding through 2030 on a cumulative basis, even though annual 2030 emissions greatly exceed program caps (see Figure 2). The bank of compliance instruments at the end of 2020 is about 325M, much larger than ARB’s worst-case scenario of 150M. Given the overshoot of covered emissions above program caps through 2030, it is unlikely that this scenario is consistent with California’s total emissions declining enough to be below the 2030 limit.

⁶⁹ The 2017 Scoping Plan Scenario, which represents the effects on California emissions of prescriptive measures (but not the WCI cap-and-trade program), has “covered sector” emissions that decline about 2%/year 2015-2030.

Figure 2: Banking implications from flat post-2020 emissions



Although these results are only preliminary and explore only two possible scenarios, we suggest they indicate a significant concern with respect to ARB’s assumption that only 150M allowances will be banked by the end of 2020. These results also demonstrate the serious risk that excess allowances in the program will frustrate its ability to deliver the emission reductions called for in the 2017 Scoping Plan to limit California’s 2030 emissions as required by SB 32. We encourage ARB and other interested stakeholders to explore the model using their own assumptions, and to review the model documentation and code. We would be glad to brief ARB staff and/or to receive ARB’s feedback. (NEARZERO)

Comment:

i. ARB has not shown what range of carbon prices the Board expects from the proposed market design, nor what prices are needed to keep emissions below the 2030 limit.

In contrast to every Scoping Plan and cap-and-trade regulation to date, the current rulemaking pivots away from the idea that the cap-and-trade program is designed to guarantee the state achieves its climate goals.

Instead, Board staff now suggest that the primary purpose of the program is to “support a steadily increasing carbon price signal.”⁷⁰

We agree that price-based policies (such as a carbon tax) can be perfectly effective as a climate strategy, but emphasize that their expected emission reductions are uncertain.

⁷⁰ ISOR Appendix D at 4-7; id. at 7 (“Conclusion: Historical performance of the Program demonstrates it is designed to support a steadily increasing carbon price signal.”).

As a result, careful analysis is needed to set prices at levels that are consistent with a specified emission reduction goal.

Unfortunately, the Board has not offered any analysis of the price levels that are expected from the proposed regulations, nor what price levels would be required to ensure that statewide emissions will fall below the 2030 limit. In the current SRIA, for example, the Board acknowledged that:

CARB cannot estimate when allowance prices might significantly deviate from the Auction Reserve Price [i.e., the price floor], nor can CARB estimate when, if ever, allowance prices might reach the two price containment points or the price ceiling.⁷¹

Staff have released “a preliminary assessment of abatement opportunities that could become cost-effective for industrial facilities,” including some opportunities that might be available at prices below the price ceiling.⁷² However, there is no connection between these data points—a set of cost estimates for various technologies—and the likely quantitative emission reductions expected at different market prices. Therefore, there is no serious basis in the proposed regulation for establishing ARB’s reasoned view on likely or necessary market prices.

Earlier this year, ARB indicated that it is very difficult to establish the right price level and used this observation to justify a preference for a binding cap-and-trade program.⁷³ Given the Board’s reluctance to model price-induced mitigation, ARB’s sudden interest in justifying the proposed market design on its ability to produce a “steadily increasing carbon price signal” is not without irony.

We note that the most important price level in the market today is the price floor, which was set at \$10 in 2010 and rises at 5% per year plus inflation.

That price level was determined in the 2010 rulemaking process and has not been re-evaluated in the context of the state’s ambitious 2030 climate law. ARB has provided no evidence in the proposed rule to indicate that prices at or near the floor would be consistent with the statewide emission limits; indeed, ARB’s price-induced mitigation assumptions in the 2017 Scoping Plan suggest that the program would not deliver the necessary reductions if prices remain at the floor.⁷⁴

⁷¹ ARB, ISOR Appendix C: Updated Standardized Regulatory Impact Analysis (Sept. 4, 2018), at 71.

⁷² *Id.* at 70 (Table 22) (reporting a range of technology costs from –\$25/tCO₂e to \$500/tCO₂e). We note, however, that the bulk of the range for projected technology costs exceed ARB’s proposed price ceiling, suggesting that the relevance of this table to establishing expected mitigation quantities is smaller than it at first appears.

Significant additional analysis and new data would be required to estimate a quantitative abatement cost curve that is based on this information.

⁷³ ARB Response to SEQ Questions, *supra* note 27, at 6-7 (question 6).

⁷⁴ See Figure 4 and Section 1.b.ii, *infra*.

Because the proposed regulations contain no analysis of either the expected or needed prices, the Board’s reliance on a “steadily increasing carbon price signal” does not address AB 398’s instruction to evaluate and address concerns about allowance overallocation. The problem of a slack market with excess allowances and low prices does not go away simply because there is an auction floor price that increases modestly each year.

ii. The 2017 Scoping Plan’s assumptions about price-induced mitigation are not based on any evidence or analysis.

The 2017 Scoping Plan contains a number of assumptions about the extent to which carbon prices are expected to produce emission reductions.⁷⁵

Specifically, the Plan assumes that the cumulative emission reductions called for from cap-and-trade—236 MMtCO₂e over the period 2021- 2030—can be achieved at prices halfway between the program’s floor price and pre-AB-398 APCR ceiling price.⁷⁶ We interpret this to mean at about a price in 2030 of approximately \$54 per tCO₂e (in 2015 USD).⁷⁷

Critically, this assumption is not based on any public data or modeling. ARB provides no citation to support these claims. As discussed at two IEMAC meetings, ARB believes these assumptions to be reasonable because they were put forward in the 2017 Scoping Plan process and received no public comments suggesting they were in error.⁷⁸ But there is no empirical or model-based rationale for these assumptions in the public record. As a result, we believe that these assumptions do not provide a reasoned basis for establishing that the program will deliver the necessary reductions if prices reach the levels ARB assumed, without analysis, to be sufficient in the 2017 Scoping Plan. Even if these assumptions do provide such a basis, ARB has not analyzed

⁷⁵ ARB, 2017 Scoping Plan, Appendix E: Economic Analysis (Nov. 2017), at 65, 90. Curiously, despite changing projections for the total quantity of emission reductions expected at various points in the development of the final 2017 Scoping Plan, ARB staff consistently projected that these reductions would be achieved at an average price halfway between the price floor and the pre-2020 Allowance Price Containment Reserve price (ceiling price). For example, Appendix E1 was published when ARB expected cap-and-trade to need to deliver 179 MMtCO₂e in cumulative reductions through 2030; ARB assumed this would be possible at prices halfway between the floor and ceiling levels. *Id.* at 65. When ARB subsequently revised its projections to call for 236 MMtCO₂e in cumulative reductions through 2030, staff assumed these reductions would be available at the same price in Appendix E2. *Id.* at 90. No justification was provided. See Figure 4 for a visual comparison of how ARB’s assumptions shifted to accommodate the cap-and-trade program’s changing role in the Scoping Plan Scenario.

⁷⁶ *Id.* at 90.

⁷⁷ We assume that the halfway point is calculated with respect to ARB’s assumed 2030 floor and ceiling prices, prior to the beginning of the current rulemaking process. At the time, ARB calculated the floor price in 2030 at \$25.20 and the ceiling price in 2030 at \$81.90 (both in 2015 USD). *Id.* at 11 (Table 5). The halfway point would be \$53.55.

⁷⁸ September IEMAC meeting, morning session, timestamp 29:36, <https://youtu.be/PGTeMUIUsiM?t=1776>.

whether the market is likely to produce those prices given the large bank of surplus allowances building up in private accounts.

Finally, we note that ARB's views in the Scoping Plan were far more optimistic about the degree of price-induced mitigation than the results of an influential report on likely market prices through 2030 by UC Berkeley Professor Severin Borenstein and his colleagues.⁷⁹ ARB has claimed that no adjustment to allowance supplies is warranted, supporting their argument by referring to a blog post from Professors Borenstein and Jim Bushnell⁸⁰ that is based on their earlier report.⁸¹ ARB's reliance on this analysis is misplaced for two important reasons.

First, while it is true that an intervention to remove excess allowances will increase market prices, reducing the supply of allowances will also significantly reduce pollution.⁸² Professors Borenstein and Jim Bushnell argue that the effect on emissions of a supply adjustment would be small, but in so doing, discount the requirements state law places on ARB's market design.⁸³ They assert that the primary impact of a reduction in allowance supplies would be to increase the chances of the market reaching the price ceiling, at which point the authors believe no further emission reductions would occur. Implicitly, they appear to be skeptical of the requirement in AB 398 that revenue from any "price containment units" sold at the price ceiling be used to fund mitigation outside of the cap. While this skepticism may be warranted on policy grounds or political pragmatism, AB 398 requires ARB to achieve at least an equal quantity of emission reductions for every price ceiling unit sale.⁸⁴ It is therefore inconsistent with state law for ARB to rely on an argument that assumes when market conditions reach the price ceiling, no additional greenhouse gas reductions will follow.

Second, there are significant inconsistencies between the price-induced mitigation assumptions in ARB's official 2017 Scoping Plan analysis and the model developed by Professor Borenstein and his colleagues, which is contingent on a pessimistic

⁷⁹ Severin Borenstein et al., California's Cap-and-Trade Market Through 2030: A Preliminary Supply/Demand Analysis. UC Berkeley Energy Institute @ Haas Working Paper #281 (July 2017).

⁸⁰ Severin Borenstein and Jim Bushnell, California's Carbon Cap is Not in Jeopardy, Because It's Not Really a Cap. UC Berkeley Energy Institute @ Haas Blog (Jan. 2, 2018), <https://energyathaas.wordpress.com/2018/01/02/californias-carbon-cap-is-not-in-jeopardy-because-its-not-really-a-cap/>.

⁸¹ ISOR Appendix D, at 14-15 (citing Borenstein and Bushnell, *supra* note 39).

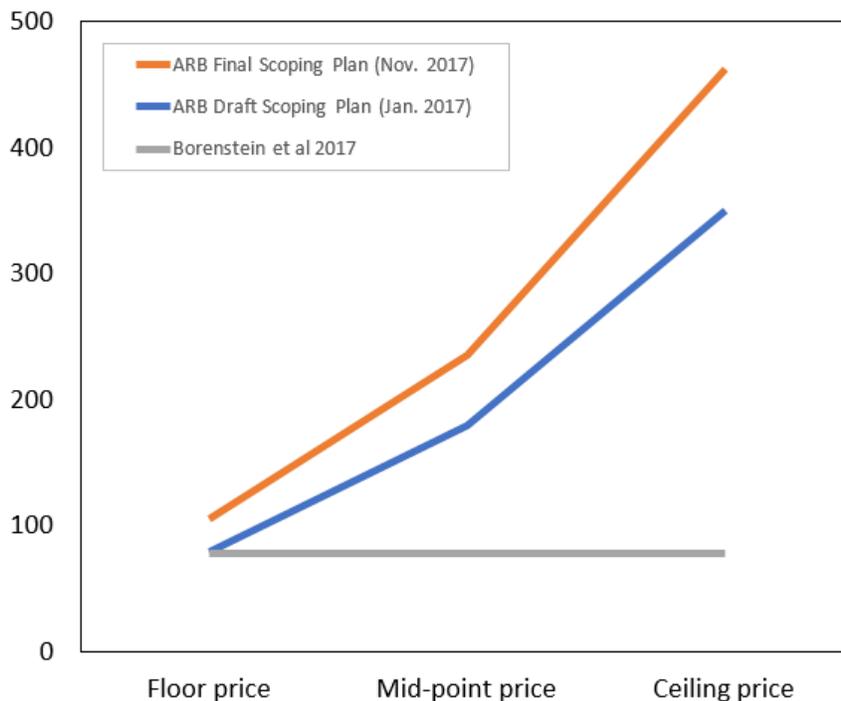
⁸² Danny Cullenward et al., Removing excess cap-and-trade allowances will reduce greenhouse gas emissions: A response to Severin Borenstein and Jim Bushnell. Near Zero Research Note (Jan. 11, 2018).

⁸³ Borenstein and Bushnell, *supra* note 39

⁸⁴ Cal. Health & Safety Code § 38562(2)(A)(ii)(II) (as added by AB 398); see also Cullenward et al., *supra* note 41, at 8-9 (sympathetically reviewing criticisms of the environmental integrity provision of AB 398's price ceiling revenue requirements).

interpretation of what might be possible from price-induced mitigation.⁸⁵ As Figure 4 illustrates, ARB’s Scoping Plan assumptions are much more optimistic: according to ARB, the cap-and-trade program will cause more than twice the reductions at the market price ceiling than does Professor Borenstein’s model.⁸⁶

Figure 4: Comparison of price-induced mitigation assumptions (cumulative MMtCO2 through 2030)⁸⁷



Indeed, even without addressing the price ceiling issue, updating their assumptions to reflect ARB’s price-induced mitigation would cause a supply intervention to produce 106.8 MMtCO2e in benefits—more than twice the projection by Professors Borenstein and Bushnell of only 42 MMtCO2e, and just under half of the cumulative reductions ARB calls for from cap-and-trade in the final 2017 Scoping Plan.⁸⁸ Again, this

⁸⁵ See also Chris Busch, Technical Appendix to Blog Post “Analyzing the Likely Impact of Oversupply on California’s Carbon Market Must Consider State’s 2030 Emissions Goal and Potential for Clean Tech Breakthroughs,” Energy Innovation LLC (Jan. 10, 2018).

⁸⁶ See also Cullenward et al, *supra* note 41, at 11.

⁸⁷ Based on *id.* at 11 (Figure 1) (reporting assumptions from the final 2017 Scoping Plan and Borenstein et al. analysis); see also ARB, *supra* note 34 at 65 (reporting assumptions for the January 2017 draft 2017 Scoping Plan).

⁸⁸ Following the same method identified separately by Cullenward et al., *supra* note 41, and Busch, *supra* note 44, the calculated reductions are determined by multiplying the change in likelihood of being at the price floor and ceiling, respectively, by the price-induced mitigation assumptions for each outcome and adding them together. Thus, the calculated mitigation for ARB’s 2017 Scoping Plan assumptions is $(-30\% * 106) + (30\%$

calculation assumes, contrary to AB 398, that no additional reductions will be delivered from revenue generated at the market's price ceiling; including those effects would significantly increase the environmental benefit of a supply adjustment.

Whatever one's views of these two factors, the argument presented by Professors Borenstein and Bushnell makes assumptions that are contrary to the requirements of state law and inconsistent with ARB's assertions in the Scoping Plan about price-induced mitigation. It is therefore inappropriate for ARB to refer to Professors Borenstein and Bushnell's argument as a rationale for not acting on allowance overallocation.

Prior to the present rulemaking process, ARB's rationale for implementing a cap-and-trade program has always been that higher prices will induce more mitigation, and that prices will adjust as needed to induce sufficient mitigation to achieve the state's climate goals. However, in the present rulemaking process, ARB has expressed pessimism about the extent of additional mitigation as prices rise above the floor, and thus has cast doubt on the basic premise of the cap-and-trade program. We do not consider the studies by Professors Borenstein and colleagues a sufficient basis for abandoning the basic premise of the program. (NEARZERO)

Comment:

Despite that progress, I do want to raise some serious concerns, which I know many of you have heard before from me about the overallocation issue. And I want to return to, Chair Nichols, your opening statement at the beginning of this session about the scoping plan and the role the Cap-and-Trade Program has consistently played in the Board's efforts to control climate change. The Board has always used this program to quantitatively backstop as an insurance policy to pick up the emission reductions we don't achieve through other strategies.

And with respect, I have to say the quantitative analysis supporting that notion in the current package is factually incorrect. Appendix D's analysis of this issue rests on a math error, plain and simple, and it does not provide the quantity backstop that the program used to play. Now, that is not to say that it won't produce important emission reductions or contribute meaningfully to the state's climate goals. But the role identified in last year's scoping plan was for this program to continue to rely as a backstop program that guarantees we hit our target. The proposed structure today increases the ambition of the program relative to today, but it doesn't rise to the level of ensuring we reach our goals.

And so I would suggest to you that if no adjustments are made to oversupply, not even to monitor the issue, as I would hope the Board would consider in the future, we're

* 462) = 106.8 MMtCO₂e. Per the Borenstein et al. framework, and contrary to the requirements of AB 398, this calculation assumes no mitigation at the price ceiling.

looking at a situation where one of two possibilities is the most likely outcome. Either we need to develop more regulations to get on track for our 2030 goal, especially addressing the tough sectors, or we risk not being on track to get our goal. Because again, the role identified for the Cap-and-Trade Program in the scoping plan is almost half of the reductions called for in 2030. And it is quite clear that if emission reduction trends continue as they have for the last couple of years, that we will have a significant surplus of credits, likely several hundred million, that enter the next phase of the period and make it unlikely that the program will constrain emissions on a quantity basis. Now again, we respect that there are many reasons to do tradeoffs between this policy and other approaches. And my group doesn't see one particular approach or another as necessarily superior. But the analytical foundations of the policies portfolio need to make sense. And with respect, they currently do not. (NEARZERO2)

Comment:

While I endorse our subcommittee report in full and believe its recommendations identify the most practical opportunities to improve the effectiveness of California's cap-and-trade program, I respectfully dissent from the subcommittee's decision not to address the validity of ARB's justification for inaction on allowance overallocation.

A. The IEMAC should have reviewed ARB's analysis of allowance overallocation

Cap-and-trade program design is an inherently complex topic. That is why it is especially important for expert advisory bodies, such as the IEMAC, to address critical disputes over key market parameters in plain and accessible language.

In extending the cap-and-trade program through 2030, the California Legislature indicated its concern about allowance overallocation, which multiple independent studies have suggested may put the state's 2030 climate target at risk.⁸⁹ AB 398 specifically requires ARB to evaluate whether the program has too many allowances.⁹⁰ ARB has since provided its response to AB 398's instruction to analyze allowance overallocation and concluded that no change to allowance budgets is warranted.⁹¹ In particular, the proposed regulation rests on the findings of a disputed April 2018 staff report that are repeated in Appendix D to the Initial Statement of Reasons.⁹²

Given the jurisdiction of this subcommittee and the critical importance of the April 2018 staff report to a clear statutory direction, I believe the subcommittee should have expressed its views on the technical validity of the Board's analysis. In my opinion, there

⁸⁹ See, e.g., Environmental Commissioner of Ontario, [Ontario's Climate Act: From Plan to Progress](#) – Appendix G: Technical Aspects of Oversupply in the WCI Market (Jan. 2018); Chris Busch, [Oversupply Grows in the Western Climate Initiative Carbon Market](#), Energy Innovation Report (Dec. 2017); Legislative Analyst's Office, [Cap-and-Trade Extension: Issues for Legislative Oversight](#) (Dec. 2017).

⁹⁰ Cal. Health & Safety Code § 38562(c)(2)(D).

⁹¹ ARB, Proposed Amendments to the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation, Staff Report: Initial Statement of Reasons, Appendix D: AB 398: Evaluation of Allowance Budgets 2021 through 2030 (Sept. 4, 2018) at 15-16.

⁹² Id. at 9-11 (citing ARB, Supporting Material for Assessment of Post-2020 Caps (Apr. 2018)).

is no more significant analytical question in the proposed regulation. If the cap-and-trade program has too many allowances, it will fail to reduce emissions in line with the 2017 Scoping Plan and may put the state's 2030 climate target at risk.

B. ARB's analysis of allowance oversupply is technically deficient

Had the subcommittee reached this question, I would have encouraged my colleague to join me in expressing concern about the Board's analysis of allowance overallocation. In my opinion, the Board has offered no analysis that shows how the proposed market design will achieve the role ARB designated for cap-and-trade in the 2017 Scoping Plan. The proposed regulation purports to demonstrate the adequacy of current allowance budgets via two different arguments—one focused on supporting a “steadily increasing carbon price signal” and the other on the number of allowances in the program—but neither analysis provides a sufficient technical basis for determining the proposed regulation has resolved concerns related to overallocation.

Historically, the cap-and-trade program has operated as a “backstop” or “insurance” policy designed to “close the gap” between the effect of regulatory efforts and any remaining mitigation needed to achieve statewide climate targets.⁹³ This language is found in every scoping plan to date—including the 2017 Scoping Plan, which contains multiple references to this functional role.⁹⁴ Now, however, ARB appears to refer to the program as having the primary goal of supporting a “steadily increasing carbon price signal.”⁹⁵ This shift in emphasis is profound and calls for a distinct kind of economic analysis.

While I agree with ARB that price-induced mitigation effects are perfectly capable of delivering greenhouse gas emission reductions, nowhere in the proposed regulations does ARB provide an empirical or model-based analysis of what carbon prices might be

⁹³ Guri Bang, David G. Victor, and Steinar Andresen (2017), *California's Cap-and-Trade System: Diffusion and Lessons*, *Global Environmental Politics* 17(3): 12-30; Michael Wara (2014), *California's Energy and Climate Policy: A Full Plate but Perhaps Not a Model*, *Bulletin of the Atomic Scientists* 70(5): 26–34.

⁹⁴ ARB, *California's 2017 Climate Change Scoping Plan* (Nov. 2017) at 25 (stating the Final Scoping Plan's strategy to “Continue the existing Cap-and-Trade Program with declining program caps to ensure the State's 2030 target is achieved”); *id.* at 26 (describing the cap-and-trade program's capability to deliver additional reductions if planned measures are delayed or ineffective, “to ensure the 2030 target is achieved”); *id.* at 30 (describing the final Scoping Plan Scenario and cap-and-trade's projected backstop role to “ensure the 2030 target is achieved”); *id.* at 34 (Table 4) (noting under the criterion “Ensure the State Achieves the 2030 Target” that the cap-and-trade program “scales to ensure reductions are achieved,” despite uncertainty in projected emissions and emission reductions); *id.* at 52 (“Flexibility allows the Cap-and-Trade allowance price to adjust to changes in supply and demand while a firm cap ensures GHG reductions are achieved”); *id.* 53 (“The aggregate emissions cap of the Cap-and-Trade Program ensures that the 2030 target will be met—irrespective of the GHG emissions realized through prescriptive measures”); see also ARB, Responses to questions at the [Joint Hearing of the Senate Environmental Quality Committee and Senate Budget and Fiscal Review Subcommittee No. 2](#) (Jan. 17, 2018) at 2-3 (describing the cap-and-trade program as a program that will achieve certain reductions with prices determined by the market).

⁹⁵ ARB, ISOR Appendix D, *supra* note 3 at 3.

necessary to achieve the state’s climate goals. Without a basis for determining what prices are necessary to achieve state climate goals and what prices might be expected from the proposed market design, I do not believe this line of inquiry responds to concerns about allowance overallocation.

The question, then, is whether the number of allowances in the program is sufficient to contain 2030 emissions at a level consistent with the legally binding limit set by SB 32. The only analysis of these quantity effects comes from an April 2018 staff report.⁹⁶ As the subcommittee report notes, however, not only does this staff report project a much smaller number of extra allowances than do credible independent reports, but its factual accuracy is in dispute.

My colleagues at the non-profit research organization Near Zero and I have claimed that ARB made a significant modeling error in its April 2018 staff report. We published our step-by-step criticism in May,⁹⁷ included our analysis in a comment letter to ARB,⁹⁸ discussed it in testimony before a legislative oversight hearing where ARB leadership also testified,⁹⁹ responded to ARB’s testimony in a follow-up letter to the same legislative committee with a courtesy copy to ARB,¹⁰⁰ and addressed the matter again in a second comment letter to ARB.¹⁰¹

Despite this extensive engagement, ARB has never addressed the criticism head-on. Here is the full extent of how Board staff responded in the proposed regulations:

In response to the initial staff analysis, one commenter stated there was an error in the CARB analysis. Staff evaluated the assertion and found that no error existed. The proposed adjustment by the commenter would have actually introduced an error.¹⁰²

In fact, even now staff admit the error Near Zero identified by acknowledging their projections of covered emissions included “fugitive emissions” that are not actually subject to the cap-and-trade program.¹⁰³ If staff believe the size of the error is not as large as Near Zero found using ARB’s own data, they should show their calculations and not merely assert their conclusion.

Because the debate over ARB’s April 2018 staff report concerns a key technical question related to the core jurisdiction of this subcommittee, and because the April

⁹⁶ ARB, Post-2020 Caps Report, *supra* note 4.

⁹⁷ Mason Inman, Danny Cullenward, and Michael Mastrandrea, Ready, fire, aim: ARB’s overallocation report misses its target. Near Zero Research Note (May 7, 2018), [An Open-Source Model of Supply And Demand in the Western Climate Initiative Cap-And-Trade Program](#).

⁹⁸ [Comment letter from Near Zero to ARB](#) (May 10, 2018).

⁹⁹ [Testimony of Dr. Danny Cullenward before the Joint Legislative Committee on Climate Change Policies](#) (May 24, 2018).

¹⁰⁰ [Letter from Dr. Danny Cullenward to Hon. Eduardo Garcia and Sen. Henry Stern](#) (May 30, 2018).

¹⁰¹ [Comment letter from Near Zero to ARB](#) (July 5, 2018).

¹⁰² ARB, ISOR Appendix D, *supra* note 3 at 10-11 (see footnote 11).

¹⁰³ *Id.*

2018 staff report is at the center of ARB's response to AB 398's instruction to evaluate concerns related to overallocation, I would have preferred that the subcommittee evaluate ARB's response to the criticism and make a substantive finding about the staff report's technical validity. (IEMAC – Cullenward Appendix)

Response: This grouping of comments are all from the same commenter and include new comments first submitted for the formal 45-day comment period and previous comments submitted during informal rulemaking activities. Many of the citations also reflect the commenter's same views in different venues or collaborations with additional parties.

The commenter asserts the Cap-and-Trade Program is, and will remain, in a state of oversupply that will jeopardize meeting the SB 32 target. Staff has determined the market is not in a state of oversupply that would jeopardize achieving the 2030 target, and expands upon this conclusion below.

CARB staff notes that an analysis of this issues was conducted as part of this rulemaking in conformance with the requirements of AB 398. This analysis is contained in Appendix D to the ISOR.¹⁰⁴ Based on this analysis, CARB staff concluded that the allowance budgets from 2013 through 2030 are binding on expected GHG emissions when accounting for the effects of complementary policies, and the allowance budgets conform to the statewide GHG reduction targets. Several analysts also find similar results.

Staff further noted in Appendix D that at this time, staff is not proposing to change existing banking rules, remove unused allowances, or change post-2020 annual caps as part of this rulemaking. Based on staff and third-party analyses, it is expected that allowance prices will continue to steadily increase in the next decade. Any proposal to remove allowances from the system must acknowledge that the result will be higher allowance prices, reached sooner, than would result from the adopted amendments to the Regulation. The continued alarm of "oversupply" by this commentator is firmly rooted in his belief that higher carbon prices, which translates into higher compliance and consumer costs, are necessary and has never been substantiated with any data.

In adopting the amendments, Board Resolution 18-51 directs staff to continue monitoring allowance supply, and to quantify and report to the Board, by no later than December 31, 2021, the volume of unused allowances from 2013 to 2020, including volumes held in private accounts, and the potential for unused allowances to hinder the ability of the Program to help achieve the SB 32 target. The Board further directed that CARB staff will hold a workshop in 2019 to discuss potential methodologies to evaluate this topic.

¹⁰⁴ Initial Statement of Reasons, Appendix D (2018). "AB 398: Evaluation of Allowance Budgets 2021 through 2030"

The adopted Regulation contains a number of provisions that will have the effect of strengthening the Program's ability to meet the SB 32 target. The adopted Regulation retains the 2017 amendments' withdrawal of allowances from within the post-2020 caps to align post-2020 allowance supply with updated estimates of pre-2021 emissions. These allowances are distributed evenly into the two new post-2020 Reserve tiers. Consistent with the initial funding of the current pre-2021 Reserve, CARB will place 22.7 million additional allowances from within the cap to the second new post-2020 Reserve tier reflect the change from a 4 percent to 6 percent offset limit in 2026. See Response to 45-Day Comments B-4.2 for a further discussion of this change. AB 398 also clarified that the mechanism for removing unsold allowances following undersubscribed auctions will be made a permanent feature of the post-2020 program.

In regards to the setting of the post-2020 caps, as part of the 2017 amendments, CARB calculated a supply of allowances for the post-2020 time frame consistent with the 2030 SB 32 target based on extensive modeling conducted in the development of the 2017 Scoping Plan. As described in Appendix D to the ISOR (pp. 7-9), the caps were set for the 2021-2030 period based on the same method and ratio of the covered versus non-covered emissions as the caps from 2013 to 2020.

Please also refer to Response to 45-Day Comment B-1.3 regarding the uncertainty analysis that was conducted during the development of the 2017 Scoping Plan to evaluate the ability of the 2017 Scoping Plan with a Cap-and-Trade Program to achieve the 2030 target under a variety of future scenarios.

During public workshops, staff released a paper of supporting material for assessment of post-2020 caps available in Appendix E to the ISOR.¹⁰⁵ The paper showed that the Cap-and-Trade Program will continue to support a steadily increasing price signal to support GHG reductions through the next decade.

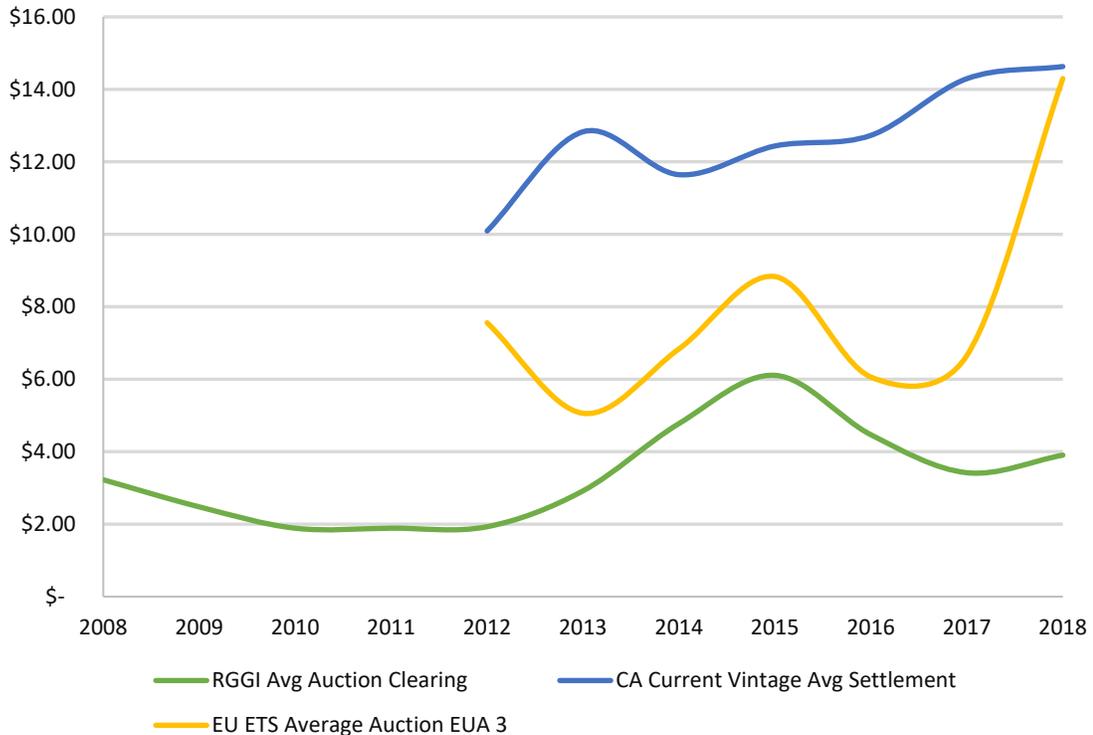
As noted in Response to 45-Day Comment B-1.3, the Program's price signal is currently prompting reductions in the electric sector. Figure C from Appendix D of the ISOR is reproduced below. It provides a comparison of the average annual California auction clearing prices with historical auction clearing prices in RGGI and the EU ETS. The California allowances prices are the highest across the three programs. The EU ETS does not have a floor price and the floor price in the RGGI program is set at \$2.20/metric ton in 2018.¹⁰⁶ Between 2017 and 2018, there was a significant increase in the average annual auction clearing prices in the EU ETS as a result of program modifications (the Revisions for

¹⁰⁵ <https://www.arb.ca.gov/regact/2018/capandtrade18/ct18pprocess.pdf>

¹⁰⁶ See https://www.rggi.org/sites/default/files/Uploads/Auction-Materials/40/Auction_Notice_Apr_17_2018.pdf.

Phase 4 (2021 – 2030)).¹⁰⁷ The Revisions included a Market Stability Reserve (MSR) to reduce the surplus of emission allowances that had accumulated in the carbon market and to improve the EU ETS's resilience to future shocks.¹⁰⁸ In 2018, the EU ETS average auction clearing price is comparable to the California average auction clearing price. The removal of excess allowances is a major driver in this price increase.

Figure C. Historical Average Annual Auction Clearing Prices



The decision by these programs to not include a floor price or set a lower floor price contributed to a concern about low allowance prices and the ability of the programs to deliver the GHG emissions needed to meet their GHG reduction targets. This is not the case for the California Cap-and-Trade Program. The additional features in the Program, including the self-correcting Auction Reserve Price mechanism, have reinforced the higher floor price that has continued to steadily increase over time. By asking for the removal of allowances, the commenter seems to be asserting the need for higher allowance prices in the Program without offering how high those prices would be or the impacts to the economy, jobs, or households. See Response to 45-Day Comments B-1.3 for a further discussion of how the design of the Program supports a steadily increasing carbon price signal.

¹⁰⁷ See https://ec.europa.eu/clima/policies/ets/revision_en.

¹⁰⁸ See https://ec.europa.eu/clima/policies/ets/reform_en.

As stated in Appendix D to the ISOR, if it appears statewide emissions are not declining as needed, CARB staff will evaluate which sectors are not responding as anticipated, review all programs that cover those sectors, and ascertain why, as well as assessing the best path forward to ensure California stays on track to meet its legislatively established GHG targets. Periodic reviews of progress toward achieving the 2030 target, including the 2022 Scoping Plan update, and the performance of specific policies will also provide opportunities for the State to consider any changes to ensure we remain on course to achieve the 2030 target.

With respect to the commenter's continuing assertion that CARB's amendments and analyses contain a mathematical error, and that CARB has never directly responded to that assertion, the commenter is incorrect. Appendix D to the ISOR assesses the commenter's claims and shows CARB staff's analysis, as did a pre-regulatory workshop which included a detailed discussion and presentation on how the caps have been set for 2013-2020 and 2021-2030, and directly addressed how the commenter's assertion itself would actually introduce an error into the cap setting by seeking to drive reductions beyond the statutory mandate. Those workshop materials are included in Appendix E to the ISOR (pp. 1077-1080). Most notably, unlike the staff analysis, the commenter appears to continue to ignore how the caps are set and that they already include the adjustment the commenter incorrectly asserts is missing. If the commenter's suggestion to make an additional adjustment were incorporated, this suggestion would itself lead to a mathematical error, which could only be remedied by reducing allowance supply. Reducing allowance supply would increase prices for allowances today and in the future and is in line with the commenter's long standing belief that allowances prices in the Program are too low, for which he offers no evidence. CARB staff further notes that this commenter is an outlier in that no other comments were submitted during the formal rulemaking comment periods asserting there was an error in staff's analysis.

CARB also disagrees with the assertion that the Cap and Trade Program does nothing to assist disadvantaged communities. Funds from the auction proceeds are placed in the Greenhouse Gas Reduction Fund (GGRF). The funds can then be used to support projects around the state that reduce greenhouse gas emissions, and provide disadvantaged communities other benefits as well. See also Response to 45-Day Comment B-1.7 for a further discussion of this topic.

Finally, with respect to the commenter's offer for CARB and others to use a new open source model, CARB staff appreciates that this online model enables users to input different emissions and allowance numbers, and notes that the same methodology to evaluate this issue (although without the feature to input different numbers) was previously developed for Appendix D to the ISOR.

Emissions Caps Are Appropriate

B-2.2. Comment:

California's Cap-and-Trade Market Is Not Oversupplied. CARB staff has correctly found that the state's climate initiatives have collectively achieved more emission reductions than forecasted¹⁰⁹. Rather than focusing on the positive news that California is doing better than expected in achieving its climate goals, a few stakeholders have tried to make the case that because of this over-performance, allowances should be removed from the market. The assertion is baseless, and the suggested remedies would have the potential to disrupt the stable market that CARB has worked diligently to develop.

The cap-and-trade program was wisely designed to slowly/gradually tighten, thus allowing adequate time for adjustment in obligated parties' business processes. It is important to note that after 2020, the annual cap decline factor is increased 3.4% per year, up from 1.7% per year, twice as stringent as pre-2020. Debates about oversupply inevitably involve debates about allowance banking since the perceived concern about oversupply arises from a fear that allowance banking allows entities to avoid reducing emissions. Allowance banking, however, promotes early investment in emissions abatement measures and plays an important cost containment role, without compromising environmental integrity¹¹⁰. (WSPA2)

Comment:

Further, WSPA urges CARB to uphold its proposal not to make changes to the Program based on purported concerns with "overallocation" and to reject any calls to reduce or discount allowances based on such concerns. (WSPA3)

Comment:

3. TID supports CARB Staff finding that there is no "overallocation", and that the stringency of the cap provides the necessary constraint on emissions in order to achieve the 2030 goal.

TID agrees with the analysis in Appendix D of the ISOR. The design of the Cap & Trade Program ensures that carbon prices escalate while emissions reductions are ensured through the Cap itself. Staff correctly points out that allowance adjustments in the Regional Greenhouse Gas Initiative (RGGI) and the European Union Emissions Trading Scheme (EU ETS) were necessary because of the absence of (EU ETS) or low (RGGI) floor prices that provided no incentive for early action. TID applauds Staff for not reacting to unsubstantiated claims about the environmental integrity of the Cap & Trade program, and the pragmatic analysis presented in Appendix D, which include third party

¹⁰⁹ https://www.arb.ca.gov/cc/capandtrade/meetings/20180621/ct_pres062118.pdf

¹¹⁰ <https://www.arb.ca.gov/lists/com-attach/57-ct-3-2-18-wkshp-ws-BmpXJIMNU28Lewdi.pdf>

allowance price forecasts that all support consistent findings of 1) a cumulative shortage of allowances in the Mid 2020's and, 2) that estimated allowance prices will steadily increase out to 2030.¹¹¹ (TURLOCKID)

Comment:

Next, CARB staff has correctly found that the state's climate initiatives have collectively achieved more emission reductions than forecasted. Rather than focusing on the positive news that California is doing better than expected in achieving its climate goals, a few stakeholders have tried to make the case that because of this overperformance, allowances should be removed from the market. This assertion is not well founded. The suggested remedies would actually have the potential to disrupt the stable market that CARB has worked diligently to develop. Debates about oversupply inevitably involve debates about allowance banking, since the perceived concern about oversupply arises from a fear that allowances banking allows entities to avoid -- avoid reducing emissions. Allowance banking, however, promotes early investment in emission abatement measures, and plays an important cost containment role without compromising environmental integrity. This is something to be celebrated, not punished. As such, we support CARB staff's proposal on this issue. (WSPA4)

Comment:

5. Allowance Allocation and Post-2020 Cap-Setting

AB 398 SEC. 4. Section 38562 (c)(2)(D) directs CARB to "evaluate and address concerns related to overallocation in the state board's determination of the number of available allowances for years 2021 to 2030". SDG&E is supportive of the proposed regulation's stance on what some stakeholders refer to as "overallocation" or "oversupply." SDG&E agrees with CARB that the fact that covered emissions have been lower than the annual caps does not represent a failure, but rather a success of the Cap-and-Trade Program. The state is on track to achieve the 2020 emissions target early. SDG&E agrees with Staff's thinking on this issue in that the program is working as intended and that any modifications warrant more thoughtful and in-depth evaluation. We also share Staff's concerns that making the market more stringent would penalize covered entities for early action in reducing GHG emissions and incent covered entities to only do the minimum going forward.

Available analyses, such as the report from the University of California Energy Institute,¹¹² generally project that allowance demand will exceed supply sometime before 2030, even when including the purchase of previously banked allowances. When this occurs, prices will increase, and they could increase dramatically. Permanent removal of allowances from the market will restrict supply and accelerate potential allowance price spikes. While cumulative in-state emissions will be lower, this allowance

¹¹¹ Ct18isor, Appendix D, p. 14.

¹¹² Severin Borenstein, James Bushnell, and Frank Wolak, "California's Cap-and-Trade Market Through 2030: A Preliminary Supply/Demand Analysis" (July 2017) Working Paper 281.

supply reduction will necessarily cause compliance costs to be higher, and at higher prices, economic leakage, emissions leakage, and greater negative impacts to households are likely to occur. SDG&E believes the current mechanism to address periods of low demand by transferring unsold allowances to the APCR after 24 months is an adequate safeguard. (SDG&E)

Comment:

Additionally, CARB was tasked with evaluating oversupply or checking on the numbers of allowances within the program...

For oversupply, it is encouraging to see CARB staff not make any hasty decisions to withdraw allowances from the budget, which will only serve to drive allowance prices higher. We believe liquidity in the market is important and provides time for firms to evaluate and implement emission reduction projects in support of the program's goals. Those that believe the program is oversupplied must be under the incorrect opinion that a large disproportionate fraction of the participants in the program can bank allowances over multiple years to achieve the results. The ability for enough firms to accomplish this is questionable, and assuming so will distort the actual benefits of allowance banking and early reductions. (MARATHON)

Comment:

CARB should avoid making the program arbitrarily more stringent mid-stream. Companies have already begun to make investments based on current market dynamics established under the state's cap-and-trade regime. Making significant and arbitrary mid-course corrections would change the factors that informed that decision-making process and is likely to punish entities who have taken early actions to reduce greenhouse gas emissions. Furthermore, it is virtually impossible for obligated parties to develop a compliance strategy based on a moving target. This is the wrong signal to send – especially to other jurisdictions who could be considering linking with California's program. The proposal to remove allowances from the market also disregards the fact that other jurisdictions such as Quebec are for the most part net takers in the program. In order to avoid penalizing California's obligated parties, we support CARB staff's recommendation to maintain these allowances in the regular auctions. (WSPA2)

Comment:

Preserving liquidity of available allowances is essential to maintain a stable program. Phillips 66 agrees with CARB's conclusion that the allowance budgets from 2013 through 2030 are binding on expected GHG emissions and that supply of allowances will not exceed demand during the regulatory period. **We support CARB's conclusion to neither cancel unused allowances nor lower the program caps to correct what is only perceived oversupply.** Obligated parties should not be penalized for their actions which may have resulted in early overcompliance. (PHILLIPS66)

Comment:

In addition, WSPA supports CARB's proposed determination that no changes to the Regulation are needed to address concerns regarding "overallocation" of allowances and strongly oppose the contrary view. There is no policy justification for such a change, and as discussed below CARB lacks legal authority to make such a change in any event. Accordingly, WSPA urges the Board to continue to reject any calls for a change in approach... (WSPA3)

Comment:

JUG Members support the program-wide annual allowance budgets for the 2021-2030 period. The Joint Utilities agree with CARB Staff's evaluation that the "currently established caps would constrain GHG emissions from 2013 through 2030" and "support a steadily increasing carbon price signal".¹¹³ Existing design features, such as the auction reserve price, declining post-2020 caps, and the transfer of unsold allowances to the Reserve after two years, are sufficient to ensure a steadily increasing carbon price signal. (JOINTELECUTILS)

Comment:

The GUG also supports the consensus positions of the California electric utilities as outlined in the Joint-Utility Group letter on the following topics:...2) Support for ARB's annual allowance budgets for the 2021-2030 period;...(JOINTGASUTILS)

Comment:

"Overallocation" Allowances

AB 398 requires the ARB to review whether the program is overallocated. CCEEB believes the current program is appropriately allocated. The concern of overallocation was a part of the initial discussions in 2009 and the reason California's Cap-and-Trade Program includes a robust emissions reporting, verification, and statewide inventory and design features like the 24-month provision for transferring unsold allowances to the Allowance Price Containment Reserve (APCR), output-based benchmarks for industrial processes, the auction reserve price, as well as the declining banking and holding limit which restricts the number of allowances an entity can hold as a function of the annual budget. From 2021 to 2030 the holding limit will decrease nearly twice as fast as the first ten years of the program. Additionally, entities with the largest compliance obligation have the same holding limit as those with the smallest. This ensures the scales are not tilted in favor of firms with a larger compliance obligation. Early compliance that resulted in overperformance, especially in the context of the increasing slope of the cap for the post-2020 goals, should not be a concern. The more aggressive 2030 goal will naturally tighten the market without regulatory intervention. At the very least it is premature for ARB to make changes in a market that is just recovering from

¹¹³ Staff Report Attachment D: AB 398: Evaluation of Allowance Budgets 2021 through 2030, <https://www.arb.ca.gov/regact/2018/capandtrade18/ct18398.pdf>

instability due to political and legal issues. The ARB must revisit the program by statute in 2025.

Some stakeholders have discussed the need to retire allowances from past auctions, which would only serve to constrict the market and send the wrong signal to market participants. CCEEB strongly encourages the ARB to reject any proposal to retire allowances from early compliance periods, as it would have substantial unintended financial and program consequences. Given the auction results after passage of AB 398, measures to tighten the market are premature and will result in substantial increases in costs for Californians as the market naturally tightens on its own due to its increasing stringency during the 2021-2030 timeframe.

California's Cap-and-Trade allocations are based on actual inventoried emissions unlike the first compliance periods of the EU ETS. The initial allocations under the EU ETS took place prior to the EU member states development of a strong GHG inventory, therefore, the first phases of the EU ETS relied on capacity-based benchmarks as opposed to California's output-based benchmarks. Adjusting the caps for the EU ETS was a result of limited information during the benchmarking phase, thus the suggestions that adjusting allocations based on the European precedent are should be dismissed by the ARB. (CCEEB)

Comment:

IV. "Overallocation"/Post-2020 Caps

PG&E supports the allowance budgets as reflected in the Draft Regulation. We agree with ARB Staff's evaluation that the "currently established caps would constrain GHG emissions from 2013 through 2030" and "support a steadily increasing carbon price signal"¹¹. The Cap-and- Trade Program is working as intended – filling the gap between cumulative emissions achieved by complementary measures and the state's GHG goals, as reflected in ARB's adopted allowance budgets, and is doing so cost-effectively. Existing design features, including the auction reserve price, rapidly declining post-2020 caps, and transferring unsold allowances to the Reserve after two years are sufficient to ensure a steadily increasing carbon price signal.

There are significant uncertainties in forecasting California GHG emissions through 2030, which must be considered when assessing unused allowances and post-2020 caps. Broad macroeconomic trends, including population and economic growth, will significantly influence California's emissions over time. Allowances that are currently unused have the potential to be a crucial precaution against rapidly rising allowance prices if economic or population growth exceeds current forecasts. For these reasons, PG&E strongly reiterates its support for the allowance budgets as currently proposed. (PG&E)

Comment:

On the overallocation, we agree with ARB staff that the current cumulative caps constrain GHG emissions through 2030, and support a steadily rising price signal. Our 2018 market study with NERA is consistent with this view.

The study finds high allowance prices in the late 2020s under ARB's existing program design.

And these high prices occur sooner if significant allowances are removed from the market -- from the market. We, therefore, support staff's current position, and we look forward to working with staff on continuing to improve these amendments to ensure a program that is both effective and sustainable. (PG&E2)

Response: Thank you for the support. Staff is required to assess emissions reductions through the Scoping Plan process. See Responses to 45-Day Comments B-1.3 and B-2.1 for a discussion of modelling conducted in support of the adopted Regulation, and a discussion of CARB's position that no changes are necessary at this time to allowance budgets or banking rules. The comment about CARB's legal authority is addressed in Response to 45-Day Comment B-2.4.

As stated in Appendix D to the ISOR, if it appears statewide emissions are not declining as needed, CARB staff will evaluate which sectors are not responding as anticipated, review all programs that cover those sectors, and ascertain why, as well as assessing the best path forward to ensure California stays on track to meet its legislatively established GHG targets. Periodic reviews of progress toward achieving the 2030 target and the performance of specific policies will also provide opportunities for the State to consider any changes to ensure we remain on course to achieve the 2030 target.

As further stated in Appendix D to the ISOR, at this time, staff is not proposing to change existing banking rules, remove unused allowances, or change post-2020 annual caps as part of this rulemaking. Based on staff and third-party analyses, it is expected that allowance prices will continue to steadily increase into the next decade. Any proposal to remove allowances from the system must acknowledge that the result will be higher allowance prices, reached sooner, than would result from the adopted amendments to the Regulation.

Support for Maintaining Existing Banking Rules

B-2.3. Comment:

PROGRAM STABILITY

SCPPA commends CARB on its decision to not make radical changes to the existing and well-functioning Cap-and-Trade compliance instrument market. SCPPA strongly supports the concept of a stable continuation of the Program where current rules allow

compliance entities to bank prior or current vintage allowances for use in future (post-2020) compliance periods. The ability to individually optimize allowance budgeting for compliance purposes will become increasingly more important as the overall Program cap of available allowances decreases and utility allocations are reduced. In addition to aiding in allowance market stability, this approach will help mitigate the risk of utility rate shocks and smooth the transition to a lower-emitting mix of generation resources in support of the recently signed Senate Bill 100 (de Leon, 2018).

By neither adjusting banking rules, nor adjusting the emissions budgets (the “cap”), CARB has shown the value of having predictable market signals. This approach enables SCPPA Members to comply with one of the world’s most ambitious climate change programs while also continuing to manage operations and investments as efficiently and effectively as possible in the continuing effort to keep electricity rates affordable for our customer-owners. A stable, yet increasing, price on carbon is a foundational programmatic policy. SCPPA also appreciates CARB’s thorough and thoughtful efforts to address price containment principles, discussed further below. (SCPPA)

Comment:

D. Banking and Oversupply

SMUD continues to support the CARB staff position that there is no current need to take actions, such as taking away or devaluing entity-banked emissions, that would penalize covered entities while exacerbating market uncertainties. SMUD believes that any action to remove allowances from the market today would introduce the potential for future allowance scarcity in the market, which would raise current compliance prices for our customers and increase concerns about unearned benefits to entities currently holding allowances in good faith. No regulatory action is currently necessary to address perceived oversupply concerns beyond those that ARB has already taken – such as establishing holding limits, moving unsold allowances to the APCR after some time, placing 52 million allowances into the APCR structure, and adding another 22.7 million allowances from the budgets in 2026-2030 into the APCR structure.

CARB ably defended their reasonable analysis of the potential for oversupply in the June 21st workshop. This analysis confirms that the current “bank” of allowances will very likely be needed and used prior to 2030, hence presenting no danger to the specific GHG target in that year. SMUD also agrees that significant sources of uncertainty remain that imply that further action to address oversupply may be counterproductive. To the list of uncertainties identified by CARB in their analysis presented at the June workshop, SMUD would add the potential for reduced hydroelectric generation and increased electricity demand in future years, due in part to the impacts of Climate Change itself on California weather.

SMUD advocates a “wait and see” approach to the question of changes to market supply (the caps) given significant uncertainty in market demand going forward over the

next decade and beyond. If the current bank persists over the next five years or so, that means that emission levels are following the Cap trajectory downward, and there is no clear reason why they would not continue to do so – that’s a good thing. If the bank is declining over time, that means that emission levels are not declining with the cap, but it also means that the bank is useful and that prices in the market will rise to reflect the changing conditions and foster increasing abatement in the future. There is not an economic rationale that supports the position that simply because there is a “bank” of allowances, market entities will ignore cost-effective abatement opportunities in favor of dipping into a bank of higher-cost allowances to cover unabated emissions. CARB should not be overly concerned today about a “bank” of allowances threatening the achievement of the “by 2030” target of GHG emissions 40% below 1990 levels for many reasons, including but not limited to:

- Increases or decreases in emissions over time are based on the price of allowances versus the cost of abatement and on complementary program actions, not the existence or size of a “bank”.
- The market expectation that the Cap and Trade program will extend beyond 2030, meaning that held allowances have long term value, rather than having a 2030 “use it or lose it” aspect.
- The fact that California’s climate laws and the Cap and Trade structure do not mandate any particular amount of GHG emissions in the year 2030, or any other year.

While some may suggest that the politically driven departure of Ontario from the linked Cap and Trade structure raises the importance of addressing perceived oversupply, SMUD asserts the opposite. The experience with Ontario reinforces the importance of keeping a stable structure, including supply of and pricing of allowances, to avoid the potential for political abandonment of carbon policy overall. A stable and predictable increase in carbon prices as caps decrease, supported by a gradual increase in the price floor, will best avoid politically driven abandonment of the program, and increase the potential for additional linkages to other jurisdictions to replace or even at some point re-include Ontario.

In addition, as noted by Staff, the impacts of GHG emissions are related to the cumulative amount of CO₂e in the atmosphere, rather than the specific amount released in 2030. Lower emissions in the years leading up to 2030 are better because fewer GHGs have accumulated, even if these lower emissions prior to 2030 result in an available “bank” in that year. Flexible banking rules encourage such early reductions. (SMUD)

Comment:

Finally, we support the staff position on oversupply and banking, and urge you to support that position. They thought through this well and decided to maintain the

provisions in the program that worked best. Any changes for that are likely to reduce the program effectiveness. (SMUD2)

Comment:

A. The Cap and Trade Program was designed to incentivize early reductions through banking and achieving the 2020 target four years early is a clear demonstration of success that is benefiting the atmosphere right now.

From the tone and framing of the subcommittee report it could be unclear to readers whether banking is a positive or negative aspect of the program or what the pros and cons are. I would like to note that the cap and trade program was intentionally designed to include banking which provides a number of benefits. From an environmental perspective, the most important is encouraging earlier emissions reductions. Banking means that if regulated entities can find cost-effective reductions earlier than required by the scarcity of allowances, they can bank allowances for a later date. This dynamic is clear in California's cap and trade program where the state has met its 2020 target four years early. This means at least a delay in emitting GHGs into the atmosphere where they will have a warming effect. Banking can also have benefits for price stability. In short, it is important to note that the cap-and-trade program is working as intended. Meeting the 2020 target four years early is a clear demonstration of the success of California's suite of climate policies. (IEMAC – Foster Appendix)

Comment:

First, I simply want to echo the comments by several industry folks regarding the excellent work that's been done on... oversupply... (CHEVRON)

Response: Thank you for the support. See Responses to 45-Day Comments B-1.3 and B-2.1 for further discussion on the analyses conducted pursuant to AB 398 that supported staff's determination that no changes are necessary at this time to allowance budgets or banking rules.

As stated in those responses, staff is not proposing to change existing banking rules, remove unused allowances, or change post-2020 annual caps as part of this rulemaking. Based on staff and third-party analyses, it is expected that allowance prices will continue to steadily increase into the next decade. Any proposal to remove allowances from the system must acknowledge that the result will be higher allowance prices, reached sooner, than would result from the adopted amendments to the Regulation.

CARB's Authority to Tighten Emissions Caps

B-2.4. Comment:

II. CARB LACKS STATUTORY AUTHORITY OR POLICY JUSTIFICATION FOR RETIRING OR DISCOUNTING ALLOWANCES IN THE MARKET

AB 398 directs CARB to “[e]valuate and address concerns related to overallocation in [CARB’s] determination of the number of available allowances for years 2021 to 2030, inclusive, as appropriate.” The ISOR (at page 24) states:

AB 398 also directed CARB to address concerns related to possible “overallocation” for the years 2021 to 2030 and to establish allowance banking rules that discourage speculation, avoid financial windfalls, and minimize volatility. CARB has analyzed and sought public comment on these issues through four informal public workshops leading up to this formal amendment process. As a result of this process, staff has found that for these items there is no need to make specific changes to the Regulation.

Appendix D to the ISOR further states (at page 3):

[S]taff found that the currently established caps would constrain GHG emissions from 2013 through 2030. This in turn would support a steadily increasing carbon price signal to prompt the needed actions to reduce GHG emissions. The results of this evaluation show that while there may be unused allowances in the early years of the Program, the design features of the Program and the established declining caps reinforce a steadily increasing carbon price signal through the next decade.

The Appendix D analysis concludes (at page 15-16):

Based on staff and third-party analyses, it is expected that allowance prices will continue to steadily increase in the next decade. Any proposal to remove allowances from the system must acknowledge that the result will be higher allowance prices, reached sooner, than would result from the proposed amendments to the Regulation. . . . [I]n addition to the Cap-and-Trade Program, we need to track all of the policies and sectors to ensure we stay on track with the reductions needed to meet our targets and, if necessary, make adjustments.

If it appears statewide emissions are not declining as needed, recognizing that year-to-year variability due to climate, global fuel prices, or economic factors can influence emissions, CARB staff will evaluate which sectors are not responding as anticipated, review all programs that cover those sectors, and ascertain why, as well as assessing the best path forward to ensure California stays on track to meet its legislatively established GHG targets.

WSPA supports CARB’s determination that stakeholder concerns regarding “overallocation” do not justify any changes to the Regulation. Further, as set forth below, CARB lacks legal authority to reduce or discount allowances on this basis. The comments below relating to performance targets and overallocation are intended to proactively respond to arguments advanced by other commenters that an oversupply exists and may impair the Program’s ability to achieve the State’s climate goals.

A. Background on the Performance Targets

1. California's GHG Emissions Targets for 2020, 2030, and 2050

AB 32, enacted in 2006, requires CARB to set a “statewide greenhouse gas emissions limit” equivalent to the state’s GHG emissions level in 1990 and “to be achieved by 2020” (the “**2020 Target**”).¹¹⁴ However, AB 32 does not identify this 2020 Target itself as a mandatory annual limit; rather, it refers to the 2020 target in the broader context of ongoing reductions, i.e., as a tool to “be used to maintain and continue reductions in emissions of greenhouse gases beyond 2020.”¹¹⁵ Consistent with this understanding, California courts have interpreted the 2020 Target in terms of longer-term objectives as well. For example, the California Court of Appeals stated in *Association of Irrigated Residents v. Air Resources Board* that the 2020 Target “is but a step towards achieving a longer-term climate goal,” noting approvingly that “[CARB] sought to define in the scoping plan measures that will permit the state to reach goals that are attainable by 2020, as a step toward the ultimate objective by 2050.”¹¹⁶

In 2016, the Legislature adopted SB 32, expanding upon the 2020 Target by requiring CARB to adopt regulations “ensur[ing] that statewide [GHG] emissions are reduced to at least 40 percent below the statewide [GHG] emissions limit no later than December 31, 2030 (the “2030 target”).¹¹⁷ Notably, the 2030 target originated in a 2015 Executive Order issued by Governor Brown, which set an emissions reduction goal of 40% below 1990 levels in 2030 as an “interim” target on the path to achieving the 2050 emissions goal set in 2005 by Governor Schwarzenegger.¹¹⁸

2. Methods of Achieving the 2020 and 2030 Targets

As noted above, AB 32 requires CARB to adopt “[GHG] emission limits and emission reduction measures by regulation to achieve the maximum technologically feasible and cost-effective reductions [“MTFCER”] in [GHG] emissions in furtherance of achieving the [2020 Target].”¹¹⁹ The requirement that GHG reductions be achieved in a cost-effective manner is reiterated ten times in different sections of the legislation, including in reference to the adoption of rules and regulations, approval of the scoping plan, and the adoption of the Program.¹²⁰ AB 398, adopted in 2017, reiterates the importance of cost effectiveness particularly with regard to distribution of emissions allowances, requiring CARB to “[d]esign the regulations, including distribution of emissions allowances . . . in a manner that is equitable [and] seeks to minimize costs and maximize the total benefits to California”¹²¹ This demonstrates that cost-

¹¹⁴ AB 32 § 38550.

¹¹⁵ AB 32 § 38560.5(c), 38562(a).

¹¹⁶ 206 Cal. App. 4th 1487, 1496 (2012).

¹¹⁷ SB 32 § 38566.

¹¹⁸ Executive Order B-30-15 (April 29, 2015).

¹¹⁹ AB 32 § 38562(a).

¹²⁰ AB 32 §§ 38560, 38561(a), 38562(c).

¹²¹ AB 398 § 38562(b)(1).

effectiveness is not a mere afterthought or subsidiary policy objective; to the contrary, it is a core statutory directive.

However, CARB is given significant flexibility with regard to how it achieves MTF CER, and clearly has the flexibility to evaluate compliance with those targets without focusing myopically on specific emissions levels in any single year. Indeed, AB 398 permits CARB to evaluate the Cap-and-Trade Program's emission reductions "in the aggregate" rather than focusing on reductions achieved in any specific year.¹²² For example, AB 32 states that CARB may, not must, "adopt a regulation that establishes a system of market-based declining annual aggregate emission limits for sources or categories of sources that emit greenhouse gas emissions."¹²³ Thus, while MTF CER is a clear statutory imperative, an annually declining emissions cap is a policy choice given to CARB.

AB 32 also specifically gives CARB the option of including a "market-based compliance mechanism" (an "MBCM") in the Regulations adopted in furtherance of MTF CER.¹²⁴ An MBCM is defined as either:

1. "A system of market-based declining annual aggregate emissions limitations for sources or categories of sources that emit greenhouse gases."; or
2. "Greenhouse gas emissions exchanges, banking, credits and other transactions, governed by rules and protocols established by the state board, that result in the same greenhouse gas emission reduction, over the same time period, as direct compliance with a greenhouse gas emission limit or emission reduction measure adopted by the state board pursuant to this division."¹²⁵

Thus, CARB may include either a system of declining annual aggregate emissions, GHG emissions credit trading, or both. The reference to achieving reductions "over the same period" in the second definition for MBCM is ambiguous as to whether the applicable period must be the period in which the declining emission limits are given (i.e., year-by-year) or whether the period can be the life of the Program. However, the inclusion of "banking" in the definition implies that the Legislature specifically contemplated that GHG emissions authorized in an early year of the Program could be surrendered in a later year, in addition to emissions authorized for such a later year by CARB.

The Program does, in fact, establish a "declining annual aggregate emission limit" in the form of the cap, which declines every year, and the emissions reductions reflected in the cap (as extended under AB 398) comply with both the 2020 Target and the 2030 Target. Accordingly, if the integrity of the cap is preserved (i.e., compliance entities are forced to meet their compliance obligations), the declining annual emissions limits (and

¹²² AB 398 § 38562(c)(2).

¹²³ AB 32 § 38562(c).

¹²⁴ AB 32 § 38562(c).

¹²⁵ *Id.*

hence, the Targets) are arguably reached even if the surrender of banked allowances results in emissions in 2020 or 2030 greater than the applicable limit.

B. Removing Allowances from the Program to Address “Overallocation” Concerns Is Neither Necessary Nor Permitted

In the period between the passage of AB 398 and issuance of the Proposed Regulations, some commenters have suggested that the Program will be oversupplied in 2021-2030 on the basis of a prediction that compliance entities will retire extra allowances to satisfy emission reduction targets, rather than reduce their own emissions.¹²⁶ These commenters have suggested that reducing the number of allowances in the program may be an effective way to correct this “oversupply.” However, there is no evidence that oversupply or overallocation is currently an issue in the Program or will be an issue in 2030. CARB’s own analysis of allowance budgets from 2021 to 2030 noted that “CARB staff and third-party analysis all indicate that the market from 2013 through 2030 is not *overallocated* with allowances and that cumulative supply will be below demand.”¹²⁷ Moreover, CARB lacks statutory authority to remove allowances from the Program. Concerns about “overallocation” are essentially concerns about “banking,” which refers to the ability of covered entities in the Program to hold onto allowances received or purchased in one compliance period for use in future compliance periods. Commenters have expressed concern that entities can avoid reducing emissions in the future by banking allowances today and retiring them in the future as the cap declines.

1. The Program Was Designed to Include Banking as A Method of Achieving MTF CER

But far from being an unanticipated problem, CARB specifically designed the program to allow banking of allowances for future use beginning with the first iteration of the Regulation issued in 2010. This decision was consistent with the recommendations of the Market Advisory Committee (the “**Committee**”) created by the California Secretary for Environmental Protection, which issued recommendations on design of the Program, including a recommendation to “allow for unrestricted allowance banking.”¹²⁸ The Committee’s recommendations were echoed by the California Climate Change Center at UC Berkeley, which recommended allowing the use of unlimited banking in order to

¹²⁶ See, e.g., Chris Busch, “Oversupply Grows in the Western Climate Initiative Carbon Market,” Energy Innovation: Policy & Technology LLC (Dec. 2017); Legislative Analyst’s Office, “Cap- and-Trade Extension: Issues for Legislative Oversight” (Dec. 12, 2017); Danny Cullenward, “Critical issues in post-2020 cap-and-trade market design: Hot air and carbon offsets,” *Climate Policy* (June 23, 2017), <https://static1.squarespace.com/static/549885d4e4b0ba0bff5dc695/t/5952c7436b4998a9abdce3dc/1498597187813/Hot+air+and+offsets.pdf>.

¹²⁷ 2018 ISOR, Appendix D at 14.

¹²⁸ CARB, Market Advisory Comm., Recommendations for Designing a Greenhouse Gas Cap- and-Trade System for California at 13, June 30, 2007 (the “Recommendations”), <https://www.energy.ca.gov/2007publications/ARB-1000-2007-007/ARB-1000-2007-007.PDF>.

“reduce[] the overall cost of emission reductions and help[] to avoid short-run volatility in allowance prices.”¹²⁹ Experienced environmental groups also have supported banking as a cost-effective method of maximizing GHG emissions reductions.¹³⁰

In allowing banking, CARB was applying the lessons of the EU-ETS, which saw a collapse in allowance prices during the first phase because of the inability of participants to bank allowances (because unused allowances would have no value after expiration of the compliance period). Closer to home, the Committee noted that the RECLAIM program likely would have resulted in earlier implementation of post-combustion NOx controls had banking been allowed.¹³¹

Banking also facilitates achievement of the statutory directives of AB 32. For example, the Committee’s Recommendations noted that banking encourages early action, reduces cumulative compliance costs and promotes early investment in emissions reductions:

Banking allows entities to over-comply in an early phase of program implementation and save allowances for surrender or trade in future compliance periods. This improves environmental performance by achieving reductions earlier; it also reduces cumulative compliance costs by creating an incentive for early over-compliance by entities that have low near-term marginal abatement costs. By providing flexibility, banking reduces price volatility and thereby promotes investments that provide deeper reductions in the near term. The Committee acknowledges these favorable properties of banking and supports a program with unlimited banking. That is, the Committee believes that allowances that are not submitted in a given period should qualify for use in any future period.¹³²

This reasoning was echoed by CARB staff, which listed banking as one of four cost-containment mechanisms included in the Program to ensure MTF CER in its initial statement of reasons for the 2010 rulemaking (“2010 ISOR”).¹³³ The 2010 ISOR further notes that banking “provides an incentive for covered entities to make early reductions since the declining cap could push allowance prices higher over time.”¹³⁴ In contrast, CARB considered and rejected an alternative rule allowing no banking because “it

¹²⁹ Dallas Burtraw et. al., Chapter 5: Lessons for a cap-and-trade program at 5-38, The California Climate Change Center at UC Berkeley, <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.565.3718&rep=rep1&type=pdf>

¹³⁰ See, e.g., Nathaniel Keohane, “How cap and trade works,” Environmental Defense Fund, <https://www.edf.org/climate/how-cap-and-trade-works> (last visited Oct. 22, 2018) (banking “increases the pool of available capital to make reductions, encourages companies to cut pollution faster, and rewards innovation.”).

¹³¹ Recommendations at 13.

¹³² Recommendations at 66.

¹³³ 2010 ISOR at 14.

¹³⁴ Id. at 34.

provides no financial or environmental benefits and would not necessarily increase the environmental integrity of the program.”¹³⁵

2. Banking Will Not Affect the Program’s Ability to Achieve the 2020 and 2030 Targets

As economists generally recognize, a multiyear program that allows banking by definition will not ensure compliance with a specific annual cap in a specific year. AB 32 and AB 398, however, both expressly authorize CARB to design the Cap-and-Trade Program to achieve “the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions, *in the aggregate*.”¹³⁶ As CARB explained in its initial rulemaking for the Program, in a program that allows allowance banking, “program stringency is best evaluated by considering all years” of the program rather than just the final year of the program.¹³⁷

Moreover, as discussed above, this potential result was not unanticipated by CARB. Indeed, in recommending unlimited banking be included in the Program, the Committee acknowledged that “[w]hile the number of emission allowances issued in 2020 will be set equal to 1990 emissions, it should be noted that actual emissions in any given year may be higher or lower than the number of allowances issued in that year because of banking and other flexibility provisions included in the program design. The opportunity for banking can lead to over-compliance in the early years of the program and can help bring technologies into the market.”¹³⁸ In other words, banked allowances represent early reductions in excess of those required by the declining cap and are beneficial to the Program. For this reason, the Committee noted that the Program will still deliver real emissions reductions, provided that the cap is set at a level below the then-current level of emissions.¹³⁹

The concern about stockpiling allowances follows directly from an unjustified assumption that the Program will end in 2030. If the Legislature decided to cancel the Program in 2030, compliance entities would be incentivized to “cash in” all of the allowances they have held up to that date because they will have no compliance value afterwards. But if the Program is not discontinued, surrendering all of an entity’s banked allowances to hit an interim 2030 target will turn out to have been a poor compliance strategy. Entities that have opted to invest in stockpiling allowances early rather than investing in sustainable emissions reductions strategies may face skyrocketing compliance costs once they exhaust their reserves of banked allowances. Other entities that have reduced their emissions will have a smaller allowance purchasing requirement going forward, but entities that have relied on stockpiling would

¹³⁵ Id. at 130.

¹³⁶ AB 398 § 38562(c)(2) (emphasis added).

¹³⁷ 2010 ISOR at 165.

¹³⁸ Recommendations at 21 n.8.

¹³⁹ Id. at 12.

likely continue to have high emissions and have no choice but to purchase allowances at 2031 prices.

But if compliance entities would be imprudent to base their compliance strategies on an assumption that the Program will not continue past 2030, it would be even more unjustified for CARB to issue regulations governing the Program on that basis, because there is every reason to believe at this point that the Program will continue. For example, Executive Order S-03-05 establishes an ambitious GHG reduction target of 80 percent below 1990 levels by 2050. CARB has treated both the 2020 and 2030 Targets as steps towards that ultimate goal, rather than as isolated goals in themselves. The current Regulations governing the Program establish annual budget years for the Program through 2050. Likewise, the recent Scoping Plan update frames the 2030 Target as a stepping stone toward achieving the 2050 GHG emissions goal.

3. Removing or Discounting Allowances from the Program or Disallowing Banking Would Be Contrary to Law

No California statute authorizes CARB to remove allowances from the Program or to remove or disallow the use for compliance purposes of allowances already issued within the Program. But more fundamentally, CARB lacks authority to remove allowances or prohibit banking, because doing so would violate AB 32's statutory directive to design the Regulations "in a manner that is equitable, seeks to minimize costs and maximize the total benefits to California, and encourages early action to reduce greenhouse gas emissions."¹⁴⁰

The effect of removing allowances from the market now to address a perceived "oversupply" would be to reverse course on CARB's prior policy decision to allow banking – a drastic course of action. Rather than encourage early action to reduce GHG emissions, as required by statute, removing allowances would punish market participants who made early reductions by tightening the market and creating the risk of higher compliance costs in the future. This action would also violate the statutory mandate to distribute emissions allowances "in a manner that is equitable." It is simply unfair to set market expectations that influence purchasing decisions and then reverse the rules that formed the basis of those decisions.

Removing allowances ultimately may not guarantee a certain quantity of emissions in the Program, but as commenters have noted, it would make it more likely that allowance prices would hit the price cap.¹⁴¹ This outcome is inconsistent with CARB's statutory obligations to achieve cost-effective reductions, particularly because there is no

¹⁴⁰ AB 32 § 38562(a)(1).

¹⁴¹ Severin Borenstein and Jim Bushnell, "California's Carbon Cap is Not in Jeopardy, Because It's Not Really a Cap," *Energy Institute at Haas* (January 3, 2018), <https://energyathaas.wordpress.com/2018/01/02/californias-carbon-cap-is-not-in-jeopardybecause-its-not-really-a-cap/>.

guarantee that pushing the price to the ceiling more quickly will keep emissions below the cap at any given point in time. (WSPA3)

Response: See Responses to 45-Day Comments B-1.3 and B-2.1 regarding the analysis conducted to determine no changes to banking rules, allowance budgets, or other changes the commenter references were needed as part of this rulemaking. With respect to the commenters' assertion that CARB lacks legal authority to remove or disallow the use of allowances, even though this rulemaking did not propose such changes, CARB disagrees with the commenter's view of CARB's legal authority. AB 32 and AB 398 provided specific direction for CARB to develop a market-based mechanism, including (under AB 398) to assess concerns of overallocation. If CARB were to have determined modifications were necessary in this rulemaking to existing proposed allowance budgets, banking rules, or other aspects of the program, the existing statutory authority provides CARB broad authority to undertake programmatic revisions to address such determinations. Specifically, contrary to commenter's assertion, AB 32's statutory directive to design the Regulations "in a manner that is equitable, seeks to minimize costs and maximize the total benefits to California, and encourages early action to reduce greenhouse gas emissions" would not bar CARB from making changes to the Regulation, such as reducing allowance budgets in future years. Additionally, beyond the considerations indicated above that the commenter discusses, AB 32 also requires CARB to adopt emission reduction measures that achieve "the maximum technologically feasible" GHG emission reductions in furtherance of achieving the statewide GHG emissions limit. AB 32 also requires CARB to consider overall societal benefits, including reductions in other air pollutants, diversification of energy sources, and other benefits to the economy, environment, and public health in establishing GHG regulations. AB 32 provides authority to CARB and reinforces CARB's discretion (along with AB 398) to adjust future allowance budgets and revise other market rules, if needed. Since CARB did not make such a determination, no further response is necessary at this time. See also Response to 45-Day Comment B-3.15 for a further discussion of the authority granted to CARB pursuant to AB 32.

Report on Allowance Supply

B-2.5. Comment:

- Public and private banking of allowances that are not needed in the pre-2021 market period will increase market supply in the post-2020 period, with the total number made available depending on future market prices. To improve transparency and address concerns about the ultimate emissions outcome, CARB should increase its public data reporting and prepare a comprehensive report on allowance supply...

3. CARB's proposed regulatory amendments

AB 398 added Section 38562(c)(2)(D) to the California Health and Safety Code, under which ARB is required to:

Evaluate and address concerns related to overallocation in the state board's determination of the number of available allowances for years 2021 to 2030, inclusive, as appropriate.

In its proposed regulations, CARB reaffirms its April 2018 staff report calculations and concludes that no adjustment to the cap-and-trade program budgets is warranted (CARB, 2018d: 7-11). Without expressing a view on this question, the subcommittee suggests that going forward, additional technical disclosures and public analysis from CARB would help address the statutory direction on overallocation. One member of this subcommittee has authored a separate statement on the issues addressed here.

4. Public comments

We received comments addressing concerns related to the public's ability to evaluate complex cap-and-trade program reporting data and clarify a common factual understanding of those data with ARB staff. As a general matter, the subcommittee believes it is essential for CARB to produce clearly documented public data that promotes a shared factual understanding of objective program conditions. This norm underlies several of our recommendations below on the need for additional reporting.

C. Recommendations

Conflicting views of market fundamentals highlight a challenge that needs to be addressed by CARB. Current reporting of allowance supplies and associated private account holdings are not sufficiently timely or transparent to facilitate easy analysis of the status of the program. Additionally, the potential differences in outcomes and the likely persistence of uncertainty even with more transparent accounting suggests there may be value in the development of program adjustments that would automatically occur if the accumulation of surplus allowances continues or if it reaches undesirable levels in the context of the state's long-term emissions reduction goals.

To help address the debate over overallocation and mitigate the consequences of impacts that many expect to arise, we recommend that CARB strengthen its data reporting disclosures and analyze three key issues...

3) Develop a comprehensive report on allowance supply. Given the different assumptions made by public studies, we recommend CARB develop a report that:

- a) Compares and contrasts all public projections of allowance supply, including the different assumptions and methods used;

- b) Includes all of the “allowance pools” in the pre-2021 and 2021-2030 market periods in the assessment, including the transfers mandated by AB 398 (see Cullenward et al., 2018b);
- c) Addresses the “self-correcting” auction mechanism in California’s regulations, whereby allowances that go unsold for 24 months are sent to the allowance price containment reserve (Inman et al., 2018b);
- d) Undergoes a public review process.

[The original comment, which includes a reference list, is available at <https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=ct2018>.] (IEMAC)

Comment:

d. California’s Independent Emissions Market Advisory Committee calls for a comprehensive study of market supply- demand balance. This study should be done as an input into the present rulemaking process, not an afterthought.

Acknowledging the debate between independent researchers and ARB’s internal analysis, the IEMAC calls for a comprehensive study of program allowance supplies.¹⁴² We endorse this recommendation wholeheartedly but believe that such a study should be done as an input to the current regulatory process, not as an afterthought. (NEARZERO)

Response: The comments call for an additional study that is not required for the process of amending the Cap-and-Trade Regulation and is therefore out of the scope of the adopted amendments. Notwithstanding this, CARB staff notes that Responses to 45-Day Comments B-1.3 and B-2.1 describe the types of analyses conducted as part of this rulemaking and that will be provided in the future. The Response to 45-Day Comment B-1.3 also contains a description of the many analyses and information sources that already are made available for the Program. As noted in that response, CARB publishes allowance holdings quarterly to its web page at <https://www.arb.ca.gov/cc/capandtrade/capandtrade.htm>. These reports summarize all allowances and offsets available in the linked market, including instruments in jurisdictional as well as entity CITSS accounts. Using these tables, the public can, for example, trace the transfer of unsold allowances from the Auction Holding Account to the Reserve or review the holdings of allowances back to 2013 vintages. In other words, many of the components of the report requested by the first commenter are already publicly accessible. CARB staff responds to the remaining elements of the first commenter’s requested report below.

¹⁴² 2018 IEMAC Report, *supra* note 14, at Chapter 6.

The first element of the commenter's desired report would compare and contrast all public projections of allowance supply, including the different assumptions and methods used. CARB disagrees that there is an advantage in comparing and contrasting all possible analyses of the market. CARB receives hundreds of comments in the rulemaking process. As part of this public process, CARB conducts workshops, provides opportunity for public input, and in this Final Statement of Reasons, provides responses to each comment received during a rulemaking. See, for example, Appendix E to the ISOR¹⁴³ for a copy of the written materials generated during the public outreach leading up to the 2018 rulemaking.

Second, the commenter's desired report would include an analysis of all available "allowance pools." As noted above, this is already available on a quarterly basis via the allowance holdings report. In addition, and as noted in Response to 45-Day Comment B-1.3, in adopting the amendments, Board Resolution 18-51 directs staff to continue monitoring allowance supply, and to quantify and report to the Board, by no later than December 31, 2021, the volume of unused allowances from 2013 to 2020, including volumes held in private accounts, and the potential for unused allowances to hinder the ability of the Program to help achieve the SB 32 target. The Board further directed that CARB staff will hold a workshop in 2019 to discuss potential methodologies to evaluate this topic. When this report is concluded, staff will be able to provide the actual number of unused allowances carried forward to the post-2020 Program, which would also make any third-party forecasts of "oversupply" moot.

Third, the commenter's requested report would include a discussion of the "self-correcting" mechanism contained in the Program. One of the discussions of this mechanism was contained in Appendix D of the ISOR. As noted there, the mechanism is a provision that removes allowances that remain unsold at quarterly auctions from circulation during periods of low auction demand and slowly reintroduces these allowances back during periods of high demand. The provision supports the escalating floor price and also helps reduce price volatility from changes in allowance demand. The 2016 regulatory amendments included a provision that moves any allowances that remain unsold for eight consecutive auctions to the Reserve. This amendment was approved by the Board in July 2017. Additionally, AB 398 includes legislative direction on the treatment of unsold allowances, which is consistent with the regulatory amendments adopted in 2017. This mechanism has already proven to be effective. Due to low demand for allowances through 2017, at least 39 million allowances will be transferred to the Reserve and removed from general circulation. These removals are visible in the quarterly instruments reports noted above.

¹⁴³ <https://www.arb.ca.gov/regact/2018/capandtrade18/ct18pprocess.pdf>

Fourth, the commenter's requested report would be subject to public review. As noted above, CARB already produces a great deal of information and analysis publicly. In addition, see Response to 45-Day Comment B-1.3 for a description of the 2017 Scoping Plan process, that involved substantial public engagement. See also Attachment E to this rulemaking for the public comments received in the informal process that preceded this rulemaking. And as noted above, the report on 2013-2020 instruments carried forward to the post-2020 Program will be discussed at public workshop in 2019 and will be presented to the Board in 2021.

The second commenter asserts that CARB should have conducted a study such as the one called for by the first commenter in advance of the rulemaking, in order to use it as an input to determining future allowance supply. The timeline of the current regulatory process was driven by many factors including AB 398 requirements, Board Resolution 17-21, and the importance of providing market certainty to allow business to make long-term financial decisions in onsite investments for efficiency and compliance strategies.

Notwithstanding this required timing, CARB used 2017 Scoping Plan modelling in setting the post-2020 caps during the 2016 rulemaking, much like the process advocated by the second commenter.

While the 2017 Scoping Plan was adopted by the Board in December of 2017, the effort to account for expected lower emissions in 2021 began in fall of 2015. There were two workshops held in October 2015 to start the public process to update the 2017 Scoping Plan and begin the amendments to the Cap-and-Trade Regulation that were adopted in July 2017. This concurrent development process allowed staff to use the modeling results from the 2017 Scoping Plan to inform the Cap-and-Trade Program's cap setting for 2021 through 2030. Consistent with the process for the 2008 Scoping Plan, the 2017 Scoping Plan provided key information used to establish the post-2020 caps.

See Response to 45-Day Comment B-1.3 for a discussion of how key features of the Program, including the Auction Reserve Price and Banking, will support emissions reductions through the 2020s. Within the post-2020 caps, see Response to 45-Day Comment B-2.1 for a discussion of adjustments to allowance supply made to comport with AB 398. See Response to 45-Day Comment B-1.3 for a further discussion of opportunities for public involvement during rulemakings, modelling conducted in support of the adopted Regulation, and existing oversight and reporting requirements as CARB monitors progress towards achieving the statutory 2030 target.

Metrics for Adjusting Emissions Caps

B-2.6. Comment:

- CARB should consider rule-based adjustments to program design that would adjust the supply of allowances based on observable metrics and in response to any concerns identified in the recommended studies...

(IEMAC)

Comment:

Chapter 6: Managing Allowance Supply

Authors: Danny Cullenward and Dallas Burtraw

A. Context

The term “overallocation” refers to a market condition where the supply of compliance instruments persistently exceeds emissions. Some independent analysts estimate that the volume of allowances in California’s program, accounting for allowances that will be newly issued after 2020 and the carryover of privately and publicly held allowances from the current period, is large enough to put at risk the State’s ability to achieve its 2030 greenhouse gas limit. California Air Resources Board (CARB) projects a smaller difference between cumulative allowances and expected emissions. We identify steps CARB could take to make it possible for the public and market participants to better estimate this market fundamental, as well as mechanisms that could remedy an allowance supply surplus if it is necessary to do so to comply with statutory goals.

B. Key considerations

1. Introduction

The cap-and-trade program covers approximately 75% of California’s statewide emissions. Although its coverage is broad, the cap-and-trade program is only one of many climate policies in the state. Some regulations affect emitters subject to the cap-and-trade program (called *covered sources*); others apply to emissions outside of the cap-and-trade program. The interaction between the cap-and-trade program and regulations that affect covered sources is important to understanding the costs, benefits, and environmental effectiveness of California’s climate policies. These companion regulations and policies lead to emission reductions at covered sources, reducing those sources’ need for allowances and thereby reducing the price observed in the market. If the price falls to the price floor, the supply of allowances entering the market will be reduced; if the price rises to the cost containment price tiers, the supply of allowances will be increased. Over a large range of price outcomes (that is, at prices above the price floor and below the cost containment price tiers), there is no adjustment to the number of new allowances introduced into the market (see Policy Interactions

subcommittee report). Hence, the supply of allowances in the market and emissions from covered sources is uncertain and contingent on future market conditions.

The terms *overallocation* or *oversupply* are frequently used to refer to the concept of the cap-and-trade program's supply of compliance instruments (i.e., allowances and offsets) exceeding the demand for those instruments (i.e., emissions from covered sources). Because California has achieved its annual emissions reduction target for 2020 four years ahead of schedule, with allowances issued on a pre-determined schedule that is independent of this outcome, any extra allowances that are not needed for compliance through 2020 can be banked, or carried over, for use in subsequent years. This carry over of allowances from the pre-2021 program period triggers two sources of concern. One is that the state may not have been as ambitious as it could have been in its near-term emission reductions goals; a second and somewhat opposite concern is that the surplus of allowances in 2020 that can be banked for future use may cause the state to fail to achieve its goals for 2030.

California's cap-and-trade program features unlimited allowance banking, meaning that market participants can buy and save significant numbers of allowances for future compliance needs. There are two dimensions to banking in the program. One is the ability to bank across years within a multi-year compliance period, and the second is the ability to bank across compliance periods, which together imply unlimited banking as long as compliance period milestones are achieved.¹⁴⁴

In practice, this means that cap-and-trade with banking functions as a cumulative pollution reduction policy: it does not guarantee that emissions fall to any particular level in any given program year or compliance period, but rather that cumulative emissions across multiple compliance periods are equal to or less than the number of compliance instruments made available over that same time horizon. In contrast, California law sets statewide annual emissions limits for the years 2020 and 2030. There is a possibility that firms will use allowances banked from previous years to enable higher-than-allowed emissions in 2030. Moreover, it may be that emissions over the ten years covered by the extension to the trading program, from 2021-2030, are greater than the cumulative issuance of new emissions allowances because compliance entities may draw on banked allowances from the pre-2021 program period. In either case, the surplus of allowances currently in circulation could cause emissions to exceed the emissions budget for sources covered by the trading program after 2020.

The statutory obligations apply to emissions on an economywide basis, meaning both sources covered under the trading program and those that are not. Reductions not achieved under the trading program must be achieved elsewhere. Consequently, a

¹⁴⁴ The proposed regulatory amendments state that "Each compliance period represents either a 2-year or 3-year block in the Program, 2013-2014, 2015-2017, 2018-2020, 2021-2023, 2024-2026, 2027-2029, and 2030 and beyond" (ARB, 2018e: 15). We interpret the year 2030 as a single-year compliance period, which is of course subject to change if the program is re-authorized by statute past its current expiration at the end of 2030.

transparent understanding of market fundamentals is not only important to the operation of the market, but also to guiding strategy for regulations and policies that apply to uncovered sources.

For context, the 2017 Scoping Plan calls for the cap-and-trade program to deliver a cumulative reduction of 236 million tons of CO₂e (MMtCO₂e) in the market's 2021-2030 period, relative to a scenario that includes the projected effect of all of California's regulatory measures. The number of new allowances (the emissions cap) to be issued in 2020 is 334.2 MMtCO₂e; in 2030 it is 200.5 MMtCO₂e.

2. The overallocation debate

The size of the projected surplus after 2020 depends on multiple factors, including the allowance price—which determines the number of allowances purchased at auction and whether allowances in the program's cost containment reserves are purchased and enter private circulation—as well as future emissions subject to the cap-and-trade program. Several independent researchers and government entities have estimated the number of surplus allowances that will be in private circulation by the end of 2020 and therefore banked for use after 2020:

- 1) 270 (± 70) million allowances (Busch, 2017)
- 2) Between 100 and 300 million allowances (LAO, 2017a)
Central estimate of 200 million allowances (LAO, 2017b; LAO, 2018)
- 3) More than 300 million allowances (ECO, 2017)

Most of the allowances that previously went unsold at auction in 2016-2017 because the price was at the price floor are expected to be re-introduced through subsequent auctions and are included in these estimates.¹⁴⁵ Approximately one third of the unsold allowances will be removed from the normal auction supply and transferred to the post-2020 cost containment reserve.¹⁴⁶

The studies referenced above were published prior to Ontario's exit from the cap-and-trade program, which increased the net supply of compliance instruments by approximately 13 million allowances (Mastrandrea et al., 2018; CARB, 2018b). The proposed regulation addresses this issue by enabling CARB staff to cancel program

¹⁴⁵ Each of these studies considers the re-introduction of previously unsold allowances, but it is unclear whether the LAO calculations exclude some 39 million unsold allowances that will be transferred to the allowance price containment reserve as a result of remaining unsold for 24 months (CARB, 2018a; LAO, 2017a; LAO, 2018). Busch (2017: 4) and the Environmental Commissioner of Ontario (ECO, 2018: 4) properly include the transfer of unsold allowances to the reserve (see also Inman et al., 2018b).

¹⁴⁶ All the unsold allowances will either be re-introduced and sold at future auctions or transferred to the post-2020 market reserve. Assuming that the maximum number of previously unsold allowances are sold in the next auction, the total number of allowances transferred to the post-2020 price ceiling will be approximately 39 million (CARB, 2018e: 44 (see Table 8)). This is about 1/3 of the approximately 120 million allowances that went unsold at auction in 2016-17, of which about 2/3 are expected to be purchased at auction and therefore included in private accounts (Inman et al., 2018b).

allowances to account for the excess Ontario allowances currently held by California compliance entities (CARB, 2018e: 75-76).

These studies were also conducted before CARB published data for 2016 emissions, which indicated that emissions were 58.3 million tons below program caps that year, contributing further to the allowance surplus (Cullenward et al., 2017; LAO, 2018).

However, the studies may not fully account for several million allowances to be set aside in the voluntary renewable energy program accounts and to be retired in response to a natural gas power plant's bankruptcy proceeding, nor the potential for CARB to retire tens of millions of allowances to account for resource shuffling in the CAISO Energy Imbalance Market (CARB, 2018a: 8-9; see Leakage subcommittee report for additional discussion).

As suggested above, another important factor influencing the assessment is the role of cost containment measures that contain allowances in government-controlled accounts. If prices fall to the price floor, the number of allowances entering private accounts will fall. If demand remains low, some of these allowances will be shifted into cost containment reserve. Even if the price floor is never binding, the proposed post-2020 cost containment reserve will hold 235.9 million allowances, which would begin to enter the market only if the auction price rises to a price tier of \$39.01 (2018\$) in 2021, growing at 5% per year in real terms. Consequently, the total supply of allowances in the market depends on future market conditions.

Of the 239.5 million allowances designated for the post-2020 price containment tiers in CARB's proposed regulations, 160.8 million (67%) originate from the pre-2021 market period (CARB, 2018e: 44 (see Table 8)). These pre-2021 allowances are currently held in government accounts and are therefore excluded from the independent estimates of private banking cited above (Busch, 2017; LAO, 2017a; ECO, 2018).¹⁴⁷ If post-2020 market prices rise to the cost containment price tier levels, then these allowances will also enter the market as part of the allowance supply.

In contrast, CARB (2018a: 8-9) has projected that no more than 150 million allowances are likely to be banked at the end of 2020 and argues this quantity would not put the state's 2030 climate target at risk.¹⁴⁸ Some analysts (including a member of this subcommittee) argued that the staff report is in error and that the surplus of allowances in 2020 will cause the state to overshoot its 2030 target under the Scoping Plan scenario's assumptions (Inman et al., 2018a). A legislative oversight committee found similar concerns (JLCCCP, 2018). CARB continues to dispute these issues (CARB, 2018c; CARB, 2018d).

¹⁴⁷ All three studies exclude allowances in CARB's price reserve accounts, but there is a dispute over whether LAO properly excluded some 39 million allowances that went unsold at auction and will be transferred into the post-2020 price reserves, rather than re-introduced at auction. See footnote 2 for details.

¹⁴⁸ CARB assumed that no post-2020 reserve allowances are introduced to the market.

There are no textbook rules or standard methodologies that specify the ideal size of an allowance bank. Typically, economic models that look for least-cost pathways to achieve deep decarbonization under cap-and-trade programs suggest that large allowances banks may form in the early years of a program; however, large banks may only be consistent with a policy goal of limiting cumulative emissions but not necessarily with achieving annual emission limits. Analyzing appropriate banking levels is a highly contextual exercise that depends on the policy goals of the program. Both the Regional Greenhouse Gas Initiative and EU Emissions Trading System cap-and-trade programs have analyzed this question in their own contexts and made program adjustments to affect the size of allowance banks in their respective programs.

Official analysis of California’s cap-and-trade program has evaluated the program as a *quantity* instrument—including the 2008 Scoping Plan, its 2014 update, and the 2017 Scoping Plan, which assume the program will operate as a backstop to limit emissions and ensure the state will achieve its 2020 and 2030 emission limits. However, if the allowance price is at the floor or cost containment price tiers, the supply of allowances will differ from expected levels, and the program may not ensure a specific cumulative or annual emissions outcome. Under these conditions, the emissions outcome will be influenced by *price* impacts. CARB made assumptions about price-induced mitigation in the 2017 Scoping Plan (CARB, 2017: 65) that vary from other studies (Borenstein et al., 2017; Busch, 2018; Cullenward et al., 2018a: 11). There is no analysis in the proposed regulations of what prices are required to deliver the emission reductions called for in the 2017 Scoping Plan. In particular, if the price were to fall to the price floor, it would cause a reduced sale of allowances, but it is uncertain what the emissions outcome would be at the designated price floor level.

Empirical evidence continues to indicate that entities are acquiring more allowances than they need in the short term and the private bank is growing. Emissions subject to the cap-and-trade program are below annual program caps (Cullenward et al., 2017; LAO, 2017b). Yet quarterly auctions continue to clear at prices above the price floor and all allowances are entering the market. As detailed further below, we believe that CARB should develop metrics to track these outcomes empirically and consider regulatory reforms that would automatically adjust allowances supplies in response to the accumulation of an excessively large allowance bank—that is, one that would appear to preclude the market from contributing to the attainment of long-run emission reduction goals...

4) Develop a report on options to manage allowance supply. In parallel to an assessment of overallocation, we recommend CARB develop a report that focuses on options for addressing allowance supply concerns that may manifest in the future, including:

- a) Adjustments to the price floor, price containment points, and offsets regulations within statutory constraints;

- b) Replacement of Ontario allowances with California allowances from different “allowance pools”;
- c) Cancellation of allowances or transfers of allowances from future year program budgets into the post-2020 reserve or price containment points;
- d) Comparison of automatic rule-based adjustments to market supplies versus administrative interventions;
- e) Implications of any potential interventions on linking arrangements. (IEMAC)

Comment:

Nevertheless, my sincere hope is that the analysis and metrics recommended by the subcommittee will provide policymakers with an evidence-based framework for evaluating whether adjustments to the current supply of allowances are warranted. (IEMAC – Cullenward Appendix)

Comment:

Managing Allowance Oversupply

I would like to thank the subcommittee for their thoughtful work on this issue. On the whole I believe the joint subcommittee report provides a careful look at what has become a contentious issue around the supply of cap-and-trade allowances. I write separately here to make a few higher level points that are absent from the joint report, noting that the cap-and-trade program is functioning as intended, although there could be an important opportunity to increase ambition...

B. Banking can create opportunities for increased ambition.

The fact that banking can provide benefits to the program does not mean that a larger bank of allowances is necessarily better. As the subcommittee report notes there are no “textbook rules or standard methodologies for determining the ideal size of an allowance bank.” I agree. Under the right circumstances, EDF, the organization I currently work for, has supported decreasing the size of the allowance bank by making cap adjustments. A large bank of allowances and allowance prices consistently close to the price floor can indicate an opportunity to increase the ambition of a program by decreasing the overall supply of allowances. This type of cap adjustment can occur as a onetime cap adjustment or through an automatic mechanism that removes allowances either temporarily or permanently from circulation. To some extent this is already happening in California. As CARB has noted in Appendix D of the current regulatory package, at least 39 million allowances will be moved to the price containment reserves due to the new rule that is triggered if allowances go unsold for a period of 24 months. There has also been advocacy for a minimum permanent cap adjustment that is equivalent to the 52.4 million allowances that are the difference between cap setting methodologies CARB considered during the regulatory development process. CARB has instead proposed to move these allowances into the price containment reserves as

well. Again since there is no clear best practice, these different approaches represent a difference in calculation as to the best way to balance policy objectives.

C. In considering whether it is appropriate to make a cap adjustment, it is worthwhile to consider emissions impact, price impact, and adequate notice to the market.

In considering whether a cap adjustment to increase ambition is appropriate there are two sets of key questions to consider: First, what will the impact of reducing the supply of allowances actually be on overall emissions (and prices)? And second will the method of cap adjustment provide adequate notice to the market or unduly penalize market participants for over complying?

On the first point, the theory of cap and trade means it should be relatively simple to reduce emissions by decreasing the supply of allowances. However, it gets more complicated in practice. As Borenstein et al. have pointed out in a 2017 working paper, there could be a high likelihood that prices are either at the floor or the ceiling meaning there are few cost-effective abatement opportunities between the floor and the ceiling price.¹⁴⁹ Some comments on the regulatory proposal have used this result to suggest that reducing the overall supply of allowances may not have any real emissions impact on the program. However, this argument ignores two key points. First, that there is insufficient real data to test this modeling result and thus it could be significantly underestimating the abatement opportunities between the floor and the ceiling. Second, that there is a requirement to purchase reductions on a ton-for-ton basis if instruments are sold at the ceiling. While this might not result in reductions in California, it will result in reductions to the atmosphere that will reduce the warming impacts of pollution. Therefore, it seems clear that there is an emission benefit to reducing the supply of allowances; the question is balancing that benefit with the potential to increase allowance prices.

The second question regarding notice and penalization is also somewhat subjective. There are two major opportunities for making cap or supply adjustments that are worth considering. First, when initial budgets are being set as they are now for the 2021-2030 period. The market has an expectation about the end point in 2030 that will be used as a fixed goal. But there could be multiple appropriate methods for determining the trajectory and thus annual budgets between two fixed targets in 2020 and 2030 that the agency could freely choose between. The second way to adjust budgets would be to set up an automatic process that is outlined in the regulation for tightening budgets. California has this with the “24 month rule” but it represents a temporary removal from circulation vs. a permanent removal which would guarantee an emission reduction via the ton-for-ton requirement at the ceiling. RGGI has also adopted an Emissions Containment Reserve starting in 2021 which will automatically tighten the cap if prices are below a set trigger price that rises over time.¹⁵⁰ (IEMAC – Foster Appendix)

¹⁴⁹ 2017 working paper <<https://ei.haas.berkeley.edu/research/papers/WP281.pdf>>

¹⁵⁰ Elements of RGGI <<https://www.rggi.org/program-overview-and-design/elements>>

Response: CARB notes that the commenters are not asking for changes substantially related to the adopted Regulation, and thus the comments are outside the scope of this rulemaking. Notwithstanding this, see Response to 45-Day Comment B-2.1 for staff’s discussion of allowance supply, and Response to 45-Day Comment B-1.3 for a discussion of the comprehensive modelling conducted in support of the adopted Regulation. Response to 45-Day Comment B-1.3 also includes a short discussion of the uncertainty analysis conducted as part of the 2017 Scoping Plan. The uncertainty analysis is discussed in greater detail in Appendix E of the 2017 Scoping Plan.¹⁵¹ See also Responses to 45-Day Comments B-1.3 and B-2.5 on the information that is already available to the public.

CARB disagrees with one comment letter’s assertion that the Program features unlimited allowance banking. There is limited banking, not unlimited banking, given the application of holding limits. Banking is fully utilized by a small minority of entities, and provides clear benefits to the Program. As further discussed in Response to 45-Day Comment B-1.3, and contrary to the commenters’ assertions, banking also does not jeopardize achieving the SB 32 target. See also Response to 45-Day Comment F-2.7 for a discussion of why CARB has not expanded the holding limits, and how staff constructed the holding limit to balance covered entities’ need to accumulate sufficient instruments with the potential for market power. Therefore, staff did not propose any modifications to the existing banking rules as part of the adopted amendments.

The commenters’ critiques of banking is not supported by California-specific data. As noted in Appendix D, in the last three years, the average number of California registered entities that have come within at least 95 percent of the holding limit is less than one percent. Banking also provides clear benefits to the Program. These benefits include flexibility, “an incentive to make early reductions and encourage[ment of] long-term commitment to the system from stakeholders.”¹⁵²

As noted above, the comment letter speculates that banking could jeopardize reaching the SB 32 target based on pre-2021 allowances carried into the post-2020 Program. CARB disagrees with this assertion for the reasons outlined in Response to 45-Day Comment B-1.3. As noted in that response, the Program includes features to support a steadily increasing carbon price signal, and this transition will motivate further reductions to achieve our 2030 target. See also Response to 45-Day Comment B-1.3 for a discussion of Board Resolution 18-51, that directs staff to quantify the pre-2021 allowance supply that may be carried into the post-2020 Program.

¹⁵¹ https://www.arb.ca.gov/cc/scopingplan/2030sp_appx_econ_final.pdf

¹⁵² <https://www.arb.ca.gov/regact/2010/capandtrade10/capv2appd.pdf>

See Response to 45-Day Comment B-2.1 for a broader discussion of why CARB is not proposing to change existing banking rules, remove unused allowances, or change post-2020 annual caps as part of this rulemaking. Based on staff and third-party analyses, it is expected that allowance prices will continue to steadily increase into the next decade. Any proposal to remove allowances from the system must acknowledge that the result will be higher allowance prices, reached sooner, than would result from the adopted amendments, and include an evaluation of cost impacts to the economy, households, and jobs.

In addition, see Responses to 45-Day Comments B-2.1 and B-2.5 for a discussion of the automatic rule-based mechanism already contained within the existing Regulation to remove allowances from auction during short term periods of low demand, as well as a comparison of features of the Program to features of RGGI and the EU ETS. As discussed in Appendices D and E of the ISOR, the rule pertaining to the treatment of allowances that have not been sold for 24 months will remove approximately 39 million allowances from the general auction supply, as a result of undersubscribed auctions in 2016 and 2017.

In terms of metrics, when IEMAC members believe there may be a long-term issue, CARB notes that the IEMAC is in a unique position to also suggest such metrics.

Within an analysis that would support suggestions of such metrics, CARB would ask the IEMAC to consider CARB's expectation that the existing features of the Program support a smooth transition from the current path of meeting our 2020 climate targets ahead of schedule to the prices that will motivate further reductions to achieve our 2030 target. This smooth transition is realized due to cost-containment features that already exist in the Program and the new features included in AB 398.

Responses to 45-Day Comments B-1.3 and B-2.5 discuss the publicly available information and oversight processes at the annual level already built into review of the Program. The 2022 Scoping Plan update, and annual reports to committees of the Legislature including the Joint Committee on Climate Change Policies, provide opportunities for future review of the Program's progress in meeting the SB 32 target.

As discussed in Response to 45- Day Comments 2.1, if it appears statewide emissions are not declining as needed, CARB staff plans to evaluate which sectors are not responding as anticipated, review all programs that cover those sectors, and ascertain why, as well as assessing the best path forward to ensure California stays on track to meet its legislatively established GHG targets. Periodic reviews of progress toward achieving the 2030 target and the performance of specific policies will also provide opportunities for the State to

consider any changes to ensure we remain on course to achieve the statutory 2030 target.

Tightening Emissions Caps

B-2.7. Comment:

Post-2020 Emissions Cap

California has an opportunity to increase ambition by tightening the cap that would not penalize regulated entities.

EDF maintains its position that a cap adjustment of 52,400,000 is appropriate post-2020. This cache of allowances exist because the current regulation sets the 2021-2030 cap based on a straight-line reduction between 2020 and 2030, rather than a step down to emissions in 2021. These allowances are currently intended to be split evenly between the two post-2020 reserve tiers, but by removing them from the program instead, California would be taking a step toward greater climate ambition.

The most important reason for making this adjustment from EDF's perspective is that the program now contains a firm price ceiling with environmental integrity protection, both described above. Before AB 398, these additional allowances could perhaps be justified as providing further price protection given the soft price ceiling. However, the new hard price ceiling will provide absolute price protection. Pre-2020 APCR allowances will also provide a buffer before CARB needs to begin issuing new PCUs above the emissions cap. If the price ceiling is triggered, the reserve at the ceiling is exhausted, and PCUs are sold above the cap, AB 398 requires CARB to use the resulting revenue from the PCUs to secure reductions that meet standards similar to those for offsets on at least a ton-for-ton basis. If these 52,400,000 tons are placed in the two price tiers instead of removed from the annual budgets that will mean a delay in triggering that environmental integrity mechanism and will represent 52,400,000 fewer reductions for the atmosphere.

The retirement of these 52,400,000 allowances is important to EDF from an environmental perspective because cumulative emissions are what matter to the atmosphere so a more stringent set of annual budgets represents a more ambitious climate reduction trajectory for the state. In recommending that CARB reset post-2020 caps based on the trajectory between expected emissions in 2021 and the 2030 target, we are identifying an opportunity that California has for this increased ambition.

EDF recognizes that CARB is in a position of trying to balance stringency with cost containment, and we appreciate that CARB has explained the consistency in their cap-setting methodology between pre- and post-2020. However, we respectfully request that CARB give this proposal further examination and consideration, or explain why they do not see this as an opportunity to increase climate ambition.

The cap-and-trade program has been successful at reducing emissions, as demonstrated by current emissions being below the cap, and tightening the post-2020 cap puts California on even stronger footing to meet the 2030 target. (EDF)

Comment:

Second, EDF maintains our position that a modest cap adjustment post-2020 is important to increase California's climate ambition.

Specifically, the 52.4 million allowances that are currently slated to be split between the two post-2020 price tiers should be removed from the program entirely.

These allowances are not needed for cost containment, and we think it's an important opportunity to increase ambition. We recognize that CARB is trying to balance stringency and cost containment, but this is a really important step towards meeting our 2030 target to increase ambition.

So we would respectfully request that CARB give this proposal further examination or explain why they do not see this as an opportunity to increase ambition. (EDF2)

Comment:

Attachment 1: October 12, 2017 Workshop Comments

2. CARB should address market overallocation and adjust banking rules per AB 398 requirements in order to ensure the cap and trade program operates effectively to help California meet the 2030 emissions reduction targets and 2050 goals

The cap and trade allowance market is currently significantly overallocated, putting both the efficacy of the cap and trade market and the ability of this market to help us meet our 2030 emissions target and 2050 goals at risk. Overallocation, combined with the ability for market participants to bank allowances for an unlimited period creates a strong incentive for market participants and financial speculators to buy unneeded allowances up to the holding limit at today's low market price. In principle, the requirement to purchase allowances should present polluters with a choice: invest in emissions reductions or, if these investments are more expensive than the market price for allowances, purchase allowances instead. As the cap declines and allowance prices rise, more firms should opt to invest in pollution reductions rather than continue to pollute. But in an overallocated market with no limitation on the future compliance value of banked allowances, firms can continue to pollute at current levels and purchase low cost excess allowances as a hedge against future price increases. In this way, a firm could lock in higher levels of pollution with no risk of facing high compliance costs as the market tightens. When this behavior is aggregated across the market, it can have the effect that, in early years, more allowances are purchased than are surrendered, and in later years, more allowances are surrendered than purchased. As a result, emissions decline less than the amount by which the cap declines, and the market risks

significantly underperforming in later years, which will make it more difficult to achieve the 2030 emissions reduction target. The fact that in this scenario firms delay investments in pollution reduction also means that achieving deeper reductions after 2030 will be even more difficult.

At a time when we are calling on the cap and trade market to do more work than ever to drive emissions reductions, the carbon market must not operate with one arm tied behind its back. CARB should therefore evaluate and implement policy adjustments to eliminate the current overallocation and to limit purely financial speculation in the cap and trade market that hampers the market's ability to drive genuine technological and operational changes that reduce emissions.

A. CARB Should take steps to address overallocation in the cap and trade market

To address the oversupply, CARB should consider options for implementing a cap adjustment that will eliminate the overallocation in the market. The Legislative Analyst's Office estimated in June, 2017 that "the cumulative oversupply of allowances in California's cap and trade program through 2020 could range from 100 million to 300 million allowances, with it most likely being roughly in the middle of that range." They go on to note that if these oversupplied allowances are allowed to carry over for compliance in the 2020-2030 period, it "makes the post-2020 program less stringent, which potentially increases emissions. . . ." ¹⁵³ At the high end of this range, banked allowances purchased from the current overallocation could substitute for the full 294 million tonnes reduction the scoping plan requires the cap and trade program to produce. If these levels of allowances are banked and only spent in the out years of the program, it could allow obligated parties within the cap and trade market to hold actual emissions steady at higher levels while still nominally meeting their reduction targets. The result of this would be a system that, in 2030, complied with cap and trade market program requirements but left emissions in capped sectors above the cap. CARB can address this problem in part by removing the excess allowances from circulation through one or more cap adjustments, commencing as soon as possible.

AB 398 requires CARB to "Evaluate and address concerns related to overallocation in the state board's determination of the number of available allowances for years 2021 to 2030, inclusive, as appropriate," and to "Establish allowance banking rules that discourage speculation." ¹⁵⁴ To comply with these provisions and to ensure that the cap and trade market functions effectively to drive needed levels of emissions reductions, CARB should take steps to prevent current overallocated allowances from allowing real emissions to exceed SB 32 targets and to ensure that California is on a trajectory which

¹⁵³ Legislative Analyst's Office, letter to Hon. Cristina Garcia, June 26, 2017. Attached. [The attached letter of 7 pages appears intended to support the arguments and requests stated in the main comment. These documents can be viewed in the original comment letter, available in the comment log for Cap and Trade 2018 at <https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=ct2018>.]

¹⁵⁴ California Health and Safety Code § 38562(c)(2)(D) and (H).

maximizes the chance of achieving mid-century decarbonization goals such as the 80% target put forth by Executive Order B-30-15.

To mitigate this risk, CARB should adopt policies that reduce the reserve of excess credits currently available to be banked or otherwise carried over into the late 2020's. We strongly recommend the following steps.

1. CARB should quantify the oversupply of allowances at the end of the 2018-2021 compliance period, including permits held in the auction account, APCR and entity holding accounts.
2. CARB should set a schedule for drawing down the oversupply of allowances which ensures that real emissions from capped sectors decline sufficiently for the state to meet SB 32 goals and be on a trajectory which maximizes the chance to achieve mid-century decarbonization targets including Executive Order B-30-15.
3. CARB should evaluate and take steps to draw down the over-supply including, but not limited to:
 - a. Reducing the GHG allowance budget by an amount which yields a cumulative reduction equal to the total oversupply
 - b. Decreasing the value of allowances held in the auction account, APCR, holding accounts or other accounts over time to erode the cumulative value of banked allowances until the over-supply has been reduced to zero
 - c. Retiring allowances in the holding account and/or APCR
4. CARB should periodically review the total oversupply of allowances at the end of each compliance period to determine whether it is decreasing at the rate specified in the schedule. If not, CARB should take additional steps, such as those described in part 3 above, to ensure that the cap and trade market provides real reductions in line with SB 32 targets. CARB should identify the mechanisms it will employ to make these adjustments during this rulemaking process in order to send as consistent a signal to the market as possible.

We recognize that it is difficult to design a market which can tolerate all possible sets of market conditions, participant behavior and technological development. The oversupply of allowances from 2012-2020 is a prime example of this; the effect of the recession, coupled with unexpectedly rapid development of emission-reducing technologies led to an emissions trajectory far below most reasonable projections. The presence of the allowance oversupply complicates the task of designing the post-2020 market. Rather than risk another inaccurate projection of allowance supply or demand, CARB should set a clear target for addressing this issue and build in predictable review and revision opportunities, to allow incremental course corrections during the 2020-2030 time period. Regular reviews and corrections minimize the risk that unexpected exogenous factors

lead to another mismatch between permit supply and demand and ensure that market signals are transparent and consistent, even if mid-course corrections to permit supply or allowance target levels are required.

Attachment 2: March 2, 2018 Workshop Comments

2. Several Interacting Factors Affect the Market's Ability to Drive Cumulative Reductions Expected by the Scoping Plan and Achieve the 2030 Target, Given Current Oversupply

a. CARB Should Establish A Transparent Mechanism To Assess Risks from Oversupply and Take Early, Incremental Action Correct it

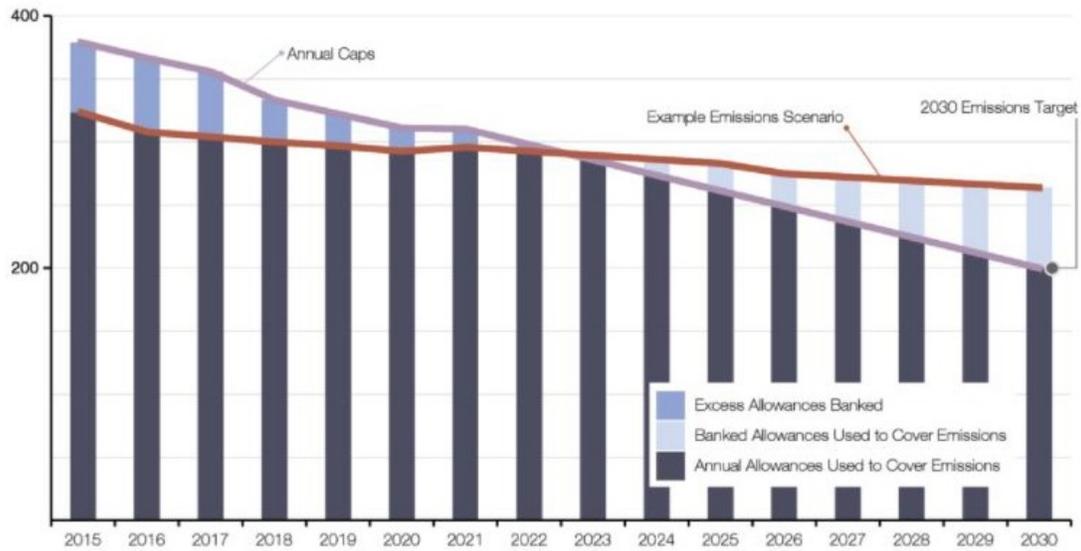
Multiple independent researchers and program stakeholders have raised the issue of over-supply of allowances relative to expected pre-2020 emissions. A potentially massive balance of allowances currently exists, spread between CARB's Auction Account, individual holding accounts and expected future allocations. While a moderate amount of banked credits can serve as a hedge against price volatility, the current over-supply of allowances greatly exceeds the amount needed as a reserve and threatens the program's ability to meet critical GHG reduction targets in 2030 and beyond. There is sufficient aggregate capacity in holding accounts for this oversupply to be held through much or all of the next decade, and there will likely be a financial incentive to do so as auction reserve prices rise and as we approach 2030.

If permits are held through the mid-2020's and deployed in the late years of the program, real emissions could be significantly above targets even while all parties are nominally in compliance with Cap and Trade rules (See figure below).¹⁵⁵

¹⁵⁵ Legislative Analysts's Office, Cap-and-Trade Extension: Issues for Legislative Oversight, Figure 3, (2017) <http://www.lao.ca.gov/Publications/Report/3719>.

Large Number of Banked Allowances Increases Risk of Exceeding GHG Target

Million Metric Tons



GHG = green house gas.

LAO

It is important that California achieve a trajectory of emissions reductions compatible with the goals of SB 32. In addition to the legal, perceptual and political problems which would arise from missing the SB 32 target, success in the global effort to combat climate change requires broad decarbonization by mid-century. If California ends the 2020's far behind the trajectory needed to achieve this global imperative, the consequences could be severe.

We acknowledge that the scenario described above is a risk, not a certainty, and the Cap and Trade program is designed to be, to a certain extent, self-correcting and resistant to a variety of external challenges. That self-correcting nature is predicated upon the system maintaining an approximate balance between the supply and demand for emission allowances, to allow the market to function in a predictable way.

CARB has asserted in workshops that it possesses the authority to adopt a variety of corrective measures, in the event that the imbalance between allowance supply and demand persists and becomes a threat to program stability. We agree that CARB has sufficient authority to take corrective action, however there may be significant temporal and procedural constraints which would affect such action. The multi-year compliance schedule means that CARB may have to wait for several years before unambiguous evidence emerges that oversupply is persisting through to later years in the program. Then any corrective action would require many months of development and public input before it could be finalized, and then may need to wait until the following compliance period before it could be implemented without disrupting market activity in the compliance period at the time. The cumulative delay to acquire unambiguous evidence of a problem, develop a solution and deploy it without disrupting market activity within

the compliance period at the time could easily add up to many years of delay, pushing the implementation date of any remedy to the last compliance period of the proposed program. If the oversupply at that time is even half of the most recent LAO estimate, that would require adjusting the market by 100 million tonnes over two or three years, a precipitous change which could significantly increase price volatility.

To avoid this problem, CARB should take preventive steps now, to address market oversupply. At minimum, CARB should establish a clear set of metrics, triggering criteria and actions to facilitate quick response to potential problems stemming from the pre-2020 imbalance between supply and demand. By creating a process now, CARB maximizes its ability to make early, gradual course corrections which will promote market stability and send a clear and consistent long-term signal to market participants, who can modify their behavior appropriately.

The imbalance between allowance supply and demand has been identified early. This offers CARB the ability to send predictable signals to the market and ensure that it can respond to the potentially developing problem with modest, incremental adjustments to the market rather than abrupt, volatility-inducing change.

We would like to reiterate our suggestion from the previous letter about how to develop a plan to support predictable, transparent and incremental responses to this problem.

[Commenter quotes content from Attachment 1: October 12, 2017 Workshop Comments provided above.] (NEXTGEN)

Comment:

This comment letter calls attention to the following points... (3) CARB should address overallocation and retire allowances...

(3) CARB has not adequately or meaningfully addressed concerns about the overallocation of allowances.

We strongly recommend that CARB take proactive and transparent action to reduce the current overallocation of allowances in the cap and trade market, including creating requirements to retire pre-2021 banked allowances after 2020.¹⁵⁶ As the Independent Emissions Market Advisory Committee (IEMAC) notes, “[e]mpirical evidence continues to indicate that entities are acquiring more allowances than they need in the short term and the private bank is growing.”¹⁵⁷ Indeed, even CARB admits that “there may be unused allowances in the early years of the Program.”¹⁵⁸ This type of overallocation and oversupply of allowances will hinder California’s ability to achieve its SB 32 mandate as

¹⁵⁶ See generally March 21, 2018 CEJA and APEN Comments.

¹⁵⁷ https://calepa.ca.gov/wp-content/uploads/sites/6/2018/09/f.i-IEMAC_Meeting_Materials_9-21-18Subcommittee_Report_on_Managing_-Allowance_Supply_9-10-18.pdf, p. 4.

¹⁵⁸ Proposed Amendment, Appendix D, p. 3.

confirmed by legislative and independent analyses.¹⁵⁹ AB 398 requires CARB to: “[e]valuate and address concerns related to overallocation in the state board’s determination of the number of available allowances.”¹⁶⁰ CARB should retire allowances to meet this mandate. We further support the IEMAC’s recommendation that CARB should “consider regulatory reforms that would automatically adjust allowances supplies in response to the accumulation of an excessively large allowance bank—that is, one that would appear to preclude the market from contributing to the attainment of long-run emission reduction goals.”¹⁶¹

These concerns were voiced by a report on overallocation by Danny Cullenward as part of the IEMAC.¹⁶² To date, it does not appear that CARB has addressed the comments Near Zero raised in its comment letter about the lack of substantive discussion on allowance overallocation.¹⁶³ As Near Zero demonstrates, failure to address these issues now will set the cap and trade program on a path to not achieve SB 32’s requirements. Indeed, as the IEMAC states: “if the allowance price is at the floor or cost containment price tiers, the supply of allowances will differ from expected levels, and the program may not ensure a specific cumulative or annual emissions outcome.”¹⁶⁴ Therefore, it is imperative that CARB address this issue to protect the state’s most disadvantaged communities. (CEJA)

Comment:

Our comments today focus on three issues: (1) the serious risk that excess allowances in the program will frustrate its ability to deliver the emission reductions called for in the 2017 Scoping Plan... and (3) the need to work toward a science- based policy strategy. In addition, we incorporate by reference an extensive set of public studies and comment letters previously submitted to ARB that are attached here as an appendix.

[The 444 page appendix of 29 documents that was submitted as an attachment to the comment letter can be viewed in the original comment letter, available in the comment log for Cap and Trade 2018 at <https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=ct2018>. Of these 444 pages,

A summary of each document’s contents that are within the scope of the 45-day amendments is included below. These documents were submitted in support of the commenter’s substantive comments in the comment letter and CARB’s response below

¹⁵⁹ See March 21, 2018 CEJA and APEN Comments, p. 4 (discussing legislative analysis and energy innovation analysis).

¹⁶⁰ Cal. Health & Safety Code § 38562(c)(2)(D).

¹⁶¹ https://calepa.ca.gov/wp-content/uploads/sites/6/2018/09/f.i-IEMAC_Meeting_Materials_9-21-18_Subcommittee_Report_on_Managing_-Allowance_Supply_9-10-18.pdf

¹⁶² https://calepa.ca.gov/wp-content/uploads/sites/6/2018/09/f.i-IEMAC_Meeting_Materials_9-21-18_Subcommittee_Report_on_Managing_-Allowance_Supply_9-10-18.pdf

¹⁶³ July 5, 2018 Near Zero Comments on the Preliminary Discussion Draft.

¹⁶⁴ https://calepa.ca.gov/wp-content/uploads/sites/6/2018/09/f.i-IEMAC_Meeting_Materials_9-21-18Subcommittee_Report_on_Managing_-Allowance_Supply_9-10-18.pdf, p. 4.

addresses the portions of the attached documents that are within the scope of the 45-day amendments.]

1. ARB has not shown how the proposed market design will keep emissions below California’s legally binding limit in 2030.

We begin with what should be a straightforward observation, but which in the present rulemaking has seemingly become an overarching controversy. The Board is legally obligated to demonstrate that its portfolio of climate regulations is consistent with the economy-wide greenhouse gas emission limits set by AB 32 and SB 32. Moreover, the Board bears the burden of showing how its proposed regulations are consistent with state law.

The burden of evidence is critical because the Board has put forward specific assertions about the role and performance of the cap-and-trade program in overall state climate strategy that appear to be inconsistent with the proposed regulations. ARB and stakeholders engaged in a process to develop the 2017 Scoping Plan, which identified a comprehensive strategy for lowering emissions to the 2030 limit set by SB 32. Under the 2017 Scoping Plan, ARB calls for the cap-and-trade program to deliver the single largest share of cumulative emission reductions over the period 2021-2030 (236 MMtCO₂e) and nearly 50% of the annual emission reductions required in 2030 (60 MMtCO₂e).¹⁶⁵

We would have preferred to reverse the sequencing of the 2017 Scoping Plan and cap-and-trade rulemaking processes to ensure that the Plan reflects the actual market design ARB adopts in the current rulemaking. Given that AB 398 required the Scoping Plan’s completion on an accelerated timeline, however, we recognized in a previous comment letter that ARB did not have much choice in the matter:

Because AB 398 requires ARB to finish the 2030 Scoping Plan by the end of 2017, ARB will need to select its preferred portfolio of policy measures for reaching the state’s 2030 climate target more than a year before the Board completes its post-2020 cap-and-trade market design process. As a result, the 2030 Scoping Plan could identify a role for the cap-and-trade program, but any such quantitative role might not reflect the final market design ARB later adopts in implementing AB 398.

We appreciate that ARB’s statutory deadlines preclude any other outcome with respect to timing. Nevertheless, we call on ARB to commit to integrating its AB 398 implementation regulations with the 2030 Scoping Plan environmental analysis. Specifically, ARB should commit to directly and quantitatively evaluating

¹⁶⁵ ARB, California’s 2017 Climate Change Scoping Plan: The strategy for achieving California’s 2030 greenhouse gas target (Nov. 2018) (hereinafter “2017 Scoping Plan”) at 28, 30.

how its AB 398 regulations will deliver the annual emission reductions expected from the cap-and-trade market in the final 2030 Scoping Plan, consistent with the SB 32 target for 2030.¹⁶⁶

In other words, we asked for ARB to ensure that the cap-and-trade regulations it adopts in the present rulemaking process are consistent with the analytical basis and expected emission reductions from cap-and-trade underpinning the 2017 Scoping Plan.

Unfortunately, ARB has not offered any analysis to indicate the proposed regulation will deliver the reductions the 2017 Scoping Plan calls for from cap-and-trade. What little analysis the Board has provided on the stringency of the market design is based on a factual error that calls into question the ability of the proposed market design to deliver emission reductions consistent with the 2017 Scoping Plan. At the same time, the Board's proposed regulations include a profound shift in emphasis about the role of carbon pricing that diverges from nearly every public statement the Board has previously made about cap-and-trade's functional role in state climate strategy. Previously, the Board assumed that the cap-and-trade program would ensure a particular quantity of reductions, supplying sufficient reductions to keep emissions below the state's mandated limits—but in the present rulemaking process the Board has shifted to describing the role of cap-and-trade as ensuring a “steadily increasing carbon price.”¹⁶⁷

Furthermore, because the proposed market design is unlikely to limit emissions as called for in the 2017 Scoping Plan, it is important to emphasize that the state's overall climate strategy may need reform. At this point, it is clear that the proposed market design bears little relationship to the strategy identified in the 2017 Scoping Plan. Should the Board finalize the market design proposed in the current rulemaking, the 2017 Scoping Plan will no longer serve as a reasonable representation of overall state climate policy strategy. Additional policy efforts would then be needed to put the state on track to achieving its 2030 climate goal.

Near Zero takes no ideological position on the appropriate balance of regulatory and market-based climate policies. We are fundamentally agnostic about policymakers' choices between reasonable alternatives. Nevertheless, we will point out when a given strategy appears likely to fail to deliver on its own terms. A weak cap-and-trade market design with excess allowances is inconsistent with the large reductions anticipated from cap-and-trade in the 2017 Scoping Plan. This disconnect calls for either reforms to the cap-and-trade program, significant new regulatory efforts, or an admission that the state policy portfolio is not on track to limit emissions in 2030 as required by SB 32...

¹⁶⁶ Near Zero, comment letter to ARB (Oct. 27, 2017) at 2.

¹⁶⁷ See, e.g., ARB, Proposed Amendments to the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation, Staff Report: Initial Statement of Reasons (Sept. 4, 2018) at 15, 171, 192.

b. ARB’s emphasis on a “steadily increasing carbon price signal” does not address the statutory requirement to address allowance overallocation nor the underlying concern that the program is insufficiently stringent to “close the gap” between California’s prescriptive measures and its 2030 emissions limit.

The proposed regulations mark a fundamental shift in the way ARB describes the role of the cap-and-trade program. In every Scoping Plan and cap-and-trade regulation to date, ARB has described the program as a “backstop” or “insurance” type of mechanism that acts to ensure that California achieves its climate goals. In each scoping plan, prescriptive measures are expected to produce the majority of needed emission reductions, and therefore reduce demand for allowances in the cap-and-trade program; meanwhile, the fixed quantity limit on allowances is intended to ensure the state’s goals are achieved no matter what emission reductions the state’s prescriptive measures accomplish.

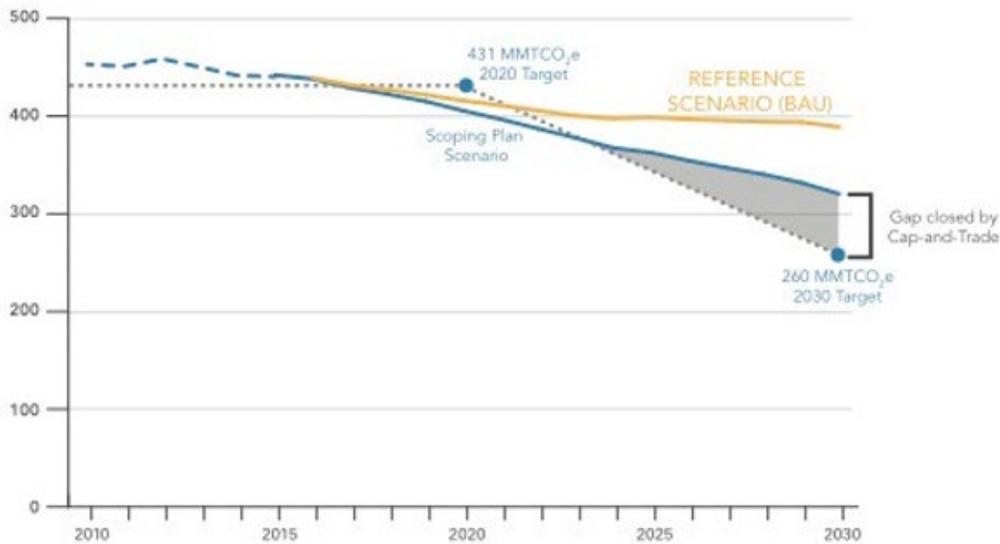
The 2017 Scoping Plan retains this conceptual and rhetorical framing. Not only does the Plan contain multiple references to the cap-and-trade program as a backstop,¹⁶⁸ but the Scoping Plan quantitatively assumes that cap-and-trade will “close the gap” between the 2030 emissions limit and projected emissions after considering the effects of California’s prescriptive climate regulations. Specifically, the Plan assumes that the cap-and-trade program will generate whatever reductions are needed in the mid- to late-2020s (see the shaded area in Figure 3).

However, as discussed below, the proposed regulations abandon this approach of assuming cap-and-trade will serve as a backstop, without offering a sufficiently rigorous alternative.

Figure 3: Scoping Plan Scenario GHG Reductions¹⁶⁹

¹⁶⁸ See, e.g., 2017 Scoping Plan at 25 (stating the Final Scoping Plan’s strategy to “Continue the existing Cap-and-Trade Program with declining program caps to ensure the State’s 2030 target is achieved”); *id.* at 26 (describing the cap-and-trade program’s capability to deliver additional reductions if planned measures are delayed or ineffective, “to ensure the 2030 target is achieved”); *id.* at 30 (describing the final Scoping Plan Scenario and cap-and-trade’s projected backstop role to “ensure the 2030 target is achieved”); *id.* at 34 (Table 4) (noting under the criterion “Ensure the State Achieves the 2030 Target” that the cap-and-trade program “scales to ensure reductions are achieved,” despite uncertainty in projected emissions and emission reductions); *id.* at 52 (“Flexibility allows the Cap-and-Trade allowance price to adjust to changes in supply and demand while a firm cap ensures GHG reductions are achieved”); *id.* 53 (“The aggregate emissions cap of the Cap-and-Trade Program ensures that the 2030 target will be met—irrespective of the GHG emissions realized through prescriptive measures”); see also ARB, Responses to questions at the Joint Hearing of the Senate Environmental Quality Committee and Senate Budget and Fiscal Review Subcommittee No. 2 (Jan. 17, 2018) at 2-3 (describing the cap-and-trade program’s ability to achieve certain reductions with prices determined by the market), http://senv.senate.ca.gov/sites/senv.senate.ca.gov/files/arb_responses.pdf.

¹⁶⁹ 2017 Scoping Plan at 30 (Figure 9).



...

c. Multiple lines of credible evidence indicate that the cap-and-trade program has too many allowances and that these excess allowances call into question the program’s ability to deliver emission reductions sufficient to keep California’s emissions below the 2030 limit.

As reviewed above in Sections 1.a.ii and 1.a.iii, multiple lines of empirical evidence and model-based projections indicate that the cap-and-trade program features a significant allowance overallocation problem. The actual private bank of allowances as of 2017 is more than two-thirds of ARB’s projected worst-case outcome in 2020, and multiple studies from the non-partisan LAO and independent research organizations have concluded that the likely bank will be substantially higher than what ARB projects.

ARB has not analyzed what impact larger allowance banks will have on the post-2020 market. Most important, ARB has never actually analyzed whether its proposed market design will lead to annual emissions in 2030 that are consistent with the 2017 Scoping Plan and SB 32’s limit. The lack of an annual analysis, as opposed to a cumulative analysis, is striking because even a market with no cumulative oversupply through 2030 could enable emissions in later years to exceed the program caps (see Figure 2, above). In turn, this outcome would put at risk the state’s ability to keep emissions below the 2030 limit...

1. Working toward a science-based policy strategy

We are mindful that this letter is critical of the analytical basis staff present for California’s flagship climate policy. And we are mindful that some Board staff have not appreciated our comments in the past. We hope that despite our different perspectives,

there are those at ARB who find our analysis useful in evaluating strategies for successfully achieving California's ambitious climate policy goals.

Our goal is to evaluate the scientific basis for California's critically important climate policy strategies. Near Zero remains agnostic as to how policymakers decide to accomplish their climate goals, but is firmly committed to evaluating the plausibility of any proposed strategy on the basis of the available evidence. Our strong preference is to work collaboratively with Board members and staff to help ARB carry out its essential work; we look forward to that opportunity and to focusing on the question of how to solve California's climate policy challenges, rather than dwelling on analytical shortcomings in the past. But where the facts don't support a particular choice—for example, inaction on addressing an obvious allowance oversupply problem—it is our goal to evaluate and communicate these findings in public policy processes.

We respect that climate mitigation policy is, even in the best of circumstances, a difficult endeavor. ARB and other state policymakers face complicated choices in determining the balance of competing policy strategies while meeting increasingly ambitious statutory mandates. That is why a clear accounting of the facts and a consistent analytical basis for action are so critical. ARB's opponents can and will challenge the Board's ability to deliver on California's climate laws. A clear basis for action that respects state law and builds an evidentiary record for action will be essential, in our view, to support the state's deep decarbonization agenda. It is also a prerequisite to a cost-effective strategy across policy instruments, a goal that will only become more important over time as California pursues deeper emission reduction targets.

Carbon pricing as a mitigation tool has proven to be more difficult to implement than originally thought. We count ourselves among those who, like ARB, understand that the economic efficiency of carbon pricing comes with additional challenges that make it difficult to rely on programs like cap- and-trade to deliver deep greenhouse gas emission reductions. Nevertheless, the Board determined in its 2017 Scoping Plan to rely on cap-and-trade for the single largest share of cumulative emission reductions in the 2020s and nearly half the required annual emission reductions in 2030.

We respectfully urge the Board to consider tightening the market design in the current proposal, which cannot reasonably be said to deliver on the role ARB identified for this program in last year's Scoping Plan...

Document Appendix

ARB documents

1. ARB, 2010 Cap-and-Trade Regulation, ISOR, Vol. 3, Appendix E: Setting the Program Emissions Cap (2010).
2. ARB, Status of Scoping Plan Recommended Measures (2010).
3. ARB, 2020 Statewide Greenhouse Gas Emissions and the 2020 Target (2014).

4. ARB, Supporting Material for Assessment of Post-2020 Caps (2018).

[The CARB documents included in the commenters' attachments are already incorporated into this rulemaking in the ISOR either directly or by reference to more recent materials. These documents either pre-date the current rulemaking or are part of the rulemaking, and the documents do not suggest changes to the adopted amendments. As such, no further summary or response is required for these documents.]

Independent studies

5. Charles D. Kolstad and Emily Wimberger, AB 32 Discussion Series: Information Needs for Analysis of Effectiveness of the Cap-and- Trade Regulation (Apr. 2012)

[The 2012 AB 32 Discussion Series: Information Needs for Analysis of Effectiveness of the Cap-and-Trade Regulation attachment was a summary of a 2012 symposium on measuring outcomes regarding AB 32 and the Cap-and-Trade Program. Symposium participants: highlighted that Cap-and-Trade should be modelled as a component of the broader suite of AB 32 measures (i.e., the adopted Scoping Plan measures); commented on opportunities for ongoing monitoring for, and ex-post evaluation of, emissions leakage; and discussed challenges in measuring and calculating the health impacts of AB 32.]

6. Legislative Analyst's Office, Letter to the Hon. Christina Garcia re: excess allowances in the cap-and-trade program (June 26, 2017)

[In the June 26, 2017 *Legislative Analyst's Office, Letter to the Hon. Christina Garcia re: excess allowances in the cap-and-trade program* attachment "[the Legislative Analyst Office (LAO)] estimates the range of the cumulative allowance oversupply in the cap-and-trade program through 2020[to be between 100 and 300 million allowances, with it most likely being roughly in the middle of that range. LAO also assesses] the impact of allowing this oversupply to carry over into a post-2020 program on (1) future greenhouse gas (GHG) emissions and (2) near- and long-term allowance prices[, and assesses] the impact of alternative approaches to address[] the oversupply of allowances and the connection between the current program and a post-2020 program.] LAO provides an analysis based on two scenarios: a high allowance demand scenario, and a low allowance demand scenario.

LAO provides a summary of methods by which adjustments to the Program could affect emissions and prices. These methods are: "[1] no banking, [2] limited banking (for example, banking allowed for five years), [3] reduce the number of allowances available by retiring unsold allowances and / or reducing [the] number of allowances issued in future years, [4] make oversupply available only at specified prices ('speed bumps,' for example), [5] make current APCR allowances available at lower prices (such as offering at regular auction or at 'speed bumps')."]

7. Danny Cullenward, Mason Inman, and Michael Mastrandrea, California's climate emissions are falling, but cap-and-trade is not the cause. Near Zero Research Note (Nov. 10, 2017).

[In November 10, 2017's research note, "California's climate emissions are falling, but cap-and-trade is not the cause," the authors claim electricity sector emissions have declined primarily as a result of other policies, and that increases in 2016 fuel sector emissions will need to be reversed in the future in order to drive reductions through the Program. The authors also comment that "[t]he primary reason the cap-and-trade program has not played a large role in driving emission reductions to date is that emissions continue to fall below program caps, leading to a buildup of unused allowances in private-sector and ARB accounts that depresses current market prices and enables covered emitters to maintain their emissions farther into the future than post-2020 program caps might nominally suggest. Whether and to what extent ARB addresses the market oversupply problem in its AB 398 rulemaking process will have important implications for the market price and stringency of the overall program going forward."]

8. Chris Busch, Oversupply grows in the Western Climate Initiative carbon market: An adjustment for current oversupply is needed to ensure the program will achieve its 2030 target. Energy Innovation LLC Report (Dec. 2017)

[The document argues the Cap-and-Trade Program is "oversupplied" based on the document's analysis of cumulative private banking and allowances held in State accounts. The document states that without an adjustment to allowance supply, "oversupply and expected banking is large enough to allow for significantly more emissions than intended under the 2017 Scoping Plan, cutting into planned cumulative emissions and possibly leaving 2030 emissions above the SB 32 target."

The document provides two recommended adjustments. First, the document recommends "California and the WCI should adjust caps for 2021-2030 downward in an amount equal to the sum of 2020 and earlier vintage allowances that remain privately held after emitters have finished submitting allowances for compliance through the end of 2020." Second, the document recommends "CARB and the WCI should also adopt a specific schedule for program review. These regular reviews – we suggest at the end of each compliance period – should evaluate cap-and-trade program performance. The October draft of the 2017 Scoping Plan increases the emphasis on periodic reviews but is short on specifics, beyond noting the five-year Scoping Plan cycle."]

9. Legislative Analyst's Office, Cap-and-Trade Extension: Issues for Legislative Oversight (Dec. 2017)

[In the document, the Legislative Analyst's Office (LAO) summarized implementation decisions CARB would need to make during the current rulemaking that LAO viewed as having the potential to affect Program outcomes. LAO also outlined the requirements under AB 398 for reporting the Program's progress including, among others, IEMAC

annual reports and a report by CARB by the end of 2025 on the “progress toward meeting [the] GHG limits; [the] leakage risk posed by Cap-and-Trade regulation; and recommended changes needed to reduce leakage, including [the] potential for border carbon adjustment.”

LAO also listed items potentially requiring legislative review upon completion of the current amendments. As identified by LAO, these were:

- Setting post-2020 caps and banking rules consistent with the ability to meet the 2030 target;
- Evaluating CARB’s assessment of the potential for a large number of banked allowances to be carried forward into the post-2020 period and how it could affect the state meeting its 2030 GHG target;
- Evaluating different options for adjustments to address a large number of banked allowances, if it is determined that it would create a significant risk of not meeting state’s 2030 target;
- Ensuring there is a clear process in place to make future adjustments, if needed;
- Evaluating whether CARB’s proposed price ceiling weighs different trade-offs, such as interests in containing costs versus certainty that targeted emissions levels will be achieved, in accordance with legislative priorities;
- Evaluating whether the number of allowances in each containment point is consistent with legislative interest in slowing price increases at intermediate levels, while also limiting emissions;
- Evaluating whether price containment points are set at levels where the Legislature is willing to allow greater emissions in exchange for limiting price increases;
- Ensuring CARB’s identification of projects with direct environmental benefits is consistent with legislative intent;
- Ensuring the limits on non-direct offset projects is implemented in a way that is consistent with legislative intent; and
- Evaluating whether CARB direction to maintain 100 percent IAFs through 2020 balances leakage risk and incentives for GHG-reductions in a way that is consistent with legislative priorities.

LAO also listed considerations in implementing the IEMAC including if the legislature should provide direction on:

- The scope of climate change policies under committee jurisdiction; and

- Whether the committee is intended to “(1) advise on future program design issues (such as how to manage an oversupply of allowances) and/or (2) evaluate past program performance.”]

10. Chris Busch, Technical Appendix to Blog Post “Analyzing the Likely Impact of Oversupply on California’s Carbon Market Must Consider State’s 2030 Emissions Goal and Potential for Clean Tech Breakthroughs,” Energy Innovation LLC (Jan. 10, 2018)

[The document critiques a blog authored by Professors Borenstein and Bushnell (BBB)¹⁷⁰ as assuming an “overly constrained in terms of the possible [GHG reductions responsive to price].” The document contends this assumption supports BBB’s conclusion that “adjusting for oversupply would not affect greenhouse gas emissions as much as a straightforward consideration of the change in allowance supply would indicate.”]

11. Danny Cullenward, Mason Inman, and Michael Mastrandrea, Removing excess cap-and-trade allowances will reduce greenhouse gas emissions: A response to Severin Borenstein and Jim Bushnell. Near Zero Research Note (Jan. 11, 2018)

[The document critiques the same blog as above, authored by Professors Borenstein and Bushnell (BBB).¹⁷¹ The document’s unique points of potential relevance to the current rulemaking, in addition to those from document 10, are:

- CARB should explicitly identify the emissions reductions eligible for backfilling Price Ceiling Units; and
- CARB has not yet evaluated potential for banked allowances to cause the program to exceed annual caps, and the SB 32 target.]

12. Environmental Commissioner of Ontario, Ontario’s Climate Act: From Plan to Progress, Appendix G: Technical Aspects of Oversupply in the WCI Market (Jan. 30, 2018)

[The Environmental Commissioner of Ontario assessed allowance supply in the WCI market. The report stated:

- Cumulative instruments available for compliance could exceed emissions obligations until after 2020, though “this could change at any time... [given] factors...[including] global economic factors, local temperatures, technology changes, rate of adoption, etc.”;
- To reduce allowances, the Ontario legislature should work with CARB to:

¹⁷⁰ <https://energyathaas.wordpress.com/2018/01/02/californias-carbon-cap-is-not-in-jeopardy-because-its-not-really-a-cap/>

¹⁷¹ Ibid.

- Lower emissions caps;
- Move surplus allowances to the reserve; and/or
- Fully retire surplus allowances;
- The Regional Greenhouse Gas Initiative (RGGI) provides an example of reducing allowances in a multi-jurisdictional emissions Program.]

13. Danny Cullenward, Mason Inman, and Michael Mastrandrea, Interpreting AB 398’s carbon offsets limits. Near Zero Research Note (Mar. 15, 2018)

[The document provides a background on the DEBS provisions of AB 398. The document recommends CARB apply offset limits based on emissions years, not compliance events. The document also recommends CARB exclude offsets from being eligible for DEBS based solely on greenhouse gas emissions from a determination of an offset project’s DEBS. The document also asserts offset projects provide no GHG benefits net of the use of their offset credits by covered entities.]

14. Danny Cullenward, Mason Inman, and Michael Mastrandrea, Implementing AB 398: ARB’s initial post-2020 market design and “allowance pool” concepts. Near Zero Research Note (Mar. 16, 2018)

[The document summarizes and critiques a CARB document contained in Appendix E:¹⁷² “Preliminary Concepts: Price Containment Points, Price Ceiling, and Allowance Pools. Feb. 2018. Hereafter, this document is referred to as CARB Preliminary Concepts Paper. The document states:

- the CARB Preliminary Concepts Paper is an insufficient analysis of allowance supply in the context of AB 398’s requirement that CARB evaluate and address as appropriate “concerns related to overallocation;”¹⁷³
- the CARB Preliminary Concepts Paper’s proposal to remove 75.1 million allowances from auction supply is too small relative to the commenters’ and Chris Busch’s 2017 (document 8) estimate of allowances in excess of compliance obligations;
- the Program does not have mechanisms for managing transitions from prices near the auction reserve price to prices near the new post-2020 Reserve tiers and price ceiling prices;
- CARB should implement “technical reforms that could enable dynamic adjustments to program allowance budgets and/or banking rules that respond... based on empirical metrics;

¹⁷² <https://www.arb.ca.gov/regact/2018/capandtrade18/ct18pprocess.pdf>

¹⁷³ HSC 38562(c)(2)(D)

- Information released in the future by CARB should illustrate how the adopted Regulation and other adopted Scoping Plan measures will meet the SB 32 target;
- CARB’s proposal does not mitigate volatility between current prices and the new post-2020 Reserve tier prices; and
- CARB should both reduce allowance availability, and implement cost containment price paths that start at lower initial prices, and increase over time.]

15. Mason Inman, Danny Cullenward, and Michael Mastrandrea, Ready, fire, aim: ARB’s overallocation report misses its target. Near Zero Research Note (May 7, 2018)

[The document critiques CARB’s April 2018 Supporting Material for assessment of post-2020 Caps (April Concept Paper). With respect to the current rulemaking, the document recommends:

- The April Concept Paper should analyze what will happen in the year 2030 with respect to the SB 32 emissions goal;
- The April Concept Paper contains a flaw in its calculations; and
- The document does not satisfy AB 398’s requirement that CARB evaluate and address as appropriate “concerns related to overallocation.”¹⁷⁴]

16. Mason Inman, Danny Cullenward, and Michael Mastrandrea, California’s “self-correcting” cap-and-trade auction mechanism does not eliminate market overallocation. Near Zero Research Note (May 23, 2018)

[With respect to the current rulemaking, the document discusses the 24-month unsold allowance mechanism adopted in 2017. Under this mechanism, allowances unsold for 24 months are transferred away from auction supply, and placed into cost containment. With respect to the current rulemaking, the document:

- States the 2016 through 2017 undersubscribed auctions are likely to remove at least ~38 million allowances via the 24-month unsold mechanism;
- States the unsold mechanism will not remove sufficient allowances on its own to address the commenter’s perceived volume of excess California allowances; and
- Recommends that as CARB sets the prices of the new post-2020 Reserve tiers, CARB consider that the environmental benefit of removing unsold allowances from auction supply will be negated if they are accessed during a potential tightening of the market.

¹⁷⁴ HSC 38562(c)(2)(D)

- States the current rulemaking should demonstrate how the transfer of these unsolds to the new post-2020 Reserve tiers and / or Price Ceiling will affect meeting the SB 32 target.]

17. Michael Mastrandrea, Danny Cullenward, and Mason Inman, Ontario's exit exacerbates allowance overallocation in the Western Climate Initiative cap-and-trade program. Near Zero Research Note (Jul. 16, 2018)

[The document comments that prior to the freeze of transfers between California and Québec, and Ontario on June 15, 2018, a net flow of 13,186,967 allowances had occurred from Ontario into the California and Québec market. The document comments that it is not possible to determine the portion of this flow based on auction versus secondary market activity for certain vintages based on public data alone.]

18. Mason Inman, Michael Mastrandrea, and Danny Cullenward, Tracking banking in the Western Climate Initiative cap-and-trade program. Near Zero Research Note (Sept. 12, 2018)

[The document develops a methodology for tracking banked allowances. The document states:

- Banking metrics allow for dynamic cap adjustments such as those implemented by the Regional Greenhouse Gas Initiative (RGGI) and the European Union's Emissions Trading System (EU ETS);
- CARB could consider implementing such mechanisms; and
- The number of compliance instruments in the California market exceeds demand, creating a bank of allowances that may jeopardize meeting the 2030 target.]

Legislative oversight hearing materials

Senate Environmental Quality Committee and Budget and Fiscal Review Subcommittee No. 2 Hearing on Document, "California's Cap-and-Trade Program: The Air Resources Board's 2018 Scoping Plan" (Jan. 17, 2018)

19. SEQ, Background Document

[The document provides background on the Cap-and-Trade Program and Scoping Plan process.]

20. ARB, Responses to Questions

[The CARB document provides answers to committee questions on the Cap-and-Trade Program and Scoping Plan process. The document pre-dates the current rulemaking, and does not suggest changes to the adopted amendments. As such, no further summary or response is required for this document.]

Joint Legislative Committee on Climate Change Policies, Informational Hearing: Cap and Trade (May 24, 2018)

21. JLCCCP, Background Document

[The document provides background for a hearing conducted by the Joint Legislative Committee on Climate Change Policies on May 24, 2018. Among a general summary and background of the Cap-and-Trade Program, the document states “[o]ffset projects do not generate net greenhouse gas reductions because project-level gains are zeroed out when regulated companies use the associated offset credits to increase their own emissions, resulting in no direct environmental benefit outside of potential air quality or water quality impacts.” The document also states CARB staff was, as of May 24, 2018, “considering allowing all offset credits issued before the passage of AB 398 to be considered as direct environmental benefits... Previously issued credits that do not earn a direct environmental benefit certification once the regulation is finalized can still be used for compliance purposes in the program, but compliance entities may have to secure additional credits that meet the definition of direct environmental benefit to meet the requirements of AB 398.”]

22. Legislative Analyst’s Office, Handout

The Legislative Analyst’s Office provided the following summary of actions the legislature might take with respect to CARB’s implementation of AB 398.

["Consider Directing CARB to Provide Additional Evidence That Current Program Is Consistent With Legislature’s 2030 GHG Goals [including having CARB:]

- explain how the current program is likely to put the state on track to meet its annual 2030 limit;
- evaluate different options for adjustments to address a large number of banked allowances; and
- establish clear criteria that will be used to make future adjustments, if needed...

CARB staff [have] estimated how the current program might affect *cumulative* emissions through 2030, but has not [demonstrated how the Program will] put the state on track to meet its 2030 *annual* target...

Options to increase the stringency of the program include moving allowances from the regular auctions to:

- the price ceiling; and/or
- the ‘speed bumps...’

These options have a trade-off of putting upward pressure on prices. However, decisions about program caps and allowance supply should be guided primarily by what is needed to meet the state’s environmental goals, while concerns about the risks of

program costs exceeding acceptable levels should be addressed primarily through setting the price level for the ceiling (discussed below) and speed bumps.”

The document also suggests that the legislature might:

- Consider whether CARB’s Price Ceiling price is consistent with legislative priority; and
- Consider whether CARB’s Price Ceiling price might affect linkage.]

23. Danny Cullenward, Testimony

[The commenter, who notes he is testifying in his personal capacity, and not as an IEMAC member, recommends:

- CARB interpret AB 398 as requiring post-2020 offset usage limits to be applied based on emissions year, not compliance events;
- DEBS not be awarded to offset projects on the basis of project-level greenhouse gas emissions or emissions reductions;
- CARB’s April 2018 Supporting Material for Assessment of post-2020 Caps (April Concept Paper) did not focus on annual emissions in 2030, and thus was non-responsive to the commenter’s concern on overallocation;
- CARB’s future analyses should focus on overallocation in the context of annual emissions in 2030, rather than cumulative emissions through the 2020s; and
- CARB’s April 2018 Supporting Material for Assessment of post-2020 Caps (April Concept Paper) contained a flaw in its logic.]

24. Danny Cullenward, Letter to Hon. Eduardo Garcia and Sen. Henry Stern re: ARB’s testimony at the May 24, 2018 JLCCCP hearing (May 30, 2018)

[The document from Danny Cullenward primarily critiqued an informal workshop document published by CARB in advance of the formal rulemaking: CARB’s April 2018 Supporting Material for Assessment of post-2020 Caps (April Concept Paper).

- The adopted 2017 Scoping Plan’s role for the Cap-and-Trade Program is jeopardized by excess allowances;
- The April Concept Paper contains an error in its calculations;
- Recommends implementation of a dynamic cap adjustment mechanism, similar to those implemented in the Regional Greenhouse Gas Initiative, and the European Union Emissions Trading System; and
- Implementation of current rulemaking must be consistent with directives of AB 32, SB 32, AB 197, and AB 398.]

Comment letters

25. Michael Mastrandrea and Mason Inman, The role of cap-and-trade in meeting California's 2030 climate target, Near Zero comment letter to ARB re: October 2017 Scoping Plan and cap-and-trade workshops (Oct. 27, 2017)

[The document makes the following recommendations regarding the 45-day amendments:

- CARB should integrate the adopted Regulation into its Scoping Plan analysis, including:
 - evaluating how the adopted Regulation, rather than the adopted Scoping Plan's Cap-and-Trade Program, will support meeting the SB 32 target; and
 - comparing annual reductions expected from the adopted Regulation with reductions from the Scoping Plan's PATHWAYS projections;
- CARB should demonstrate how its 2030 Scoping Plan delivers on the SB 32 annual target for the year 2030, not an estimated reduction in cumulative emissions relative to a modelled baseline.]

26. Danny Cullenward, Mason Inman, and Michael Mastrandrea, Near Zero comment letter to ARB re: March 2018 cap-and-trade workshop (Mar. 16, 2018)

[The document makes the following recommendations regarding the 45-day amendments:

- Substantial banking has occurred at a different level than that projected by CARB;
- CARB should develop a post-2020 market design that manages a transition from today's prices to the higher prices that are likely needed to achieve California's 2030 target;
- CARB should reduce the availability of past and future allowances via some combination of:
 - Restricting allowance budgets;
 - Implement banking rules that discount allowances; and / or
 - Implementing other approaches to restricting allowance availability developed in a collaborative fashion with stakeholders;
- Reductions in the effective allowance budgets should be combined with lower price containment points, and a price ceiling that starts at a lower initial price and increases more rapidly over time;
- CARB should apply offset limits based on emissions years, not compliance events;
- CARB should exclude offsets from being eligible for DEBS based solely on greenhouse gas emissions from a determination of an offset project's DEBS; and

- Evaluating how the adopted Regulation, rather than the adopted Scoping Plan’s Cap-and-Trade Program, will support meeting the SB 32 target.]

27. Danny Cullenward, Mason Inman, and Michael Mastrandrea, Near Zero comment letter to ARB re: April 2018 cap-and-trade workshop (May 10, 2018)

[The document makes the following recommendations regarding the 45-day amendments:

- CARB’s April 2018 analysis supporting the post-2020 Caps¹⁷⁵ should be redone, and should evaluate allowance budget modifications conducted by the Regional Greenhouse Gas Initiative (RGGI) and the European Union Emissions Trading System (EU ETS);
- CARB should retire allowances:
 - In proportion to forecasts of “allowance overallocation” conducted in independent studies; and / or
 - Through predefined banking metrics and automated program budget adjustments;
- CARB should apply offset limits based on emissions years, not compliance events; and
- CARB should exclude offsets from being eligible for DEBS based solely on greenhouse gas emissions from a determination of an offset project’s DEBS.]

28. Danny Cullenward, Mason Inman, and Michael Mastrandrea, Near Zero comment letter to ARB re: June 2018 cap-and-trade workshop (Jul. 5, 2018)

[The appendix document included the following recommendations and comments relevant to the current rulemaking:

- Substantial banking has occurred at a different level than that projected by CARB;
- CARB’s April 2018 Supporting Material for Assessment of post-2020 Caps (April Concept Paper) did not focus on annual emissions in 2030, and thus was non-responsive to the commenter’s concern on overallocation;
- CARB’s future analyses should focus on overallocation in the context of annual emissions in 2030, rather than cumulative emissions through the 2020s;
- CARB’s April 2018 Supporting Material for Assessment of post-2020 Caps (April Concept Paper) contained a flaw in its logic; and

¹⁷⁵ Included in Appendix E to the current rulemaking’s Initial Statement of Reasons: <https://www.arb.ca.gov/regact/2018/capandtrade18/ct18pprocess.pdf>

- CARB could implement dynamic cap adjustments similar to reforms from the Regional Greenhouse Gas and European Union Emissions Trading Systems to reduce allowance supply.]

Independent Emissions Market Advisory Committee Reports

29. 2018 IEMAC Report (Oct. 22, 2018)

[The IEMAC Report is integrated into the comment letters throughout this Final Statement of Reasons. Thus, see the report throughout this document.]

(NEARZERO)

Comment:

We agree that there is likely an oversupply of allowances in the market currently and in the future (post-2020). Following the 9-21-18 meeting, we were provided with additional data from IEMAC on this subject and we agree that further investigation or a more detailed explanation of future projected supply by CARB is warranted. (DENTONS)

Comment:

In order to meet our state’s greenhouse gas emissions goals, it is essential that the California Air Resources Board (CARB) [drastically - CLIMATEREALITY, WEBER, HERNANDEZ] reduce the emissions cap used in California’s cap and trade (C&T) program. As has been reported by independent analyses, the annual caps through the year 2030 are actually higher than current projected emissions.^{176 177 178} - SILICONVALLEYCOALITION] This [over-allocation of credits – SILICONVALLEYCOALITION] means that the cap and trade program will likely end up having no effect on state emissions at all.

[In other words, CLIMATEREALITY, SILICONVALLEYCOALITION, WEBER] assuming that the C&T program didn’t exist, emissions from the covered sectors would already be lower than the proposed caps leading up to 2030. [It’s as if a law stated that you were allowed to pollute 100 units next year, even though your best analysis predicts that you weren’t going to pollute more than 90 units to begin with. Such a law would have no effect on behavior. The correct remedy would be to set the allowed pollution rate to something like 80 units—otherwise you would simply continue to pollute at 90 units annually. – CLIMATEREALITY, WEBER]

[The IPCC has estimated that annual emissions need to be reduced by around 50% by 2030 to avoid catastrophic effects due to climate change. Since GHGs remain in the atmosphere to up to thousands of years, more emissions in this decade will mean we

¹⁷⁶ <http://wp.nearzero.org/wp-content/uploads/2018/07/Near-Zero-comment-letter-June-2018-workshop.pdf>

¹⁷⁷ <https://calmatters.org/articles/checking-the-math-on-cap-and-trade-some-experts-say-its-not-adding-up/>

¹⁷⁸ <https://lao.ca.gov/Publications/Report/3719>

need to make deeper reductions later, even needing to go to negative emissions. It is crucial that California meet our targets in this decade, especially since our state is on the forefront of this effort. – SILICONVALLEYCOALITION]...

[We are residents of California, – CLIMATEREALITY, WEBER, SILICONVALLEYCOALITION] [As a resident of California, – HERNANDEZ] aware of our unparalleled role on the front lines of the climate war. There is no other American state that has a size, reputation, regulatory reach, and innovation ecosystem that can counteract the federal government's abhorrent climate policies.

[Therefore – WEBER, HERNANDEZ, SILICONVALLEYCOALITION] We have a CRITICAL [unique – WEBER, HERNANDEZ, SILICONVALLEYCOALITION] responsibility to get the policies right. We request that (a) CARB [drastically lowers emissions caps CLIMATEREALITY, WEBER, HERNANDEZ] [lower emission caps to a level that will ensure that we meet emission 2030 emission goals... This is about more than just emissions from the Golden State itself—the rest of the world relies on us to set a new gold standard for climate policies, which we can begin to do by fixing the serious flaws in current policy. – SILICONVALLEYCOALITION)]...

(CLIMATEREALITY, WEBER, HERNANDEZ, SILICONVALLEYCOALITION) [Similar comments were submitted by all four of these commenters. Citations above indicate which text was included in which commenter's letter.]

Comment:

The real issue is that Cap-and-trade is just that a trading system with credits traded at state- sanctioned auctions and on secondary markets this only benefits the polluter/companies not the public. The question is here how do the states set the limits for the polluters? It is stated in the background information I received on this matter that some companies have not yet needed to use up the allowances to stay within state emissions limits and probably won't have to in the next couple of years, according to some analysts, who estimate there are hundreds of millions of unused credits in the system.

The result they say is a glut of credits that could allow businesses to keep polluting past state limits in later years after the overall cap becomes more restrictive. Unless the oversupply is addressed, experts say, polluters will have no incentive to cut emissions to required levels by 2030; instead, industries could continue polluting and use banked allowance to offset their emissions and technically keep them under the cap.
(HELGERSON)

Response: Multiple commenters offer various reasons they believe the Cap-and-Trade Program should make fewer allowances available to market participants during the post-2020 time period. These include a desire for more ambition than is statutorily mandated by SB 32 and concerns with allowance supply as a rationale to reduce allowance supply and increase allowance prices. See

Responses to 45-Day Comments B-1.2 and B-2.1 for a discussion of staff's position that the Program's ambition and allowance supply are appropriate at this time. See also Response to 45-Day Comment B-1.3 for a discussion of the adopted Regulation's conformance with the requirements of AB 197.

Some commenters state that CARB has not analyzed how the Program will ensure reductions to achieve the 2030 target. See Response to 45-Day Comment B-1.3 for a discussion of the modelling conducted in support of the Program, and how the Program's steady price signal prompts reductions of emissions now and in the post-2020 Program. See also Responses to 45-Day Comments B-2.5 and B-2.6 for a discussion of the benefits of additional reports on, and metrics for adjustments to, allowance supply. See also Response to 45-Day Comment B-1.7 for a discussion of disadvantaged communities and Cap-and-Trade.

Staff disagrees with the commenters' assertions that CARB has not shown how the adopted market design will help California achieve the SB 32 target. The adopted amendments, along with the amendments that came into effect in 2017, make fundamental changes to allowance supply that address the issues raised in the comment. See Response to 45-Day Comment B-2.1 for a discussion of these changes. See also Response to 45-Day Comment B-1.3 for details on the uncertainty analysis conducted as part of the 2017 Scoping Plan. As stated in Response to 45-Day Comment B-1.3, using a Monte Carlo simulation, the uncertainty analysis concluded a Scoping Plan with a Cap-and-Trade Program has the highest likelihood of achieving California's 2030 GHG target.¹⁷⁹

One commenter states the IEMAC provided them with additional data on allowance supply that led them to the conclusion that further analysis should be conducted on likely oversupply. Staff is unaware of what this data consisted of and notes the IEMAC took no official position on whether or not CARB needed to address a problem on "oversupply." As stated above, see Response to 45-Day Comment B-1.3 for a discussion of the analyses conducted as part of this rulemaking, and Responses to 45-Day Comments B-1.3 and B-2.1 for why CARB staff does not believe modifications to the allowance budget are warranted at this time, and what additional monitoring will entail. As discussed in Response to 45-Day Comment B-1.3, CARB staff has been directed to continue monitoring allowance supply, and to quantify and report to the Board, by no later than December 31, 2021, the volume of unused allowances from 2013 to 2020, including volumes held in private accounts, and the potential for unused allowances to hinder the ability of the Program to help achieve the SB 32 target.

¹⁷⁹ See *Uncertainty Analysis Results*, p90
https://www.arb.ca.gov/cc/scopingplan/2030sp_appe_econ_final.pdf

The Board further directed that CARB staff will hold a workshop in 2019 to discuss potential methodologies to evaluate this topic.

One commenter offers a strategy of retiring the 52.4 million allowances that were instead placed in the new post-2020 Reserve tiers in order to tighten the market. The commenter's assertion is that the price ceiling provides absolute price protection so there should be less concern with taking steps that tighten the market. While staff agrees that AB 398 requires a price ceiling to effectively contain costs, as assessed in the SRIA to this rulemaking, the cost to covered entities would still be higher if the price ceiling is reached. Thus, CARB staff designed the revisions to incorporate a price ceiling to place a limit on costs but included other price containment mechanisms such that if the market tightens there is a gradual increase in allowance prices over a longer period of time, giving time for new reduction opportunities to be identified and implemented along the way and potentially avoiding prices at the price ceiling itself.

As noted in the SRIA, the new post-2020 Reserve tiers and price ceiling work in coordination with other features of the Program that provide compliance flexibility to meet the 2030 target reliably and cost effectively. These include banking of allowances (including unused allowances that can be banked forward into the post-2020 Program based on early reductions), use of a limited number of offsets, multi-year compliance periods, and the broad scope that identifies a diverse set of sources with a range of emission reduction opportunities. Additionally, the Program includes industrial allocation and the residential climate credit, which work to reduce the cost burden of allowance prices to covered entities and residents of the state.

As further described in the SRIA and Responses to 45-Day Comments B-1.3 and B-2.1, removing or expiring any allowances that could be purchased as part of an auction would remove lower cost allowances from the Program, increasing scarcity, and potentially requiring compliance entities to purchase higher priced allowances in the price containment points and the price ceiling earlier than anticipated.

The addition of a price ceiling does not obviate the need to design a market that allows for efficient price discovery and identification and action on the lowest cost GHG reduction opportunities first. Additionally and as discussed in Response to 45-Day Comment B-2.5, per the existing Regulation and AB 398, during periods of low demand for allowances, any unsold allowances are removed from the market. This self-ratcheting mechanism is meant to ensure low demand for allowances does not mute the carbon price signal.

As noted in Appendix D to the ISOR, for the post-2020 period of the Program, Section 95871(a) and Table 8-2 of the Regulation designate 52.4 million allowances from the years 2021 through 2030 to the post-2020 Reserve. These

allowances are removed from general circulation and are only available for purchase by covered entities at pre-determined higher prices. These allowances reflect what CARB believes should be removed from general circulation to account for the fact that the 2020 emissions will be lower than the 2020 annual cap based on the most recent modeling completed for the 2017 Scoping Plan and the GHG Inventory.¹⁸⁰ While there is still uncertainty as to future emissions, the 52.4 million allowances reflect staff's accounting for expected lower emissions in 2021 with a straight line to the cap in 2030. The 52.4 million allowances account for approximately 2 percent of post-2020 allowances. Importantly, the pre- and post-2020 methodologies are consistent in that allowances are taken from within the annual caps (and general circulation) to populate the Reserve. This ensures that even if the Reserve is utilized, emissions will still be within the cap.

CARB disagrees with one commenter's assertion that the market is over-allocated because recent emissions are below forecasts. Having emissions below the target is a desirable outcome as it indicates emissions are not occurring, even if they are allowed, because once emitted, those gases can have climate change forcing impacts for decades. What matters is that our actual emissions continue to decline, while the economy steadily transforms to lower carbon energy, and we are on track to achieve our statutory mandates. Annual aggregate emissions fluctuate, due to myriad factors such as gasoline consumption, the shares of hydroelectricity versus fossil fuel combustion in electricity generation, and the level of economic activity. As discussed in Response to 45-Day Comment B-2.8, CARB chose multi-year compliance periods to account for these fluctuations, rather than annual compliance periods. See Response to 45-Day Comment B-2.1 for a further discussion of allowance supply.

One commenter also refers to an analysis completed by the Legislative Analyst's Office in 2017. Staff would note that the hypothetical scenario in the graph assumes a statewide 2030 target of about 200 MMTCO_{2e}. The statewide target in 2030 is actually 260 MMTCO_{2e}. In addition, the LAO analysis did not factor in some of the self ratcheting design features of the Program, and did not use GHG emissions estimates for 2021 through 2030 that were developed to understand how complementary policies would impact emissions. Many of these data points were not available when LAO did their analysis and the analysis included in Appendix D does account for many of these new factors and information, while providing a more comprehensive assessment of a potential post-2020 emissions scenario.

Response to Commenter Appendix

¹⁸⁰ See <https://www.arb.ca.gov/cc/inventory/inventory.htm>.

The appendix submitted by NearZero is a collection of letters, blog postings, online reports, CARB documentation from previous rulemakings, and early analyses by the Legislative Analyst Office that are being used to support the commenter's oft-repeated position that the Cap-and-Trade Program is overallocated and allowances should be removed from the system now. In addition, the commenter critiques anticipated applications of AB 398 offset directives by CARB, many of which did not ultimately materialize in the adopted Regulation. Many of the third-party documents were developed in advance of the CARB analysis of this rulemaking and did not reflect or benefit from the best available data that CARB was able to use in its own analysis, such as the emissions modeling used for the 2017 Scoping Plan. In addition, CARB's analysis, included in Appendix D of the ISOR, assessed the broader question presented by AB 398 of looking at potential implications post-2020 of existing allowance supply. CARB sought to more comprehensively address this question and refers the comment to Appendix D of the ISOR and to Responses to 45-Day Comments B-1.3 and B-2.1.

A response to each document's contents that are within the scope of the 45-day amendments is included below.

CARB Documents (Documents 1-4)

CARB documents included in the commenters' attachments are already incorporated into this rulemaking in the ISOR either directly or by reference to more recent materials. These documents either pre-date the current rulemaking or are part of the rulemaking, and the documents do not suggest changes to the adopted amendments. As such, no further summary or response is required for these documents.

5. Charles D. Kolstad and Emily Wimberger, AB 32 Discussion Series: Information Needs for Analysis of Effectiveness of the Cap-and- Trade Regulation (Apr. 2012)

See Response to 45-Day Comments B-1.3, B-2.5, and B-2.6 on publicly available CARB reports. See Response to 45-Day Comments B-1.3 and B-2.1 for a further discussion of CARB modeling of the Program, including the Scoping Plan process that modeled the measures contained within the adopted 2017 Scoping Plan as a whole. See Responses to 45-Day Comments B-3.14 and C-1.4 for a discussion of ongoing analysis of emissions leakage, and a discussion of previously commissioned independent economic analysis of emissions leakage, including the international and domestic leakage reports, completed in 2016.¹⁸¹ See Response to 45-Day Comments B-3.3 for a discussion related to the intent of the program. See Response to 45-Day Comments B-1.7 for a

¹⁸¹ May 18 2016 – Public Workshop on Emissions Leakage Studies for Cap-and-Trade Program Materials: <https://www.arb.ca.gov/cc/capandtrade/meetings/meetings.htm>

discussion of disadvantaged communities and the Cap-and-Trade program. With regards to a broader analysis of air quality and health analysis pertaining to AB 32, see Appendix G to the 2017 Scoping Plan for a discussion of these topics under the adopted 2017 Scoping Plan.¹⁸²

6. Legislative Analyst's Office, Letter to the Hon. Christina Garcia re: excess allowances in the cap-and-trade program (June 26, 2017)

The document appears to be submitted in support of the commenter's positions that allowances must be removed from the Program budgets. The commenter is directed to Response to 45-Day Comments B-1.3 and B-2.1 for a discussion of modelling conducted in support of the adopted Regulation, and a discussion of CARB's position that no changes are necessary at this time to allowance budgets or banking rules.

It is unclear whether the commenter is also incorporating the LAO summary of adjustments to the Program that would affect emissions and prices, that were directed to the Honorable Christina Garcia (Hon. Christina Garcia), as specific recommendations of courses of action for CARB. CARB staff notes that the document was directed to Hon. Christina Garcia prior to the formal rulemaking, and also that LAO did not submit the document to CARB as part of this formal rulemaking. CARB staff also notes that the LAO letter provided a summary of methods by which adjustments to the Program could affect emissions and prices, rather than a recommendation for any particular adjustment method, or a recommendation for taking action at all. Therefore, no further response is required.

7. Danny Cullenward, Mason Inman, and Michael Mastrandrea, Removing excess cap-and-trade allowances will reduce greenhouse gas emissions: A response to Severin Borenstein and Jim Bushnell. Near Zero Research Note (Jan. 11, 2018)

The document contends price ceiling sales, if incorrectly applied by CARB, could jeopardize the environmental integrity of the Program and the ability to meet the SB 32 target. As noted in the ISOR, the adopted Regulation describes the process through which covered entities would purchase these price ceiling units, at the same price ceiling sales as any allowances offered at the price ceiling, and further specifies that any moneys generated from the sale of price ceiling units will be expended to achieve emissions reductions on at least a metric ton for metric ton basis that are real, permanent, quantifiable, verifiable, enforceable by the state board and in addition to any greenhouse gas emission reduction otherwise required by law or regulation and any other greenhouse gas emission reduction that otherwise would occur. The document's authors are directed to Response to 45-Day Comments B-5.4, that notes that future regulatory

¹⁸² https://www.arb.ca.gov/cc/scopingplan/2030sp_appg_alt-ab197aq-health_final.pdf

amendments will likely be necessary to identify eligible emissions reductions achieved using price ceiling unit sales proceeds.

8. Chris Busch, Oversupply grows in the Western Climate Initiative carbon market: An adjustment for current oversupply is needed to ensure the program will achieve its 2030 target. Energy Innovation LLC Report (Dec. 2017)

The commenter is directed to Response to 45-Day Comments B-1.3 and B-2.1 for a discussion of modelling conducted in support of the adopted Regulation, and a discussion of CARB's position that no changes are necessary at this time to allowance budgets or banking rules, including the post-2020 cap adjustments suggested in the appendix document. See also Response to 45-Day Comments B-1.3 for a discussion of monitoring progress toward the SB 32 target, including a discussion of Board Resolution 18-51, that directs staff to quantify the pre-2021 allowance supply that may be carried into the post-2020 Program.

In addition, as staff noted in Appendix D to the ISOR, if it appears statewide emissions are not declining as needed to meet the 2030 goals, recognizing that year-to-year variability due to climate, global fuel prices, or economic factors can influence emissions, CARB staff will evaluate which sectors are not responding as anticipated, review all programs that cover those sectors, and ascertain why, as well as assess the best path forward to ensure California stays on track to meet its legislatively established GHG targets.

Responses to 45-Day Comments B-1.3 and B-2.5 discuss the publicly available information and oversight processes at the annual level already built into review of the Program. The 2022 Scoping Plan update, and annual reports to committees of the Legislature including the Joint Committee on Climate Change Policies, provide opportunities for future review of the Program's progress in meeting the SB 32 target.

9. Legislative Analyst's Office, Cap-and-Trade Extension: Issues for Legislative Oversight (Dec. 2017)

Similar to the Legislative Analyst's Office's (LAO) letter to the Honorable Christina Garcia (document 6 of this appendix), the document appears to be attached in support of the commenter's position that allowances must be removed from the Program budgets. The commenter is directed to Response to 45-Day Comments B-1.3 and B-2.1 for a discussion of modelling conducted in support of the adopted Regulation, and a discussion of CARB's position that no changes are necessary at this time to allowance budgets or banking rules.

In addition, the document appears to be attached in support of the commenter's position that DEBS should not be awarded on the basis of project-level greenhouse gas emissions or emissions reductions. The commenter is directed to Response to 45-Day Comments G-3.6 and G-3.11.

As with LAO's letter to the Honorable Christina Garcia (document 6 of this appendix), it is unclear whether the commenter is also incorporating the LAO list of actions the legislature could take to review the adopted Regulation, and clarification the Legislature might provide on the role of the IEMAC, as implying specific recommendations of courses of action for CARB as part of the current rulemaking. CARB staff notes that the document was directed to the legislature prior to the formal rulemaking, and that LAO did not submit the document to CARB as part of this formal rulemaking. As with LAO's letter to the Honorable Christina Garcia, CARB staff also notes that in this document, LAO provided a list of actions the legislature could take, and did not recommend specific courses of action with respect to the adopted amendments. Therefore, no further response is required.

10. Chris Busch, Technical Appendix to Blog Post "Analyzing the Likely Impact of Oversupply on California's Carbon Market Must Consider State's 2030 Emissions Goal and Potential for Clean Tech Breakthroughs," Energy Innovation LLC (Jan. 10, 2018)

The document focuses on a blog post authored by Professors Borenstein and Bushnell (BBB).¹⁸³ Neither BBB nor the document provide specific recommendations pertaining to the adopted amendments. As such, no further summary or response is required for these documents.

Notwithstanding this, regarding the document's implied conclusion that adjusting for perceived oversupply would be a straightforward matter of retiring pre-2020 allowances, see Responses to 45-Day Comments B-1.2, B-1.3, and B-2.1 for a discussion of staff's position that the Program's ambition and allowance supply are appropriate at this time. See also Response to 45-Day Comment B-1.3 and Response to 45-Day Comment B-2.1, that detail the modeling conducted to support the adopted Regulation, and discuss Appendix D to the ISOR. As noted in Appendix D, at this time, staff is not proposing to change existing banking rules, remove unused allowances, or change post-2020 annual caps as part of this rulemaking. See also Response to 45-Day Comments B-1.3 for a discussion of Board Resolution 18-51, that directs staff to quantify the pre-2021 allowance supply that may be carried into the post-2020 Program.

11. Danny Cullenward, Mason Inman, and Michael Mastrandrea, Removing excess cap-and-trade allowances will reduce greenhouse gas emissions: A response to Severin Borenstein and Jim Bushnell. Near Zero Research Note (Jan. 11, 2018)

¹⁸³ <https://energyathaas.wordpress.com/2018/01/02/californias-carbon-cap-is-not-in-jeopardy-because-its-not-really-a-cap/>

This document (document 11) and document 10 of the appendix are both critiques of the same blog post authored by Professors Borenstein and Bushnell (BBB).¹⁸⁴ Neither BBB nor this document (document 11) provide specific recommendations pertaining to the adopted amendments. As such, no further summary or response is required for this document. See the response to document 10 immediately above for a further discussion of the issues discussed in documents 10 and 11.

Notwithstanding this, regarding the commenters' assertion that the market is in a state of oversupply, see Response to 45-Day Comments B-1.2, B-1.3, and B-2.1 for a discussion of staff's position that the Program's ambition and allowance supply are appropriate at this time. See also Response to 45-Day Comment B-1.3 and Response to 45-Day Comment B-2.1, that detail the modeling conducted to support the adopted Regulation, and discuss Appendix D to the ISOR. As noted in Appendix D, at this time, staff is not proposing to change existing banking rules, remove unused allowances, or change post-2020 annual caps as part of this rulemaking. See also Response to 45-Day Comments B-1.3 for a discussion of Board Resolution 18-51, that directs staff to quantify the pre-2021 allowance supply that may be carried into the post-2020 Program.

Regarding an identification of the emissions reductions eligible to backfill price ceiling units, see Response to 45-Day Comments B-5.4. As stated there, the adopted amendments contain procedures that would govern sales of price ceiling units from the price ceiling mechanism. Future regulatory amendments will likely be necessary to identify eligible emissions reductions achieved using price ceiling unit sales proceeds.

12. Environmental Commissioner of Ontario, Ontario's Climate Act: From Plan to Progress, Appendix G: Technical Aspects of Oversupply in the WCI Market (Jan. 30, 2018)

The commenter appears to submit the Ontario appendix in support of the commenter's position that California should reduce allowances available to the market. If the commenter is submitting the document in support of a restriction of allowance supply, the commenter is directed to Responses to 45-Day Comments B-1.2 and B-2.1 for a discussion of staff's position that the Program's ambition and allowance supply are appropriate at this time. The commenter is also directed to Response to 45-Day Comments B-1.3 and B-2.1, that detail the modeling conducted to support the adopted Regulation, and discuss Appendix D to the ISOR. As noted in Response to 45-Day Comments B-2.1, by asking for the removal of allowances, the commenter seems to be asserting the need for higher allowance prices in the Program without offering how high those prices

¹⁸⁴ <https://energyathaas.wordpress.com/2018/01/02/californias-carbon-cap-is-not-in-jeopardy-because-its-not-really-a-cap/>

would be or the impacts to the economy, jobs, or households. As noted in Appendix D, at this time, staff is not proposing to change existing banking rules, remove unused allowances, or change post-2020 annual caps as part of this rulemaking. The commenter is also directed to 45-Day Response B-2.1 and Appendix D for a discussion of CARB's evaluation of the Regional Greenhouse Gas Initiative (RGGI), and European Union Emissions Trading System (EU ETS).

See also Response to 45-Day Comments B-1.3 for a discussion of monitoring progress toward the SB 32 target, including a discussion of Board Resolution 18-51, that directs staff to quantify the pre-2021 allowance supply that may be carried into the post-2020 Program.

In addition, as staff noted in Appendix D to the ISOR, if it appears statewide emissions are not declining as needed to meet the 2030 goals, recognizing that year-to-year variability due to climate, global fuel prices, or economic factors can influence emissions, CARB staff will evaluate which sectors are not responding as anticipated, review all programs that cover those sectors, and ascertain why, as well as assess the best path forward to ensure California stays on track to meet its legislatively established GHG targets.

The Ontario Environmental Commissioner's comment on sources of uncertainty in allowance supply projections mirrors some the reasons CARB conducted the uncertainty analysis discussed in Appendix E of the 2017 Scoping Plan.¹⁸⁵ See Response to 45-Day Comments B-1.3 for a further discussion of the uncertainty analysis.

CARB notes that the document was developed by the Environmental Commissioner of Ontario directly for the Ontario Legislature, that the document was directed to the Ontario Legislature prior to the formal rulemaking, and that Environmental Commissioner did not submit the document to CARB. Staff also notes that Environmental Commissioner's appendix did not recommend specific courses of action for CARB. Therefore, no further response is required.

13. Danny Cullenward, Mason Inman, and Michael Mastrandrea, Interpreting AB 398's carbon offsets limits. Near Zero Research Note (Mar. 15, 2018)

CARB disagrees with the assertion that offset credits do not create net environmental benefits: see Response to 45-Day Comments B-2.9.

Regarding the recommended applications of the offset provisions of AB 398 to the adopted amendments, the letter was submitted in advance of the formal rulemaking and did not have the advantage of reviewing the adopted amendments at the time of the comments. See Responses to 45-Day

¹⁸⁵ https://www.arb.ca.gov/cc/scopingplan/2030sp_app_econ_final.pdf

Comments G-2.2, G-3.6, and G-3.11 that note the commenters' recommendations are consistent with the adopted Regulation.

14. Danny Cullenward, Mason Inman, and Michael Mastrandrea, Implementing AB 398: ARB's initial post-2020 market design and "allowance pool" concepts. Near Zero Research Note (Mar. 16, 2018)

CARB staff notes that "Preliminary Concepts: Price Containment Points, Price Ceiling, and Allowance Pools. Feb. 2018" is a CARB document incorporated into Appendix E to the Initial Statement of Reasons for this rulemaking. The document was intended for discussion purposes only, and was not intended to satisfy AB 398's requirement that CARB evaluate and address as appropriate "concerns related to overallocation."¹⁸⁶ Regarding this AB 398 requirement, regarding the statement that the proposed 75.1 million allowance transfer is too small, and regarding that CARB should reduce allowance availability, see Responses to 45-Day Comments B-1.3 and B-2.1, that detail the modeling conducted to support the adopted Regulation, and discuss Appendix D to the ISOR. As noted in Appendix D, at this time, staff is not proposing to change existing banking rules, remove unused allowances, or change post-2020 annual caps as part of this rulemaking. See also Response to 45-Day Comments B-1.3 for a discussion of Board Resolution 18-51, that directs staff to quantify the pre-2021 allowance supply that may be carried into the post-2020 Program.

CARB disagrees with the commenter's statements that the Program does not have mechanisms for managing potential transitions from current prices to prices near the new post-2020 Reserve tier and price ceiling prices, and that the proposal insufficiently mitigates potential volatility. See Responses to 45-Day Comments B-3.11 and B-3.12 for discussions of how the new post-2020 Reserve and price ceiling work in coordination with other features of the Program that provide compliance flexibility to meet the 2030 target reliably and cost effectively. As stated in B-3.12, as modeled, the amended Regulation was found to have a negligible impact on the economy, employment, and personal income through 2030, even in the unlikely event the allowance price reaches the price ceiling. See also Responses to 45-Day Comments B-3.14 and B-3.15 for how many features within the entire Program support cost containment, why the escalator is appropriate, and a further description of how CARB assessed all AB 398 factors in setting the price ceiling.

Regarding "technical reforms that could enable dynamic adjustments to program allowance budgets and/or banking rules that respond... based on empirical metrics," see Response to 45-Day Comments B-2.6. Regarding demonstrating the adopted Regulation, as part of the adopted Scoping Plan, will meet the SB 32 target, see Response to 45-Day Comments B-1.9. Regarding implementation of

¹⁸⁶ HSC 38562(c)(2)(D)

the adopted Regulation's Price Ceiling price path, see Response to 45-Day Comments B-3.15 for a description of how CARB assessed all AB 398 factors in setting the price ceiling.

15. Mason Inman, Danny Cullenward, and Michael Mastrandrea, Ready, fire, aim: ARB's overallocation report misses its target. Near Zero Research Note (May 7, 2018)

CARB staff notes that CARB's April 2018 Supporting Material for Assessment of post-2020 Caps (April Concept Paper) is a CARB document incorporated into Appendix E to the Initial Statement of Reasons for this rulemaking. The document was intended for discussion purposes only, and was not intended to satisfy AB 398's requirement that CARB evaluate and address as appropriate concerns related to overallocation. Regarding this AB 398 requirement, regarding the commenter's assertion that CARB should reduce allowance availability, and regarding the assertion that the April Concept Paper contains a flaw in its logic, see Responses to 45-Day Comments B-1.3 and B-2.1, that detail the modeling conducted to support the adopted Regulation, and discuss Appendix D to the ISOR. As noted in Appendix D, at this time, staff is not proposing to change existing banking rules, remove unused allowances, or change post-2020 annual caps as part of this rulemaking. See also Response to 45-Day Comments B-1.3 for a discussion of Board Resolution 18-51, that directs staff to quantify the pre-2021 allowance supply that may be carried into the post-2020 Program.

Regarding demonstrating how the adopted Scoping Plan with Cap-and-Trade will meet the SB 32 target, see Responses to 45-Day Comments B-1.3.

16. Mason Inman, Danny Cullenward, and Michael Mastrandrea, California's "self-correcting" cap-and-trade auction mechanism does not eliminate market overallocation. Near Zero Research Note (May 23, 2018).

As noted by the commenter, the calculations of the number of unsold allowances arising from undersubscribed auctions from 2016 to 2017, is largely consistent with CARB's estimate. The commenter asserts throughout the document that the unsold mechanism is insufficient on its own to address market oversupply. By extension, and consistent with other materials submitted by the commenter, the commenter is asserting that the market is in a state of oversupply. See Response to 45-Day Comments B-1.2, B-1.3, and B-2.1 for a discussion of staff's position that the Program's ambition and allowance supply are appropriate at this time. See also Response to 45-Day Comment B-1.3 and Response to 45-Day Comment B-2.1, that detail the modeling conducted to support the adopted Regulation, and discuss Appendix D to the ISOR. As noted in Appendix D, at this time, staff is not proposing to change existing banking rules, remove unused allowances, or change post-2020 annual caps as part of this rulemaking. See

also Response to 45-Day Comments B-1.3 for a discussion of Board Resolution 18-51, that directs staff to quantify the pre-2021 allowance supply that may be carried into the post-2020 Program. Regarding demonstrating how the adopted Scoping Plan with Cap-and-Trade will meet the SB 32 target, see Responses to 45-Day Comments B-1.3.

With regards to considering the unsold allowances in determining the prices of the new post-2020 Reserve tiers and Price Ceiling, see Response to 45-Day Comments B-3.11 for a discussion of why the post-2020 Reserve tiers are appropriate, and allow for a wide range of market price discovery prior to accessing additional allowances for cost containment purposes. See also Response to 45-Day Comment B-3.15 for a description of how CARB assessed all AB 398 factors in setting the price ceiling. See Response to 45-Day Comment B-3.14 for a discussion specific to emissions leakage. As noted in the Initial Statement of Reasons, under the adopted Regulation, the unsold allowances discussed by the commenter will be placed in the Price Ceiling. Future potential unsold allowances placed in cost containment via this mechanism will be divided equally into the new post-2020 Reserve tiers.

17. Michael Mastrandrea, Danny Cullenward, and Mason Inman, Ontario's exit exacerbates allowance overallocation in the Western Climate Initiative cap-and-trade program. Near Zero Research Note (Jul. 16, 2018)

The document does not contain recommendations specific to the adopted amendments. To the extent the document is submitted in support of the commenters' position that a downward adjustment to allowance budgets should be implemented, the commenter is directed to Response to 45-Day Comments B-1.3 and B-2.1 for a discussion of modeling conducted in support of the adopted Regulation, and a discussion of CARB's position that no changes are necessary at this time to allowance budgets or banking rules, including the post-2020 cap adjustments suggested in the appendix document. See also Response to 45-Day Comments B-1.3 for a discussion of monitoring progress toward the SB 32 target, including a discussion of Board Resolution 18-51, that directs staff to quantify the pre-2021 allowance supply that may be carried into the post-2020 Program.

18. Mason Inman, Michael Mastrandrea, and Danny Cullenward, Tracking banking in the Western Climate Initiative cap-and-trade program. Near Zero Research Note (Sept. 12, 2018)

Regarding the recommendation to retire allowances via implementation of a mechanism that would provide "dynamic program adjustments," see Response to 45-Day Comments B-2.6. The commenter is directed to 45-Day Response B-2.1 for a discussion of CARB's evaluation of the Regional Greenhouse Gas Initiative and European Union Emissions Trading System.

See Response to 45-Day Comment B-1.3 and Response to 45-Day Comment B-2.1, that detail the modeling conducted to support the adopted Regulation, and discuss Appendix D to the ISOR. As noted in Appendix D, at this time, staff is not proposing to change existing banking rules, remove unused allowances, or change post-2020 annual caps as part of this rulemaking. See also Response to 45-Day Comments B-1.3 for a discussion of Board Resolution 18-51, that directs staff to quantify the pre-2021 allowance supply that may be carried into the post-2020 Program. In addition, as staff noted in Appendix D to the ISOR, if it appears statewide emissions are not declining as needed to meet the 2030 goals, recognizing that year-to-year variability due to climate, global fuel prices, or economic factors can influence emissions, CARB staff will evaluate which sectors are not responding as anticipated, review all programs that cover those sectors, and ascertain why, as well as assess the best path forward to ensure California stays on track to meet its legislatively established GHG targets.

19. Senate Environmental Quality Committee and Budget and Fiscal Review Subcommittee No. 2 Hearing on Document, “California’s Cap-and-Trade Program: The Air Resources Board’s 2018 Scoping Plan” (Jan. 17, 2018): SEQ, Background Document

The document provides background on the Cap-and-Trade Program and Scoping Plan process, pre-dates the current rulemaking, and does not suggest changes to the adopted amendments. As such, no further summary or response is required for this document.

20. Senate Environmental Quality Committee and Budget and Fiscal Review Subcommittee No. 2 Hearing on Document, “California’s Cap-and-Trade Program: The Air Resources Board’s 2018 Scoping Plan” (Jan. 17, 2018): ARB, Responses to Questions

As noted in the appendix summary of documents 1 through 4 above, the CARB document pre-dates the current rulemaking, and does not suggest changes to the adopted amendments. As such, no further summary or response is required for this document.

21. Joint Legislative Committee on Climate Change Policies, Informational Hearing: Cap and Trade (May 24, 2018). JLCCCP, Background Document

The document provides background for a hearing conducted by the Joint Legislative Committee on Climate Change Policies on May 24, 2018. Regarding the statement that “[o]ffset projects do not generate net greenhouse gas reductions because project-level gains are zeroed out when regulated companies use the associated offset credits to increase their own emissions, resulting in no direct environmental benefit outside of potential air quality or water quality impacts,” see Response to 45-Day Comments B-2.9. Regarding the document’s statement that as of May 24, 2018, CARB staff was “considering allowing all

offset credits issued before the passage of AB 398 to be considered as [eligible for] direct environmental benefits,” CARB did not implement a provision with this effect in the adopted Regulation.

22. Joint Legislative Committee on Climate Change Policies, Informational Hearing: Cap and Trade (May 24, 2018). Legislative Analyst’s Office, Handout

Similar to the previous two Legislative Analyst’s Office’s (LAO) documents contained in the commenter’s attachment,^{187,188} the document appears to be attached in support of the commenter’s position that allowances must be removed from the Program budgets. The commenter is directed to Response to 45-Day Comments B-1.3 and B-2.1 for a discussion of modeling conducted in support of the adopted Regulation, and a discussion of CARB’s position that no changes are necessary at this time to allowance budgets or banking rules. The commenter is also directed to Response to 45-Day Comments B-1.3 for a discussion of monitoring progress toward the SB 32 target, including a discussion of Board Resolution 18-51, that directs staff to quantify the pre-2021 allowance supply that may be carried into the post-2020 Program. In addition, as staff noted in Appendix D to the ISOR, if it appears statewide emissions are not declining as needed to meet the 2030 goals, recognizing that year-to-year variability due to climate, global fuel prices, or economic factors can influence emissions, CARB staff will evaluate which sectors are not responding as anticipated, review all programs that cover those sectors, and ascertain why, as well as assess the best path forward to ensure California stays on track to meet its legislatively established GHG targets.

The commenter is directed to Response to 45-Day Comments G-3.6 and G-3.11 for staff’s clarifications that the adopted Regulation precludes the interpretation that offset projects can be eligible for DEBS based on greenhouse gas emissions or emissions reductions credited at the project level.

The commenter is also directed to Response to 45-Day Comments B-3.3, which describes that the goal of the Program is to achieve GHG reductions, not to generate revenues, consistent with the LAO assessment. The commenter is also directed to Response to 45-Day Comment B-3.14 for a discussion of how the new post-2020 Reserve and price ceiling work in coordination with other features of the Program that provide compliance flexibility to meet the 2030 target reliably and cost effectively. See Response to 45-Day Comments B-3.14 and B-3.15 for how many features within the entire Program support cost containment, why the escalator is appropriate, and a further description of how CARB assessed all AB

¹⁸⁷ Legislative Analyst’s Office, Letter to the Hon. Christina Garcia re: excess allowances in the cap-and-trade program (June 26, 2017)

¹⁸⁸ Legislative Analyst’s Office, Cap-and-Trade Extension: Issues for Legislative Oversight (Dec. 2017).

398 factors in setting the price ceiling. The commenter is directed to B-3.10 for a discussion of the price ceiling and linkage.

As with the prior two LAO documents contained in the appendix, it is unclear whether the commenter is also incorporating the LAO handout as implying specific recommendations of courses of action for CARB as part of the current rulemaking. CARB staff notes that the document was directed to the Legislature's Joint Committee on Climate Change Policies, and Honorable Joint Committee Chair, Assembly Member Eduardo Garcia, prior to the formal rulemaking, and that LAO did not submit the document to CARB as part of this formal rulemaking. As with LAO's prior documents, CARB staff notes that this document provides a list of actions the legislature could take, and did not recommend specific courses of action. Therefore, no further response is required.

23. Joint Legislative Committee on Climate Change Policies, Informational Hearing: Cap and Trade (May 24, 2018). Danny Cullenward, Testimony

Regarding the commenter's recommendation that CARB apply offset limits based on emissions years, not compliance events, see Response to 45-Day Comments G-2.2 that clarifies that the adopted Regulation is consistent with this interpretation of AB 398. Regarding the commenter's position that DEBS should not be awarded on the basis of project-level greenhouse gas emissions or emissions reductions, the commenter is directed to Response to 45-Day Comments G-3.6 and G-3.11.

CARB staff notes that CARB's April 2018 Supporting Material for Assessment of post-2020 Caps (April Concept Paper) is a CARB document incorporated into Appendix E to the Initial Statement of Reasons for this rulemaking. The document was intended for discussion purposes only, and was not intended to satisfy AB 398's requirement that CARB evaluate and address as appropriate concerns related to overallocation. Regarding this AB 398 requirement, regarding the commenter's general assertion that CARB should reduce allowance availability, and regarding the assertion that the April Concept Paper contains a flaw in its logic, see Responses to 45-Day Comments B-1.3 and B-2.1, that detail the modeling conducted to support the adopted Regulation, and discuss Appendix D to the ISOR. As noted in Appendix D, at this time, staff is not proposing to change existing banking rules, remove unused allowances, or change post-2020 annual caps as part of this rulemaking. See also Response to 45-Day Comments B-1.3 for a discussion of Board Resolution 18-51, that directs staff to quantify the pre-2021 allowance supply that may be carried into the post-2020 Program.

Regarding demonstrating how the 2017 Scoping Plan with Cap-and-Trade will meet the SB 32 target, see Responses to 45-Day Comments B-1.3.

24. Danny Cullenward, Letter to Hon. Eduardo Garcia and Sen. Henry Stern re: ARB's testimony at the May 24, 2018 JLCCCP hearing (May 30, 2018)

See Responses to 45-Day Comments B-1.2, B-1.3, and B-2.1 for a discussion of staff's position that the Program's ambition and allowance supply are appropriate at this time. See also 45-Day Response B-1.3 for a discussion of the adopted Regulation's conformance with the requirements of AB 32, SB 32, and AB 197. Regarding the alternate recommendation to retire allowances via implementation of a mechanism that would provide "dynamic program adjustments," see Response to 45-Day Comments B-2.6.

For how the adopted Regulation is in conformance with AB 398, it is unclear to which provisions of AB 398 the commenter is referring. Based on previous comments by this author, the provisions of AB 398 are likely regarding allowance supply, CARB oversight, the price ceiling, modeling in support of the 2017 Scoping Plan and Cap-and-Trade Program, industrial allocation, and offset provisions. See Responses to 45-Day Comments B-1.3 and B-2.1 for discussions addressing allowance supply, CARB oversight, and modeling in support of the Scoping Plan and Cap-and-Trade. See Response to 45-Day Comments C-1.1 and C-1.4 for conformance of industrial allocation provisions within the adopted Regulation with AB 398 direction. See Response to 45-Day Comments G-2.2, G-3.6, and G-3.11 for how the adopted Regulation's offset provisions are consistent with the legislative direction of AB 398. For the author's continued assertion that CARB staff's calculations regarding allowance supply contain a flaw, see Response to 45-Day Comments B-2.1.

25. Michael Mastrandrea and Mason Inman, The role of cap-and-trade in meeting California's 2030 climate target, Near Zero comment letter to ARB re: October 2017 Scoping Plan and cap-and-trade workshops (Oct. 27, 2017)

The commenter is directed to Responses to 45-Day Comments B-1.3 and B-2.5 that discuss the publicly available information and oversight processes at the annual level already built into review of the Program. The 2022 Scoping Plan update, and annual reports to committees of the Legislature including the Joint Committee on Climate Change Policies, provide opportunities for future review of the Program's progress in meeting the SB 32 target. The commenter is also directed to Response to 45-Day Comment B-1.3 for a discussion of the opportunities for effective oversight on progress towards meeting the SB 32 target through the 2017 Scoping Plan including the Cap-and-Trade Program.

26. Danny Cullenward, Mason Inman, and Michael Mastrandrea, Near Zero comment letter to ARB re: March 2018 cap-and-trade workshop (Mar. 16, 2018)

Regarding the comment that a substantial number of pre-2021 allowances will be banked forward for post-2020 use, see Response to 45-Day Comment B-1.3. As discussed there, in adopting the amendments, Board Resolution 18-51 directs

staff to continue monitoring allowance supply, and to quantify and report to the Board, by no later than December 31, 2021, the volume of unused allowances from 2013 to 2020, including volumes held in private accounts, and the potential for unused allowances to hinder the ability of the Program to help achieve the SB 32 target. The Board further directed that CARB staff will hold a workshop in 2019 to discuss potential methodologies to evaluate this topic. When this report is concluded, staff will be able to provide the actual number of unused allowances carried forward to the post-2020 Program.

The commenter recommends CARB alter the post-2020 market design to manage a transition from today's prices to the higher prices that are likely needed to achieve California's 2030 target. The commenter also recommends CARB reduce availability of past and future allowances via restricting allowance budgets, implementing banking rules that discount allowances, and / or implementing other approaches to restricting allowance availability developed in a collaborative fashion with stakeholders. The commenter is directed to Responses to 45-Day Comments B-1.2 and B-2.1 for a discussion of staff's position that the Program's ambition and allowance supply are appropriate at this time. The commenter is also directed to Response to 45-Day Comments B-1.3 and B-2.1, that detail the modeling conducted to support the adopted Regulation, and discuss Appendix D to the ISOR. As noted in Response to 45-Day Comments B-2.1, by asking for the removal of allowances, the commenter seems to be asserting the need for higher allowance prices in the Program without offering how high those prices would be or the impacts to the economy, jobs, or households. As noted in Appendix D, at this time, staff is not proposing to change existing banking rules, remove unused allowances, or change post-2020 annual caps as part of this rulemaking.

The commenter recommends adjustments to allowance budgets should be combined with lower price containment points, and a price ceiling that starts at a lower initial price and increases more rapidly over time. See Response to 45-Day Comment B-3.14 for a discussion of how the new post-2020 Reserve and price ceiling work in coordination with other features of the Program that provide compliance flexibility to meet the 2030 target reliably and cost effectively. See also Response to 45-Day Comments B-3.14 and B-3.15 for how many features within the entire Program support cost containment, why the escalator is appropriate, and a further description of how CARB assessed all AB 398 factors in setting the price ceiling. See Response to 45-Day Comments B-3.11 for a further discussion of why the post-2020 Reserve tiers are appropriate, and allow for a wide range of market price discovery as requested by the commenter.

Regarding the commenter's recommendation that CARB apply offset limits based on emissions years, not compliance events, see the Response to 45-Day Comments G-2.2. Regarding the commenter's position that DEBS should not be

awarded on the basis of project-level greenhouse gas emissions or emissions reductions, the commenter is directed to Response to 45-Day Comments G-3.6 and G-3.11.

Regarding evaluating how the adopted Regulation, rather than the 2017 Scoping Plan's Cap-and-Trade Program, will support meeting the SB 32 target, the commenter is directed to Response to 45-Day Comments B-1.9 for a discussion of integrating the features of the adopted Regulation directly into future Scoping Plan environmental analysis. The commenter is also directed to Responses to 45-Day Comments B-1.3 and B-2.5 that discuss the publicly available information and oversight processes at the annual level already built into review of the Program. The 2022 Scoping Plan update, and annual reports to committees of the Legislature including the Joint Committee on Climate Change Policies, provide opportunities for future review of the Program's progress in meeting the SB 32 target.

27. Danny Cullenward, Mason Inman, and Michael Mastrandrea, Near Zero comment letter to ARB re: April 2018 cap-and-trade workshop (May 10, 2018)

Regarding the recommendation to redo CARB's April 2018 analysis supporting the post-2020 Caps,¹⁸⁹ the commenter is directed to Response to 45-Day Comments B-2.1 that discusses Appendix D to this ISOR. The commenter is also directed to 45-Day Response B-2.1 for a discussion of CARB's evaluation of the Regional Greenhouse Gas Initiative and European Union Emissions Trading System.

Regarding the recommendation to retire allowances in proportion to "the existing and high-quality independent studies that make prospective estimates of allowance overallocation to inform an adjustment to the California program's stringency," the commenter is directed to Response to 45-Day Comments B-2.1 that notes that many of these studies reflect the commenter's same views in different venues or collaborations with additional parties.

Regarding the alternate recommendation to retire allowances via implementation of a mechanism that would provide "dynamic program adjustments," see Response to 45-Day Comments B-2.6.

See Responses to 45-Day Comments B-1.3 and B-2.1, that detail the modeling conducted to support the adopted Regulation, and discuss Appendix D to the ISOR. As noted in Appendix D, at this time, staff is not proposing to change existing banking rules, remove unused allowances, or change post-2020 annual caps as part of this rulemaking. See also Response to 45-Day Comments B-1.3

¹⁸⁹ Included in Appendix E to the current rulemaking's Initial Statement of Reasons: <https://www.arb.ca.gov/regact/2018/capandtrade18/ct18pprocess.pdf>

for a discussion of Board Resolution 18-51, that directs staff to quantify the pre-2021 allowance supply that may be carried into the post-2020 Program.

See Response to 45-Day Comments B-1.3 and B-2.1 for a discussion of modeling conducted in support of the adopted Regulation, and a discussion of CARB's position that no changes are necessary at this time to allowance budgets or banking rules.

Regarding the commenter's recommendation that CARB apply offset limits based on emissions years, not compliance events, see the Response to 45-Day Comments G-2.2. Regarding the commenter's position that DEBS should not be awarded on the basis of project-level greenhouse gas emissions or emissions reductions, the commenter is directed to Response to 45-Day Comments G-3.6 and G-3.11.

28. Danny Cullenward, Mason Inman, and Michael Mastrandrea, Near Zero comment letter to ARB re: June 2018 cap-and-trade workshop (Jul. 5, 2018)

Regarding the comment that a substantial number of pre-2021 allowances will be banked forward for post-2020 use, see Response to 45-Day Comment B-1.3. As discussed there, in adopting the amendments, Board Resolution 18-51 directs staff to continue monitoring allowance supply, and to quantify and report to the Board, by no later than December 31, 2021, the volume of unused allowances from 2013 to 2020, including volumes held in private accounts, and the potential for unused allowances to hinder the ability of the Program to help achieve the SB 32 target. The Board further directed that CARB staff will hold a workshop in 2019 to discuss potential methodologies to evaluate this topic. When this report is concluded, staff will be able to provide the actual number of unused allowances carried forward to the post-2020 Program.

The commenter is directed to Responses to 45-Day Comments B-1.2 and B-2.1 for a discussion of staff's position that the Program's ambition and allowance supply are appropriate at this time. The commenter is also directed to Response to 45-Day Comments B-1.3 and B-2.1, that detail the modeling conducted to support the adopted Regulation, and discuss Appendix D to the ISOR.

Regarding demonstrating how the adopted Scoping Plan with Cap-and-Trade will meet the SB 32 target, see Responses to 45-Day Comments B-1.3. Regarding the alternate recommendation to retire allowances via implementation of a mechanism that would provide "dynamic program adjustments," see Response to 45-Day Comments B-2.6.

CARB staff notes that CARB's April 2018 Supporting Material for Assessment of post-2020 Caps (April Concept Paper) is a CARB document incorporated into Appendix E to the Initial Statement of Reasons for this rulemaking. The document was intended for discussion purposes only, and was not intended to

satisfy AB 398's requirement that CARB evaluate and address as appropriate concerns related to overallocation. Regarding this AB 398 requirement, regarding the commenter's general assertion that CARB should reduce allowance availability, and regarding the assertion that the April Concept Paper contains a flaw in its logic, see Responses to 45-Day Comments B-1.3 and B-2.1. See also Response to 45-Day Comments B-1.3 for a discussion of Board Resolution 18-51, that directs staff to quantify the pre-2021 allowance supply that may be carried into the post-2020 Program.

The commenter is also directed to Responses to 45-Day Comments B-1.3, B-2.1, and B-2.5 that discuss the publicly available information and oversight processes at the annual level already built into review of the Program. The 2022 Scoping Plan update, and annual reports to committees of the Legislature including the Joint Committee on Climate Change Policies, provide opportunities for future review of the Program's progress in meeting the SB 32 target.

29. 2018 IEMAC Report (Oct. 22, 2018)

The IEMAC Report is integrated into the comment letters throughout this Final Statement of Reasons. Thus, see the 2018 IEMAC report, and responses to the full report, throughout the 45-Day Section of this Final Statement of Reasons. As the report is addressed elsewhere in this FSOR, no further summary or response is required for this document.

Annual or Biennial Emissions Caps

B-2.8. Comment:

(1) The Regulations Should Require that the State Meet Annual Targets, Not Solely the 2030 Target.

CEJA recommends that the regulations require the State to meet annual targets, not solely the 2030 target. A focus solely on 2030 would not provide sufficient oversight to ensure the SB 32 requirements are met. This is especially relevant given the current oversupply of the market, discussed below.

To best ensure compliance with SB 32, entities should be required to comply with the cap each year. An annual compliance period is important for several reasons. Initially, it helps ensure that entities are making efforts to comply with GHG requirements every year and exploring ways to directly reduce emissions and reduces potential for procrastination. In addition, an annual compliance period increases transparency of process and allows for the public to see how entities are complying with cap and trade year to year. Finally, an annual compliance period is likely to lead to greater overall reductions and may smooth out emissions from year to year.

Notably, other programs with a market-based system require compliance every year. For example, EPA's Acid Rain requires each source to hold allowances equal to the amount of its emissions each year or during ozone season.¹⁹⁰ In other words, the compliance period is either an annual period or a seasonal period. In addition, the European Union Emissions Trading System requires companies to surrender enough allowances to cover all its annual emissions, otherwise fines are imposed.¹⁹¹

At the very least, the cap and trade requirements should not have compliance periods any longer than 2 years, similar to the first compliance period from 2013-2014. For all these reasons, CEJA urges CARB to require compliance with the cap and trade regulations on an annual basis. (CEJA)

Response: This rulemaking did not propose to modify any of the requirements or timing for compliance periods, and therefore the comment is outside the scope of the rulemaking. Notwithstanding this, CARB disagrees with the comment. Staff considers the recommendation unnecessary. Multi-year compliance periods are an important feature of the Program, and have been included since the Board first adopted the Regulation in 2011. Annual aggregate emissions fluctuate, due to myriad factors such as gasoline consumption, the shares of renewable versus fossil fuels in electricity generation, and the level of economic activity. A multi-year compliance period, as opposed to annual emissions targets, provides some temporal flexibility by allowing covered entities to manage planned or emergency changes in operations over the short term.¹⁹² For example, demand for allowances would be much higher in low water years that might affect the generation of hydroelectric power. Allowing entities to accumulate allowances over a multi-year period could smooth some of these shocks and allow covered entities to avoid potential price spikes and cost spikes in energy and goods for consumers.

The Cap-and-Trade Regulation already includes a provision for an annual compliance surrender for each of the first two years of a triennial compliance period. Covered entities are required to surrender compliance instruments equal to 30% of that year's reported covered emissions. This provision ensures entities are making a consistent effort to reduce emissions, while preserving the cost-reducing flexibility obtained through the use of triennial compliance periods.

See Responses to 45-Day Comments B-1.3 and B-2.5 for a discussion of information available to the public. For example, CARB publishes annual emissions data for each year, and a table of the the compliance status of each covered entity, including the instruments surrendered each year for each covered entity, so the public can easily verify how covered entities are meeting their

¹⁹⁰ See <https://www3.epa.gov/airmarkets/progress/reports/index.html>

¹⁹¹ See https://ec.europa.eu/clima/policies/ets_en

¹⁹² Proposed Regulation to Implement the California Cap-and-Trade Program, Staff Report: Initial Statement of Reasons, Release Date: October 28, 2010, p.II-17.

compliance obligation may be changing their emissions levels over time as well as the types of compliance instruments the entities are using to cover their emissions. See Response to 45-Day Comment B-2.1 for CARB's position that the market is not in a state of oversupply. See Response to 45-Day Comments B-1.3 for a discussion of why CARB expects a smooth transition from the current path of meeting our 2020 climate targets ahead of schedule, to the prices that will motivate further reductions to achieve our 2030 target.

Role of Offsets as Cost-Containment

B-2.9. Comment:

Attachment 1: October 12, 2017 Workshop Comments

1. CARB should adopt market rules that will help to ensure that the ambitious level of emissions reductions reflected in the scoping plan are actually achieved and that the State achieves both cumulative and annual emissions reductions in a manner that complies with SB 32 and AB 197

A. Clarify the Role of Offsets in how Cap and Trade Will Ensure Compliance with SB 32

In providing the assessment of how, specifically, cap and trade will help to ensure compliance with SB 32 and AB 197, CARB should clarify its methodology for how it accounts for the effects of carbon offsets as an available compliance tool in the cap and trade system.

In 2030 sources covered by the cap may use offsets to satisfy 6% of their compliance obligation, at least half of which must provide benefits in California. Assuming that sources use the maximum number of offsets they are allowed to use, that means that their actual covered emissions are likely to be 6.4%, or 12.8 million tons above the nominal 2030 cap of 200.5 million tonnes. Even assuming that the offsets which provide benefits in California result in emission reductions from uncapped sources in California and are reflected in the inventory, the use of out-of-state offsets will still result in additional emissions of up to 6.4 million tons within the capped sources in California, which will need to be compensated by making corresponding reductions from uncapped sources to comply with SB 32. CARB should clarify whether and how it intends to achieve any compensating reductions in uncapped sources within California's inventory.¹⁹³

The 2015 inventory shows total emissions of 440.4 million tons, while the cap & trade allowance budget for 2015 was 394.5 million tons, and total covered emissions in 2015

¹⁹³ For the purposes of this analysis we are assuming that all offsets which provide benefits within California result in additional emission reductions from uncapped sources within California and thus have no net impact on the emissions inventory. This is a best case scenario and CARB will need to monitor actual emissions and make adjustments as needed to ensure compliance with SB 32.

reported to CARB amounted to 340.3 million tons.¹⁹⁴ This implies that uncapped sources in the inventory were responsible for 100.1 million tons in 2015. To compensate just for the out-of-state offsets allowed to be used in 2030 CARB would have to achieve additional reductions from uncapped sources equal to 6% of the emissions from these sources in 2015, over and above the measures currently included in the scoping plan. ARB should clarify how this is likely to occur, and whether adjustments to the cap and trade system will drive these additional reductions. (NEXTGEN)

Response: Staff disagrees with the comment’s assertion that the use of offsets increases emissions above the cap on a one-to-one basis for several reasons. First, the offset credits surrendered represent real reductions in greenhouse gases that are in addition to the reductions required by the Cap-and-Trade Program and other GHG regulations. Second, CARB set the quantitative offset use limit in part to reflect the diversion to the Reserve of allowances that would otherwise have been auctioned. This diversion would have reduced the number of allowances available to the market by 4 percent below the level allowable under the caps. The offset use limit was therefore increased from 4 to 8 percent to account for this when the Regulation was initially promulgated. AB 398 requires the offset use limit to be reduced in 2021 to 4 percent, so that the “backfill” diversion into the Reserve no longer occurs. AB 398 does mandate an increase in the offset use limit in 2026 to 6 percent. However, the adopted amendments include a further diversion of 22.7 million allowances to the Reserve to account for the increase in the offset use limit from 4 to 6 percent.

Third, the regulatory amendments that became effective in October 2017 restricted the post-2020 supply of allowances for non cost containment purposes below the quantity under the prior Regulation. This tightening of allowance supply, together with the additional diversions of allowances to the Reserve and the regulatory provisions that ensure offsets represent real additional reductions, means that the assertion that the use of offsets necessarily leads to an increase in emissions over the cap is false. See Response to 45-Day Comment B-1.4 for a discussion of AB 398’s requirements regarding offset usage.

See Response to 45-Day Comments B-1.3 for a summary of the extensive modeling done in support of the adopted Regulation. See also Response to 45-Day Comments B-1.3 for an explanation of why the Program is consistent with AB 197 and for a discussion of the uncertainty analysis that concluded that the adopted Scoping Plan with Cap-and-Trade had the highest percent chance of meeting the SB 32 target.

¹⁹⁴ <https://www.arb.ca.gov/cc/inventory/data/data.htm>;
<https://www.arb.ca.gov/regact/2016/capandtrade16/ctfinro.pdf> at p. 114;
<https://www.arb.ca.gov/cc/reporting/ghg-rep/reported-data/2015-ghg-emissions-2016-11-04.xlsx> sum of column R

See Response to 45-Day Comments B-2.1 for a discussion of staff's position that the market is not in a state of oversupply. As stated in Response to 45-Day Comments B-1.3, based on staff and third-party analyses, it is expected that allowance prices will continue to steadily increase in the next decade. CARB expects a smooth transition from the current path of meeting our 2020 climate targets ahead of schedule, to the prices that will motivate further reductions to achieve our 2030 target. Any proposal to remove allowances from the system must acknowledge that the result will be higher allowance prices, reached sooner, than would result from the adopted amendments.

B-3. Post-2020 Price Ceiling and Reserve Tier Prices

Support for Post-2020 Price Ceiling and Reserve Tier Prices and Volumes

B-3.1. Comment:

WPTF believes that the staff's proposal to amend the existing price containment reserve and implement a hard price ceiling, as required by AB398, is reasonable and strikes the correct balance between competing interests of stakeholders and the objectives established in AB398.

Setting the initial spread between the price ceiling and the auction reserve at \$65 and setting the prices for the two tiers at the mid and three-quarter point of this spread will maintain continuity relative to price expectations under the current program and provide certainty for long-term investments. WPTF also considers staff's proposed distribution of allowances between the two tiers and the price ceiling to be appropriate because it will result in a supply of allowance within the two reserve tiers that is roughly equal to the supply in the current three reserve tiers, plus an additional supply of allowances at the price ceiling. (WPTF)

Comment:

And then lastly, I want to address the concern about the price ceiling.

We've heard some pretty emphatic views here today.

And honestly, the reaction to this set of proposed amendments by some segments of the regulated community seems a little out of proportion with the actual content of these amendments. As I've illustrated in my previous points, if EDF had had a free hand to develop these amendments, we would have done some things differently too.

We asked for increased ambition post-2020.

And we want to see a price ceiling that's significantly higher than the previous APCR, rather than below it until 2027. But what's most important in these amendments is that California is moving forward with a program that has been successful.

Our emissions are declining. Our economy is thriving.

And we believe that staff is well within the scope of what the legislature asked for in AB 398. So in addition to my recommendations I've made, we would urge CARB, at the very minimum, to not give into further alarmist pressure and reduce the price ceiling anymore. (EDF2)

Comment:

In particular, the proposed price ceiling in combination of cost containment measures strike a good balance to drive emission reductions, while providing a safety valve, if something unforeseen with the market occurs. (BICEP2)

Response: Thank you for the support. With respect to the comment that includes a discussion on overallocation, see Response to 45-Day Comment B-2.1. With respect to the many features within the Program that support the objective of cost containment, see Response to 45-Day Comment B-3.14. With respect to balancing the objectives of AB 398, see Response to 45-Day Comment B-3.15.

Support for Price Ceiling and Price Containment Points

B-3.2. Comment:

COST CONTAINMENT

Price Ceiling

Assembly Bill 398 (Garcia, 2017) directs the California Air Resources Board (CARB) to include a price ceiling in the proposed regulation to control the prices of allowances. When setting the price ceiling, the legislation specifically directs CARB to “avoid adverse impacts on resident households, businesses, and the state’s economy.” This important and straightforward direction reflects a widespread and bipartisan recognition that the costs of climate regulations must be managed in order for the regulations to be successful and avoid damaging the market competitiveness of the state’s industrial sectors or driving California consumers, workers, and businesses into insolvency.

In establishing the price ceiling, AB 398 requires CARB to consider all of the following: CARB must avoid adverse impacts on California’s economy at all levels; the 2020 tier prices in the current Allowance Price Containment Reserve (pre-2020 Reserve); the social cost of carbon; the Auction Reserve Price; the potential for environmental and economic leakage; and the cost per metric ton of GHG emissions to achieve the statewide GHG emission reduction targets.

Simply put, CLFP supports CARB’s approach in the development of the price ceiling. And while not perfect, the current proposal strikes a balance between the very real need for program cost containment and economic protection against maintaining the environmental integrity of the program given the increased costs of compliance presented by the post-2020 regulation. The price ceiling numbers are clearly not aimed at simply trying to maximize costs.

Some stakeholders are arguing that CARB's proposal will set a price ceiling that is nearly twice as high as experts recommend. Environmental groups, renewable tech industry, and environmental justice advocates, as well as other non-obligated industries, heartily argue for a higher price ceiling, essentially advocating for a much costlier program post-2020. Some stakeholders may even hold hope that the market will immediately jump to the ceiling price after 2021. However, these premises can only employ speculation regarding future market activity that may or may not come to pass.

CLFP believes that proposed price ceiling meets the requirements mandated under AB 398; and that, if voted out by the Board, will provide effective cost containment protections without maximizing compliance costs or undermining the environmental integrity of the cap-and-trade program overall.

Moreover, given the ongoing monitoring and annual reporting required under AB 398 should provide sufficient advanced notice of any imminent market meltdown long before the price ceiling would be breached. As an industry subject to a compliance obligation, CLFP is very concerned about be able to catch and fix any market dysfunctions in a timely manner which the current regulatory package seems to provide...

Overall, CLFP continues to advocate its previous position that the focus should be on program stability and addressing impacts on obligated entities in determining the post-2020 price ceiling and speed bump placement. CLFP believes minimizing uncertainty and leakage should be the highest priority when determining the appropriate ceiling value. AB 398 requirements for a price ceiling must be commensurate with minimizing the potential adverse impacts on the California economy and jobs should the price rise above the price ceiling. CLFP shares CARB's confidence that the built-in monitoring of the allowance markets and annual reporting requirements should the price ceiling be breached is sufficient to provide market participants and the state early warning as to any market dysfunctions. CARB staff has already acknowledged that a ceiling price set too high will undermine the directives of AB 398 cost containment requirements. (CLFP)

Comment:

PG&E believes ARB's proposed price ceiling value in 2021 is reasonable and consistent with legislative direction from AB 398. PG&E concurs with ARB Staff that the 2021 price ceiling value captures the Intergovernmental Working Groups (IWG's) central estimate of the Social Cost of Carbon (SCC) – at \$61 in 2018 dollars, it is approximately \$10 higher than the 2020 central estimate of the SCC. (PG&E)

Comment:

Reserve Tiers

SCPPA supports the creation of "Reserve Tiers" (or "speed bumps") in §95913(h), "Sale of Allowances from the Allowance Price Containment Reserve," as required by AB 398 to establish two price containment points below the price ceiling. (SCPPA)

Response: Thank you for the support.

Achieving Reductions Not Revenues in Setting the Price Ceiling

B-3.3. Comment:

- The focus of program integrity should be placed on the level of emissions reductions achieved, not the amount of revenue the program generates...

4. Environmental Integrity

The most important factor to highlight is the level of emissions reductions achieved, not the amount of revenue the program has generated for investments into mitigation projects, etc. The same is true with the introduction of the price ceiling. What is important to focus on are the emissions reductions the state will likely achieve, not whether the ceiling will be reached. Too much focus on where the price is set can create a narrative that puts the focus of our environmental goals secondary to how much revenue is being generated. As important as these investments are, especially those going to disadvantaged communities, these investments and the level of revenue available for them does not in itself suggest whether the program is working.

This was the case a few years ago when the general assumption by legislators and even some stakeholders was that the program was failing as a result of declining revenue, which was attributed to low demand for allowances based on a number of factors, one of which was the uncertainty with the program prior to passage of AB 398. We now know that the program has indeed succeeded as a backstop, working in concert with complementary measures that have led to reducing the state's emissions such that it is four years ahead of meeting its 2020 target. Should the allowance price reach the price ceiling in the future, it would not mean the program had failed. Rather, the success of the program can be judged by whether added abatement opportunities occurred at higher prices, and whether the state secured emissions reductions, including those that might fall outside of the cap using instruments as required by statute in reducing climate pollution from the atmosphere. We suggest that CARB staff strongly consider these implications as the rulemaking process continues forward. The focus and long-term success of the program should be based on the program's impact on emissions and the environment...

3) Continue to ensure that in evaluating and setting the price ceiling, the primary focus for CARB should be whether our environmental goals will be achieved, not the amount of revenue the cap-and-trade program produces. (IEMAC)

Response: The commenter states the adopted Regulation's post-2020 cost containment provisions should aim to strengthen the Cap-and-Trade Program's ability to achieve emissions reductions, and should not focus on ensuring a specific revenue target will be met. CARB agrees with this sentiment, and notes that it is consistent with legislative direction contained in AB 32, SB 32, and AB 398. AB 32 specified CARB could adopt "a system of market-based declining

annual aggregate emissions limits” when such a system can “achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions”. In addition, AB 398 provides legislative direction that the Cap-and-Trade Program should be implemented in a “manner that minimizes costs and maximizes benefits for California’s economy,... maximizes additional environmental and economic cobenefits for California, and complements the state’s efforts to improve air quality.”

See Response to 45-Day Comment B-3.15 for the means by which CARB balanced the legislative direction contained in AB 398 to design the price ceiling. See also Response to 45-Day Comment B-1.7 for a discussion of how at least half of the monies collected from the sale of Cap-and-Trade Program allowances at the quarterly auctions have been allocated for programs that benefit disadvantaged communities. These investments yield GHG and air pollutant cobenefits in these communities. See Response to 45-Day Comment B-2.1 for staff’s determination that the market is not in a state of oversupply that would jeopardize achieving the 2030 target. See Response to 45-Day Comment B-1.3 for a discussion of the opportunities for effective oversight on progress towards meeting the SB 32 target through the adopted Scoping Plan including the Cap-and-Trade Program.

Increase the Price Ceiling

B-3.4. Comment:

2. High, Politically Viable Price Ceiling: Setting a price ceiling as high as politically feasible to drive down emissions, ensuring net social benefit, minimizing environmental leakage, and not impeding the work of other jurisdictions. This is especially important in future years, when the cap ratchets down and the complimentary policies have already done the bulk of their work...

Price Ceiling

The price ceiling is also an important issue that deserves consideration. We urge CARB to set the price ceiling as high as politically feasible to maximize environmental and social benefit, while maintaining market stability. Setting too low a price ceiling would mean the state will have extreme difficulty in meeting its GHG emission reduction goal. Too high a ceiling could weaken public support. (SILICONVALLEADERGROUP)

Comment:

We urge CARB to increase the level of the price but at the very least *not* to adjust the level of the price ceiling downward before adopting these amendments.

Throughout this process EDF has advocated for a price ceiling that is significantly higher than the price tiers included in the previous Allowance Price Containment

Reserve which created a soft price ceiling. Absolute price certainty warrants a higher upper bound for prices.

Furthermore, the price tiers have been lowered beneath the level of previous price tiers in order to increase the spread of cost containment. Instead of making the price ceiling roughly equivalent to the highest price tier, CARB could have made the lowest proposed price tier equivalent to the lower previous price tier and achieved the same spread with a higher price ceiling. CARB's current proposed price ceiling which starts at \$61.25 in 2021 (2018 real dollars) is not significantly higher than the single price tier currently in regulation; the proposed price ceiling actually starts a little lower than the current price tier until about 2026 and then becomes slightly higher. EDF believes an even higher price ceiling could be appropriate but we strongly urge CARB not to further lower the level of the price ceiling. As an environmental organization, EDF develops our position and advocates based on what impact the policy will have on emissions. That being said, we do consider prices and cost carefully as cost containment and price stability are important to California's program being viewed as a success and proliferating in other locations. Given this perspective, here is a summary of the reasons EDF believes a relatively higher price ceiling could be beneficial and urges CARB, at the very least, to not weaken the current proposal:

- A higher price ceiling makes it less likely that allowances will be released from the price containment tier therefore lowering supply of allowances and lowering emissions.
- A higher price ceiling provides more market flexibility to allow the market to set the appropriate price for incentivizing abatement. A recent working paper by Borenstein et al.¹⁹⁵ found a high likelihood that prices are either at the floor or ceiling. Some have used this to argue that increasing the price ceiling or tightening the cap would have little impact on emissions but would drive up prices. The problem with this argument is several fold. First, there is significant uncertainty about abatement opportunities and their model could have significantly underestimated these abatement opportunities, especially in the medium to long-term in the transportation sector.¹⁹⁶ Second, even this model found 42 MMT of emission reductions inside California, which is not insignificant. And finally, this argument ignores the fact that if the state reaches the price ceiling, reductions will be purchased with the revenue from Price Ceiling Units (PCUs) on at least a ton-for-ton basis, resulting in important atmospheric reductions.

¹⁹⁵ <https://ei.haas.berkeley.edu/research/papers/WP281.pdf>

¹⁹⁶ <https://energyinnovation.org/2018/01/10/analyzing-likely-impact-oversupply-californias-carbon-market-must-consider-states-2030-emissions-goal-potential-clean-tech-breakthroughs/>

- A higher price ceiling also means more revenue will be available to secure high-quality reductions outside the cap, perhaps allowing the state to exceed the critical ton-for-ton requirement in statute.
- A higher price ceiling could also encourage more emission reductions even if the price does not reach the price ceiling. Companies will plan their reduction investments based on the price certainty they get from the price ceiling. A higher price ceiling might cause businesses to invest in more emissions reductions in order to protect itself from the risk of higher prices. This activity combined with the efforts with others could lower overall emissions, making it even less likely that the price ever reaches the ceiling.
- It is important that CARB considers the social cost of carbon (SCC) in designing the post- 2020 program and in setting the price ceiling as it is a helpful reference point. We do not believe, however, that a carbon price should necessarily be directly pegged to the SCC – rather, we believe that climate policy design should be focused on reaching specified emissions reductions and performance goals at least cost, and not on the price per se. Therefore, we disagree with arguments that the price ceiling should be equal to the SCC. The latest best estimates of the social cost of carbon are those developed by the Interagency Working Group (IWG) under the Obama Administration.¹⁹⁷ These estimates remain absolutely crucial for use in regulatory benefit-cost analysis and to help provide an important set of data points that can inform policy, investments, and decision- making. Using these estimates to inform the level of the price ceiling is appropriate, but that does not mean the price should be pegged directly to them – in large part because there is no one “right” SCC figure. The IWG -- appropriately – produced a range of estimates that vary depending on discount rates and other factors. We also know that these estimates are certainly a lower bound given that they do not yet include quantification of all important climate damages. Therefore, CARB is taking the best course by using the SCC as a point of reference to inform the level of the price ceiling (as the Legislature in fact required) but not to tie the price ceiling directly to the SCC.
- There are many other ways to address concerns about costs for consumers other than lowering the price ceiling itself. As the Initial Statement of Reasons points out there are already many features built into the program to contain costs and to protect consumers. These include the climate dividend that customers of investor-owned utilities receive on their bill twice a year which the UCLA Luskin Center has shown is providing a net benefit to low-income Californians.¹⁹⁸ Current investments of auction proceeds are also being used in ways that will

¹⁹⁷ https://www.epa.gov/sites/production/files/2016-12/documents/sc_co2_tsd_august_2016.pdf

¹⁹⁸ In fact the Luskin Center Report shows a new benefit to low-income Californians from cap and trade as a whole. <http://newsroom.ucla.edu/stories/ucla-luskin-center-study-shows-low-income-californians-benefit-from-cap-and-trade>

help those most impacted by costs transition to the clean economy. This includes programs to get cleaner or electric vehicles into the hands of low-income Californians, energy efficiency and solar programs for low-income housing, and investments in public transportation. If prices do begin to approach the price ceiling California will see even more revenue for these investments to drive the transition more quickly and in turn lower demand for allowances and prices. Finally, the Legislature also has significant flexibility to try to achieve further cost mitigation through use of the auction proceeds if necessary. (EDF)

Comment:

Attachment 2: March 2, 2018 Workshop Comments

1. Price Ceiling and Price Containment Points

a. The price ceiling should be based on sound analysis and the legislative requirement to achieve the 2030 target

Staff has proposed a price ceiling in 2030 between \$81 and \$150 (2015\$). The higher end of this range is consistent with a range we discuss in our previous comment and a mid-range among current scientific mainstream assessments of the social costs of carbon. Nevertheless, we reiterate that “CARB should examine best available economic modeling and expert resources in attempting to assess what carbon price will be needed in order to enable the commercialization of technologies that will be required to reach our 2030 targets, and should provide a buffer above that level to take a conservative approach.” We also note that the price ceiling mechanism will shield Californians from potential increases in costs that may be associated with high market prices.

In assessing what an appropriate price ceiling level may be, CARB should not rely solely on the comments of interested parties in regulated industry, nor should it rely solely on the perspective of non-governmental environmental public interest organizations that may have a higher tolerance for high market prices than Californians as a whole. The best guidance for this threshold comes from California’s elected legislature. While the legislature has not spoken explicitly to what the ceiling price should be, it does offer some guidance both in the text of AB 398, which Staff cites in its discussion draft, and in the actions it has taken to provide CARB with authority to achieve California’s carbon reduction targets.

California’s legislature enacted SB 32 in 2016, which establishes the legal requirement and authority for the Air Resources Board to adopt regulations sufficient to reduce greenhouse gas emissions in California to 40% below 1990 levels in 2030. Notably, this authorization remained silent on re-authorizing the cap and trade system beyond 2020 in support of this target. By enacting the 2030 target without requiring CARB to adopt any market based mechanism, the legislature expressed the will of the State that these pollution reductions be achieved even if CARB chose not to extend the cap and trade

system, and instead relied solely on direct regulation. By explicitly re-authorizing cap and trade the following year, the legislature also expressed the hope that lower-cost measures could and would be found. But this hope does not negate the requirement that these targets must be achieved, even if reductions from the market mechanism are no more cost effective than direct regulation. Ultimately, the economic, social and public health cost of unchecked climate change are so great that when climate change damages and adaptation costs are considered, even cap-and-trade allowance prices well above the upper end of Staff's proposed range are almost certain to provide net benefits to California.

It is the premise of the cap and trade system that the market can and will, given the opportunity and incentive, find lower-cost reductions than can be achieved through direct regulation alone. But we should not establish a price ceiling that could have the effect of excluding emissions reduction measures that may be more cost effective than direct regulation, but more expensive than an arbitrarily-chosen dollar amount. The best guide, therefore for determining the price ceiling is the marginal cost-per-ton reduction required in the absence of cap and trade. With this dollar amount as the price ceiling, we can be confident that the market will both (a) find any and all pollution reduction measures required to achieve the 2030 target, and (b) do so at a price no higher than the cost of direct regulation.

Despite the difficulty associated with predictive economic modeling of carbon abatement technologies on this scale and time horizon, CARB has, in the scoping plan, provided a reasonable starting place for assessing the approximate high end of this range in its "No Cap and Trade Scenario." We therefore recommend that CARB adopt as a price ceiling the marginal cost per ton associated with the measures included in this scenario, but excluded from the Scoping Plan scenario.

b. The price containment points should not impede pollution abatement price discovery

Staff has requested comment on where to set the price containment points ("Reserve Tiers"). We reiterate here our previous comment on this topic: [Commenter quotes content from Attachment 1: October 12, 2017 Workshop Comments provided above].

NextGen agrees with the logic of Staff's proposal to set the lower of the two Reserve Tiers at the same level as the 2016 rulemaking's single ACPR tier of \$72.90 in 2021 (2015 dollars), but if this value is below the median available market price, CARB should adopt as the lower Tier price a value no lower than the median value. This Tier should be adjusted annually in the same manner as the auction reserve price ("Price Floor"). Establishing the lower Reserve Tier at this level will maintain continuity and expectations with current and previous market rules, which allow the market to function freely in the range between the floor price and this tier price. There is at this time no evidence to suggest either that this tier is too high, or that it may need to be adjusted downward. To the contrary, prices have remained near the price floor, and market

participants have had ample time and abundant opportunity to use CARB's generous allowance allocations to make early investments to ensure that the Reserve Tier is never breached.

- The second Reserve Tier should be set midway between the 2016 rulemaking's Reserve Tier price and the Price Ceiling we recommend above. The second tier should also be adjusted annually in the same manner as the price floor, to maintain continuity with current and previous market expectations. (NEXTGEN)

Response: The commenters request higher price ceiling and cost-containment point prices. In developing the price ceiling contained in the adopted amendments, AB 398 required CARB to balance multiple factors. CARB has balanced those factors, as described in the ISOR and in Response to 45-Day Comment B-3.15. With respect to the commenter's request that staff focus on SB 32 intent as well as AB 398 intent, see Response to 45-Day Comment B-3.3 for how the adopted Regulation is consistent with both AB 398 and prior legislative direction, including SB 32. See Response to 45-day Comments B-1.3 for the modelling supporting the Cap-and-Trade Program, how the Program is an important component of the adopted Scoping Plan, and how CARB expects a smooth transition from the current path of meeting our 2020 climate targets ahead of schedule, to the prices that will motivate further reductions to achieve our 2030 target. See also Response to 45-Day Comment B-1.3 for how the adopted Scoping Plan, including Cap-and-Trade, helps position the State for success in looking at emissions reductions beyond 2030.

See also Response to 45-Day Comment B-3.7 for a further discussion of the Price Ceiling and the Social Cost of Carbon, and Response to 45-Day Comment B-5.4 for a discussion of Price Ceiling Units. See also Response to 45-Day Comment B-1.7 for a discussion of how at least half of the monies collected from the sale of Cap-and-Trade Program allowances at the quarterly auctions have been allocated for programs that benefit disadvantaged communities. These investments yield GHG and air pollutant co-benefits in these communities.

Cost Containment Consistent with Achieving SB 32 Target

B-3.5. Comment:

Attachment 1: October 12, 2017 Workshop Comments

1. CARB should adopt market rules that will help to ensure that the ambitious level of emissions reductions reflected in the scoping plan are actually achieved and that the State achieves both cumulative and annual emissions reductions in a manner that complies with SB 32 and AB 197

B. Price Containment Mechanisms Must Not Hamper Cap and Trade's Effectiveness

As the cap and trade market takes on a leading role in driving over 40% of emissions reductions – more than any other single policy in ARB’s scoping plan – it is essential that ARB design market rule in a manner that allows the market to function as a strong incentive to innovate and discover novel means of emissions reductions. This core function of the carbon allowance market cannot occur if price containment mechanisms hamper the market’s price discovery function by setting an artificially low ceiling price or setting “speed bumps” or other price points that trigger release of reserve allowances too readily and too early in the program.

Price discovery is the inherent feature of a cap and trade system that allows it to drive cost effective emissions reductions in a dynamic technological and economic environment. If artificial breaks exist within the market that prevent allowances from reaching the price at which a marginal abatement technology becomes commercially viable, that technology will not become available. Conversely, if the technology does become available, it is likely to decline in price as competition, innovation, scale, and learning curves operate within that market segment. By allowing prices to naturally find the level of the needed abatement technology, long term carbon reductions become more cost effective. This means that providing too many price containment measures in the cap and trade system may have the perverse outcome of both delaying needed emissions reductions and of increasing longer term compliance costs by stymieing innovation and deployment of technological advancements.

ARB should carefully consider this dynamic when selecting a methodology for establishing price containment mechanisms, including the price ceiling and price containment points (“speed bumps”) at which additional reserve allowances will be released. While preventing price spikes and preventing volatility are desirable considerations, there is significant risk in going too far to preemptively counteract these risks. A healthy market must be allowed to fluctuate within a reasonable range, must accommodate some tolerance for risk, and must, above all, be allowed to enable price discovery in the carbon abatement marketplace.

AB 398 provides no guidance to ARB regarding the appropriate price points for the required speed bumps. For this reason, ARB must look to the broader purpose of the cap and trade program: to provide a market based mechanism that allows for cost effective emissions reductions. In order to achieve this goal, the market must be allowed to function in a manner that enables price discovery for carbon abatement. For this reason, ARB should set the “speed bumps” at market prices that are relatively close to the price ceiling. If the market is flooded with allowances whenever prices begin to climb even a small amount above the reserve price, the price discovery function of the allowance market will be significantly frustrated. Price containment mechanisms should not be treated as a means of keeping prices artificially low. Rather, they should be treated as safety valves that will hopefully never be called upon – failsafes to ensure that we do not breach the price ceiling. In order to allow the market to cool off in this situation, without undermining the price discovery function of the market, ARB should

set both speed bumps well above the median available market price. It would be unreasonable to set the speed bumps below the median price; a market that has not even reached a median within an acceptable range of prices cannot be said to be “overheating” in any way. CARB should evaluate levels such as 75%, 85% and 95% of the price ceiling as potential speed bump points.

In selecting a price ceiling calculation methodology, AB 398 provides somewhat more guidance. The statute directs CARB to consider among other factors, “the full social cost associated with emitting a metric ton of greenhouse gases” and “the cost per metric ton of greenhouse gas emissions reductions to achieve the statewide emissions targets.”¹⁹⁹

The former condition provides some guidance as a starting point for assessing potential price ceilings. AB 197 defines the “social costs” of greenhouse gases as an “estimate of the economic damages, including, but not limited to, changes in net agricultural productivity; impacts to public health; climate adaptation impacts, such as property damages from increased flood risk; and changes in energy system costs, per metric ton of greenhouse gas emission per year.”²⁰⁰ These costs have been traditionally externalized by polluting entities in order to deflect the full cost of doing business onto citizens who do not benefit economically from the companies’ increased profit margins. CARB should set a price floor that reflects a conservative estimate of these costs, and consider a price ceiling that is some multiple of the price floor and reflects a higher-impact estimate of the social costs of greenhouse gases.

Methodologies vary in assessing the social cost of greenhouse gases, but the United States Environmental Protection Agency, employing a highly conservative methodology that likely underestimates the full costs of carbon pollution, estimated a central range of \$42 and \$50 per tonne CO₂e in 2020 and 2030, respectively, in 2007 dollars.²⁰¹ In 2017 dollars, these values would be \$50 to \$60. Low whole number multiples of these costs suggest that a price ceiling of \$100 to \$180 per tonne in today’s dollars, adjusted annually for inflation, would not be disproportionate to the present and past damage carbon pollution imposes on society. These numbers are also consistent with EPA’s higher impact estimate (95th percentile at 3% discount rate) of \$123 and \$152 per tonne in 2007 dollars.²⁰² CARB should consider the most recent best available science in estimating the social cost of carbon, and consider price ceilings that reflect a

¹⁹⁹ California Health and Safety Code § 38562(c)(2)(A)(i)(III) and (VI).

²⁰⁰ California Health and Safety Code § 38506

²⁰¹ Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866 (May 2013, Revised August 2015). This represents among the lowest reasonable estimates of the social cost of carbon. A 2016 study published in Nature Climate Change, for example, estimated the Social Cost of Carbon in 2015 to be \$220 per tonne. Frances C. Moore and Delavane B. Diaz, “Temperature impacts on economic growth warrant stringent mitigation policy,” Nature Climate Change 5, 127–131 (2015), <https://www.nature.com/nclimate/journal/v5/n2/full/nclimate2481.html>.

²⁰² https://19january2017snapshot.epa.gov/climatechange/social-cost-carbon_.html

precautionary approach to the inherent uncertainty in estimating the damage caused by carbon pollution.

The latter condition, the cost of necessary abatement technology, is also difficult to predict with accuracy, in part because no jurisdiction has ever attempted to achieve emissions reductions at the scale and to the degree that California is attempting to drive through the 2020-2030 cap and trade system. Nevertheless, CARB should examine best available economic modeling and expert resources in attempting to assess what carbon price will be needed in order to enable the commercialization of technologies that will be required in order to reach our 2030 targets, and should provide a buffer above that level to take a conservative approach. If CARB sets the ceiling too low, we risk missing or delaying the opportunity to develop these technologies, which delays their development and cost reduction, which in turn will make reaching our ultimate decarbonization goals even more difficult. (NEXTGEN)

Response: The commenter recognizes that multiple factors must be assessed in developing cost containment levels through the price ceiling and price containment points. CARB staff notes that the factors identified by the commenter were considered, and that the ISOR (pp. 28-41) describes how each AB 398 factor for the price ceiling, and the resulting analysis for the price containment points, was set. See also Response to 45-Day Comment B-3.15 for more discussion on the assessments undertaken to develop the price ceiling consistent with AB 398 and the existing program design. See also Response to 45-Day Comment B-3.14 for a discussion of how the new post-2020 Reserve and price ceiling work in coordination with other features of the Program that provide compliance flexibility to meet the 2030 target reliably and cost effectively.

CARB did not accept the proposal to set the new Reserve tiers at some combination of 75, 85, or 95 percent of the distance between the ARP and price ceiling contained in the comment for two reasons. First, the resulting difference between the new Reserve tier prices and the Price Ceiling might be too narrow for the tiers to operate as independent Reserve levels. The realization that the 2013-2020 Reserve tiers may be too close together is what led staff to create the single Reserve tier structure contained in the regulations which came into effect on October 1, 2017. See Response to 45-Day Comments B-3.11 for a further discussion of why the post-2020 Reserve tiers are appropriate, and allow for a wide range of market price discovery as requested by the commenter.

See Response to 45-Day Comment B-3.7 for a further discussion of the Social Cost of Carbon. Changes to the ARP are out of scope for this rulemaking, including the commenter's suggestion to increase the ARP price path. Notwithstanding this, see Response to 45-Day Comment B-3.8 for a discussion of why the auction reserve price is set at an appropriate level.

Considerations in adopting a Price Ceiling

B-3.6. Comment:

Chapter 7: Price Ceiling Considerations

Authors: Quentin Foster and Dallas Burtraw

A. Context

This document seeks to provide CARB with input to inform one of the important design elements now a part of the cap-and-trade program: the allowance price ceiling.

The fact that California is four years ahead of schedule to meet its 2020 greenhouse gas reduction goals increases the likelihood that it is indeed possible to build more ambition into the design of the program post-2020. However, uncertainty about market outcomes, technological change, and related policies makes it difficult to predict the allowance price over the next decade although the price floor and previous price containment reserve as well as many other market features provided some helpful stability and predictability. One of the new design elements intended to further mollify uncertainty about the allowance price is the inclusion of a price ceiling. The price ceiling is intended to provide a stronger level of assurance to the Legislature that marginal costs to consumers and producers associated with a declining cap post-2020 do not rise to levels that are economically or politically unsustainable. It also is expected to further limit market volatility. Importantly, California's price ceiling design takes an innovative approach to protecting environmental integrity by requiring that any instrument sold at the price ceiling is backed up by a reduction purchased with the revenue on at least a ton-for-ton basis.

B. Key considerations

1. Implementation of a Price Ceiling

The price ceiling will be implemented beginning in 2021 and will make available alternative compliance instruments, which currently are called "price ceiling units," at a pre-determined price. The alternative instruments become available only after the reserves of allowances that are available at the three cost containment price tiers are sold, and all these compliance instruments are sold in a secondary process following the regular allowance auction. The highest of these price tiers will be at the price ceiling level. When the allowances that are available at this price tier (the price ceiling) are sold, price ceiling units become available.

A key consideration is the level of the price ceiling. After considering a range of options, CARB has proposed that the price ceiling be set at \$65 in 2021, and that it increase at 5% per year plus inflation. Given the time constraints, it is difficult for this committee to offer analysis on the specifics of the price ceiling level. Nonetheless, we observe that \$65 in 2021 (\$61.75 in real 2018 dollars) is well within the range of estimates of the social cost of carbon from the federal Interagency Working Group (IWG 2016). The

2020 estimate of the social cost of carbon with a 2.5% discount rate is about \$75 in 2018 dollars. We also observe that a higher price ceiling would likely increase the probability of capturing additional environmental benefits. For example, stronger incentives because of a higher price ceiling might create a better market for mitigation projects with substantial development costs and high average costs per ton, such as carbon capture and sequestration. Providing financial incentive for the development of such projects is valuable given the importance of adaptation efforts in response to more forest fires. At a lower price, these projects might not be economically viable, causing the state to miss the opportunity to further environmental ambition.

However, we also observe that a higher price ceiling has the potential to enable greater price volatility at prices between the price floor and the price tiers and price ceiling, at least in the short/medium term (i.e., over the course of several years), because the supply of abatement options at prices near the price ceiling may be inelastic for several years until new technology and investments are realized. (IEMAC)

Response: CARB notes that the commenters are not asking for changes within the adopted Regulation, and thus the comments are outside the scope of this rulemaking. Notwithstanding this, CARB concludes that the comment reflects much of staff's own deliberations.

See Response to 45-Day Comment B-3.15 for the means by which CARB balanced the legislative direction contained in AB 398 to design the price ceiling. See also Response to 45-Day Comment B-1.7 for a discussion of how at least half of the monies collected from the sale of Cap-and-Trade Program allowances at the quarterly auctions have been allocated for programs that benefit disadvantaged communities. These investments yield GHG and air pollutant co-benefits in these communities. See Response to 45-Day Comment B-3.7 for a discussion of the Price Ceiling and the Social Cost of Carbon.

Inclusion of Social Cost of Carbon as a Cost Containment Design Consideration

B-3.7. Comment:

- The state should develop an independent estimate of the social cost of carbon (SCC) to be included in a justification of the price tiers and price ceiling, accounting for the potential impact on disadvantaged communities from covered sources...

3. Environmental Justice

This committee supports the recommendations from the Environmental Justice Advisory Committee (EJAC) that strongly supports the inclusion of the social cost of carbon (SCC) values as a justification for price tiers and the price ceiling in CARB's modeling.

In light of the continued efforts by the Federal EPA that continues to lessen protections, California can set an important example and signal to EJ communities the importance of

impacts in vulnerable communities by including SCC. These values as estimated by the Interagency Working Group, while not tied to any specific price point at the ceiling or floor, can be helpful as a point of reference for policy-makers in the state to underscore the costs associated with carbon pollution, and help support greater environmental ambition. CARB's consideration of SCC can be significant to alleviating some of the criticisms from the EJ community, some of whom are concerned that a low price that did not reflect the SCC would have minimal impact in reducing emissions, specifically in low-income communities, and that taking the SCC into account would imply a price that triggered additional positive health outcomes. Without proper accounting of social costs, critics believe that market-based approaches are more likely to leave behind vulnerable communities and increase hotspots in marginalized regions. Sending a signal that support for a viable carbon market does not exclude the concerns of EJ communities in this state is important to further demonstrating that the social impacts of climate change deserve the same focused attention of the agency as does the health of the atmosphere. An important consideration is how the increased emissions associated with price ceiling units will impact disadvantaged communities, and how measures to account for these emissions are designed...

5. Lessons from literature

Public comments to the committee draw attention to literature on the social cost of carbon that considers equity weighting and alternative discount rates, as well as damages that are not monetized because of uncertainty, which yield substantial variation in the social cost of carbon (e.g. Adler et al. 2017; Anthoff and Tol 2010, 2013)...

- 1) Damages from climate change are expected to be severe in California. The state should develop an independent assessment of the social cost of carbon to provide a guide for determination of the price ceiling and other price points in the cap-and-trade program. (IEMAC)

Comment:

This comment letter calls attention to the following points... (2) CARB should revise the proposed pricing trajectories to address the social cost of carbon...

(2) The proposed pricing trajectories should be revised to address the social cost of carbon.

As we pointed out in our March comments, AB 398 requires CARB to consider the full social cost of carbon in setting the price ceiling.²⁰³ While research assessing the true social cost of carbon continues to emerge, CARB's proposed 2030 price ceiling is well below the estimated range for the social cost of carbon, as acknowledged in CARB's

²⁰³ AB 398, Section 4.

March workshop presentation.²⁰⁴ CARB should revise its proposed pricing trajectories to, at a minimum, reflect the current scientific consensus on the social cost of carbon...

(2) The Price Signal Should Prioritize Early Action.

CEJA recommends that the price signal be set to prioritize early action. Early action will be essential for meeting our climate requirements and protecting disadvantaged communities, and early action can lead to greater reductions overall. As SB 32 states:

Continuing to reduce greenhouse gas emissions is critical for the protection of all areas of the state, but especially for the state's most disadvantaged communities, as those communities are affected first, and, most frequently, by the adverse impacts of climate change, including an increased frequency of extreme weather events, such as drought, heat, and flooding. The state's most disadvantaged communities also are disproportionately impacted by the deleterious effects of climate change on public health.²⁰⁵

SB 32 further provides that CARB "shall achieve the state's more stringent greenhouse gas emission reductions in a manner that benefits the state's most disadvantaged communities." One way to best protect disadvantaged communities is to set a price signal that will motivate early reductions. Without a high price signal, it is unlikely that Cap and trade, by itself, will change greenhouse gas emissions, especially in the early years.

In addition, a high price signal is consistent with the trajectory that the state has set for itself. SB 32 requires that greenhouse gas levels are reduced to "at least 40 percent below the statewide" GHG level from 1990.²⁰⁶ In addition, Executive Order S-03-05 requires the State to achieve 80 percent below 1990 greenhouse gas levels in 2050. The greenhouse gas reduction path mandated by these authorities does not impose an artificial stopping point at the SB 32 mandate, but rather directs state agencies to fundamentally change the our state into one that does not rely on fossil fuels.

A higher price signal is also consistent with requirements for CARB to consider the social cost of carbon. When establishing the price ceiling, CARB is required to consider, among other things: "[t]he full social cost associated with emitting a metric ton of greenhouse gases."²⁰⁷ Therefore, CARB is correctly considering that the "[a]cademic study that found the existing social cost of carbon is too low and could be closer to \$220 (\$2015)."²⁰⁸ Given this, the value of \$150 in 2030 may very well be too low.²⁰⁹ CARB

²⁰⁴ https://www.arb.ca.gov/cc/capandtrade/meetings/20180302/ct_workshop_3-1-18.pdf, Slide 14.

²⁰⁵ SB 32 (2016).

²⁰⁶ See Cal. Health & Safety Code § 38566.

²⁰⁷ Section 4, AB 398.

²⁰⁸ https://www.arb.ca.gov/cc/capandtrade/meetings/20180302/ct_workshop_3-1-18.pdf at Slide 14.

²⁰⁹ See March 21, 2018 CEJA and APEN Comments, p. 4 (discussing legislative analysis and energy innovation analysis).

should maintain the high end of the proposed price ceiling in 2030 and conduct additional economic modeling with independent experts. (CEJA)

Comment:

3. Ceiling price

The ceiling price proposed by ARB could easily be below the level needed to drive the state's emissions down to 40% below 1990 levels by 2030. It is also far below the actual social cost of carbon in California.

Social cost of carbon

The actual social cost of carbon in California is substantially higher than most values of the social cost of carbon derived from integrated assessment models and the ceiling price proposed by ARB in its draft regulatory amendments, for three reasons.

First, these models only include a subset of total damages that were monetizable. Important damages are left out of the models (effectively treating these damages as having zero cost). Examples of damages left out of the models are the effect of climate change on conflict, the effect of ocean acidification (Anthoff & Tol, 2013) and the reduction in wellbeing caused by seeing others' suffering around the world and by knowing that we are responsible for this suffering and loss.

Second, the value of life and wellbeing of a poor person are considered by these models to be less than the value of a wealthy person's life, while the social cost of carbon is estimated as a single global figure. The different valuation is because sickness and mortality of a poor person has less absolute impact on global GDP than that of a wealthy person. To be ethically consistent, the social cost of carbon should also be varied across regions, reflecting that a dollar has more value to a poor person than to a wealthy person.

Third, these models put a greater value on the wellbeing of a person today than on the wellbeing of people in the future through the use of a discount rate.

One study attempts to correct for the second concern using an equity-weighted model. Under an equity-weighted model the social cost of carbon is higher for countries with greater per capita wealth. The study runs one integrated assessment model (FUND) with equity weighting, and finds that the social cost of carbon in the United States is two to eight times higher than the non-equity weighted estimate, depending on the equity principle used (Anthoff & Tol, 2010).

Another study attempting to address points two and three together applies an equity weighting and no discount rate. This study finds that the social cost of carbon in the United States is on the order of \$2000 to \$5000 per tCO₂ (Adler et al., 2017, figure 4).

This discussion does not necessarily suggest implementing a ceiling price of \$2000 or higher, but instead notes that any ceiling price chosen will be less than California's

social cost of carbon. It also suggests that the ceiling price should be set at a level that is high enough to drive the reductions needed to meet the state's 2030 target with a high degree of certainty.

Price of carbon needed to drive reductions

Before finalizing the ceiling price, I urge ARB to consult with researchers who have performed bottom up technical analyses of the costs of reducing emissions in California in the major emitting sectors, including transportation, buildings, and major industries like cement, as well as various forms of carbon sequestration that could be incentivized with climate funds. Given the uncertainties in economy-wide models, and how dependent model results are on the assumptions used, bottom- up engineering analyses of key sectors provides important information to establish whether the proposed carbon price ceiling is confidently above the carbon price needed to achieve the 2030 target.

Cited material:

Adler, M., Anthoff, D., Bosetti, V., Garner, G., Keller, K., & Treich, N. (2017). Priority for the worse-off and the social cost of carbon. *Nature Climate Change*, 7, 443.

Anthoff, D., & Tol, R. S. J. (2010). On international equity weights and national decision making on climate change. *Journal of Environmental Economics and Management*, 60(1), 14-20.

Anthoff, D., & Tol, R. S. J. (2013). The uncertainty about the social cost of carbon: A decomposition analysis using fund. *Climatic Change*, 117(3), 515-530.

(HAYA)

Comment:

Social Cost of Carbon

The Board should consider revising the proposed price floor, price containment points, and ceiling price trajectories in order to ensure that they adequately address the present scientific consensus regarding the social cost of carbon.

Cap-and-trade allowance prices should reflect the minimum price required in order to achieve cost effective emissions reductions in line with our 2030 target and long term trajectories, but they should also help to ensure that pollution-related externalities are fully internalized by the industries that profit while their pollution harms us all. In a previous comment we noted that, so long as allowance prices remain below the cost per ton marginal excluded complementary measure, the cap-and-trade system is, by definition, operating in a cost-effective manner, insofar as compliance through the cap-and-trade system is allowing the market to discover emissions reductions at lower cost than direct regulation would produce. The IPCC, in its report issued in October 2018 estimated that a 2030 carbon price would need to be at least \$135/ton in order to

provide a sufficient price signal to avoid the most catastrophic climate impacts. The proposed rule would prevent carbon prices from reaching this minimum projected level even if emissions in California do not fall to their required level and if this is the lowest cost-effective price sufficient to drive the required level of pollution reduction.

It is likely and desirable, however, that prices need never approach this level in order to achieve our targets, and that the Board may wish to ensure that prices remain below both the strict cost-effectiveness threshold or the IPCC's projected minimum effective price. But, it would be an exercise in false economy to set the price cap so low that it also excludes a true social cost of carbon. If it is impossible that the price to pollute a marginal ton of carbon dioxide could ever match or exceed the price of the harm that ton of pollution will cause, there will always be an implicit economic subsidy that all of us pay to polluters. The band of available prices within the carbon market should, at minimum include the possibility that prices equal a scientifically grounded social cost of carbon, if not provide room for prices well in excess for this level to allow for technology markets to develop, spurred by as accurate a price signal as can be obtained.

The proposed price band adopts a price ceiling in 2021 significantly lower than the existing projected single tier price, and maintains the current floor price trajectory through 2030. As a result, the ceiling price in 2030 is well below modern estimates of the social cost of carbon.

As scientists and economists continue to evaluate the social cost of carbon, they are consistently finding that previous studies tended to ignore important variables that may be difficult to quantify, but that tend to increase costs or to otherwise express overly conservative estimates. A recent study, for example, estimates 2030 costs to range from \$177 to \$805 a ton, with a most likely estimate of \$417 per ton.²¹⁰ Other studies have found a somewhat lower range with a best estimate of \$200 per ton²¹¹ or \$150–\$200 per ton.²¹²

In order to ensure that the cap-and-trade program does not exclude the possibility of allowance prices reaching the social cost of carbon, CARB could adjust the price floor and price ceiling escalation rates in a variety of ways without creating major disruptions to the market. If, for example, CARB maintains the proposed pricing structure, but maintains the projected single tier price in 2021 as the price ceiling, rather than setting the price ceiling to a lower level in 2021, this change alone would bring the 2030 price ceiling significantly closer (but still well below) the social cost of carbon. If CARB adopts this change and increases the annual reserve price escalation rate to 7% beginning in

²¹⁰ Ricke et al, Country-level Social Cost of Carbon, *Nature Climate Change* 8, pages 895–900 (2018), https://www.nature.com/articles/s41558-018-0282-y?utm_source=Nature_community&utm_medium=Social_media_advertisingCommunity_sites&utm_content=BenJoh-Nature-MultiJournal-Social_Sciences-Glob&utm_campaign=MultipleJournals_USG_SOCIAL#ref-CR3

²¹¹ Moore & Diaz, Temperature Impacts on Economic Growth Warrant Stringent Mitigation Policy (*Nature Climate Change* volume 5, pages 127–131 (2015), <https://www.nature.com/articles/nclimate2481>

²¹² Pindyck, R. S. The Social Cost of Carbon Revisited (National Bureau of Economic Research, 2016), <http://web.mit.edu/rpindyck/www/Papers/SCCRevisitedNov2016.pdf>

2022, the 2030 ceiling price comes closer to approximating the lowest value projected by the IPCC to effectively combat the worst effects of climate change. Finally, CARB could make a one-time adjustment to the floor and ceiling price in 2021 to set it to \$20, rather than \$16.77, and adopt a price ceiling of \$80. If CARB adopts these starting points and a 7% escalator, the ceiling price in 2030 begins to approach the low end of modern social cost of carbon estimates at approximately \$147. A similar result would occur if CARB maintained the current price floor and projected single tier price, but applied an 8% annual escalator beginning in 2022.

The methodology discussed here for establishing the available range of market prices may be overly conservative, despite more closely aligning with minimum IPCC recommendations and with low social cost of carbon estimates. The maximum possible carbon price in 2030 would still fall well below most social cost of carbon estimates, and it falls on the very low end of the range of available cost-effective maximum prices, insofar as it is far below the marginal cost of the next excluded complementary measures from the scoping plan. CARB may therefore wish to consider other methodologies that result in higher floor and ceiling prices as well... (NEXTGEN)

Comment:

First, the price ceiling drops off significantly from current trajectory of the single reserve tier in 2020. It doesn't catch up with that until 2027. And while we see little risk of the price ceiling actually being reached under current market rules, we are concerned that this trajectory does exclude any possibility that market prices ever actually match or really remotely approach modern estimates of the social cost of carbon. We ask that the price ceiling and potentially the floor would be revised to better approximate the social cost of carbon, while still remaining highly cost effective compared to any additional direct regulations that may be required if cap and trade does not produce the level of reductions that are needed in order to comply with SB 32. (NEXTGEN2)

Response: The commenters state that an independent estimate of the social cost of carbon should be incorporated as a point of reference in the adopted Regulation's price ceiling and tiers. The commenters advocate that inclusion of an independent social cost of carbon as a reference point would help support greater environmental ambition. In addition, one commenter adds that an increased estimate of the social cost of carbon would ensure the price ceiling considers damages that are not monetized because of uncertainty, and provide a signal to the EJ community that the Cap-and-Trade market is designed with focused attention on vulnerable communities and the avoidance of hotspots in marginalized regions.

With respect to the portion of the comments recommending changes to the auction reserve price, note that modifications to the auction reserve price were not included in this rulemaking, and the comments are therefore outside the scope of the rulemaking.

In developing the adopted Amendments, CARB followed AB 398's legislative direction to CARB in order to strengthen key cost containment features of the Cap-and-Trade Program post-2020. In response to AB 398's direction, the adopted amendments maintain the ability of the Program to deliver the necessary GHG emission reductions to help achieve the state's GHG reduction targets while ensuring robust cost containment through the creation of a price ceiling.

The adopted amendments maintain continuity with the Program's current cost containment design features. The proposed price ceiling retains the 5 percent annual escalation of the current 2013 through 2020 Reserve and the Auction Reserve Price and it roughly maintains the cost range that would have been provided by the current Regulation, only to slightly exceed the current regulation beginning in 2027. This price range between the floor and ceiling allows for price discovery across a consistent range for all periods of the Program, while ensuring the lowest cost reductions are targeted first. Preserving this price range also provides sufficient space for the two new post-2020 Reserve tiers to operate at a meaningful fixed distance between the two points.

AB 398 directed CARB to consider the social cost of carbon (SC-CO₂), among other factors, in developing the price ceiling in the adopted amendments. As stated in the 2017 Scoping Plan,²¹³ the United States Interagency Working Group (IWG) describes the social costs of carbon as follows:

The social cost of carbon (SC-CO₂) for a given year is an estimate, in dollars, of the present discounted value of the future damage caused by a 1-metric ton increase in carbon dioxide (CO₂) emissions into the atmosphere in that year, or equivalently, the benefits of reducing CO₂ emissions by the same amount in that year. The SC-CO₂ is intended to provide a comprehensive measure of the net damages – that is, the monetized value of the net impacts – from global climate change that result from an additional ton of CO₂.

These damages include, but are not limited to, changes in net agricultural productivity, energy use, human health, property damage from increased flood risk, as well as nonmarket damages, such as the services that natural ecosystems provide to society. Many of these damages from CO₂ emissions today will affect economic outcomes throughout the next several centuries.²¹⁴

The adopted regulation's price ceiling was set in a manner, in part, informed by the Interagency Working Group's (IWG) methodology to assess the Social Cost

²¹³ https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.

²¹⁴ From The National Academies, Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide, 2017, available at: <http://www.nap.edu/24651>

of Greenhouse Gases.²¹⁵ This methodology relies on a standardized range of assumptions and can be used consistently when estimating the benefits of regulations across agencies and around the world. The IWG, comprised of scientific and economic experts, recommended the use of SC-CO₂ values based on three integrated assessment models (IAMs) developed over decades of global peer-reviewed research.²¹⁶

As one commenter notes, the IPCC has stated that the IWG SC-CO₂ estimates are likely underestimated due to the omission of significant impacts that cannot be accurately monetized, including important physical, ecological, and economic impacts.²¹⁷ These omitted damages include the risk of increased flooding, the impacts on labor productivity from extreme heat, increased ozone pollution and wildfire smoke, and the impact of potential migration.²¹⁸

As one commenter also notes, the SC-CO₂, while intended to be a comprehensive estimate of the damages caused by carbon globally, does not represent the cumulative cost of climate change and air pollution to society. There are additional costs to society outside of the SC-CO₂, including costs associated with changes in co-pollutants, the social cost of other GHGs including methane and nitrous oxide, as well as costs that cannot be included due to modeling and data limitations. CARB continues to engage with experts as there are efforts underway to better monetize the full impacts of climate change.

See Response to 45-Day Comment B-1.3 for a discussion of Cap-and-Trade's consistency with the direction of AB 197. See Response to 45-Day Comment B-1.7 for a discussion of Cap-and-Trade and disadvantaged communities. In addition, one commenter requested a consideration of how price ceiling units will be designed. As indicated in the ISOR (p. 48), future regulatory amendments will be necessary to identify eligible emissions reductions achieved using price ceiling unit sales proceeds. These reductions must be real, permanent, quantifiable, verifiable, enforceable, and in addition to any greenhouse gas emission reduction otherwise required by law or regulation and any other greenhouse gas emission reduction that otherwise would occur. Possible sources could be sector-based offset credits from future approved programs that

²¹⁵ Originally titled the Interagency Working Group on the Social Cost of Carbon, the IWG was renamed in 2016.

²¹⁶ Additional technical detail on the IWG process is available in the Technical Updates of the Social Cost of Carbon for Regulatory Impact Analysis – Under Executive Order 12866. Iterations of the Updates are available at: <https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/for-agencies/Social-Cost-of-Carbon-for-RIA.pdf>, <https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/scc-tds-final-july-2015.pdf>, and https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/scc_tsd_final_clean_8_26_16.pdf.

²¹⁷ See https://www.ipcc.ch/publications_and_data/ar4/wg3/en/ch3s3-5-3-3.html.

²¹⁸ See Table 2. Damages Omitted from the [IAWG] SCC in http://policyintegrity.org/files/publications/SCC_State_Guidance.pdf.

reduce emissions from tropical forests and other uncapped sectors. See Response to 45-Day Comment B-5.4 for a further discussion of Price Ceiling Units. See Responses to 45-Day Comments B-1.3 and B-2.1 for CARB's analysis supporting the adopted Regulation, including a determination that the market is not in a state of oversupply that would jeopardize achieving the 2030 target. Finally, see Response to 45-Day Comment B-3.15 for a broader assessment of how CARB staff evaluated the price ceiling factors required by AB 398.

Price Floor and Ceiling, Social Cost of Carbon, and Statutory Authority

B-3.8. Comment:

In further developing its Proposed Amendments, ARB should:

- Take into account the social cost of carbon (SC-CO₂) in setting both the price ceiling and the Auction Reserve Price (price floor);...

Background

In 2006, California enacted Assembly Bill 32 (AB 32), requiring a sharp reduction in greenhouse gas emissions.²¹⁹ The goal was to return the state to 1990 emissions levels by 2020.²²⁰ ARB was charged with attaining this goal by promulgating regulations. Beginning in 2012, ARB implemented the nation's largest cap-and-trade program.²²¹ The program caps aggregate greenhouse gas emissions from sources in the state and requires certain emitters (covered entities) to hold an allowance for each ton of carbon they emit. Free allowances are allocated to firms by the state, while the remainder is placed up for auction. Those allowances not sold at auction are placed in a reserve for possible future sale.²²² The auction market for allowances is administered by ARB and is subject to various constraints such as the Auction Reserve Price (price floor) and reserve tiers. Additionally, firms are free to buy and sell allowances amongst themselves.²²³ Allowances are also available to firms that are able to document carbon offsets: verifiable, actual emissions reductions achieved elsewhere within the United

²¹⁹ See CAL. HEALTH & SAFETY CODE § 38500 et seq.

²²⁰ Assembly Bill 32 Overview, CALIFORNIA AIR RESOURCES BOARD, <https://www.arb.ca.gov/cc/ab32/ab32.htm> (last visited Oct. 12, 2018).

²²¹ California Cap and Trade, CENTER FOR CLIMATE AND ENERGY SOLUTIONS, <https://www.c2es.org/content/california-cap-and-trade/> (last visited Oct. 21, 2018).

²²² CALIFORNIA AIR RESOURCES BOARD, OVERVIEW OF ARB EMISSIONS TRADING PROGRAM (2015) https://www.arb.ca.gov/cc/capandtrade/guidance/cap_trade_overview.pdf.

²²³ Id.

States.²²⁴ Under this program, California successfully met its goal of reaching 1990 levels two years early.²²⁵

In 2017, California legislatively renewed its cap-and-trade program in AB 398, extending it to 2030 and adding a variety of new features to improve the program's performance.²²⁶ AB 398 created a price ceiling in hopes of reducing market volatility and maintaining reasonable allowance prices in the face of increasingly ambitious greenhouse gas reduction targets.²²⁷ As a further stabilization measure, AB 398 added two price reserve tiers below the ceiling, allowing for a supply increase when the market price reaches a particular level.²²⁸ Like AB 32, AB 398 tasks ARB with implementing its program through regulations.²²⁹

Market Design

ARB Should Set Both the Price Ceiling and the Price Floor (Auction Reserve Price) by Taking into Account the Social Cost of Carbon (SC-CO₂)

In its comments of October 27, 2017 and March 16, 2018, Policy Integrity recommended that ARB set the price ceiling at least as high as the Interagency Working Group's (IWG) estimate of the social cost of carbon (SC-CO₂) in order to comply with AB 398's requirement to consider the "full social cost associated with emitting a metric ton of greenhouse gases."²³⁰ As discussed in those comments,²³¹ the IWG's 2015 "central" estimate is the best currently available estimate for the external cost of each

²²⁴ Offset Credit Issuance, CALIFORNIA AIR RESOURCES BOARD, <https://www.arb.ca.gov/cc/capandtrade/offsets/issuance/issuance.htm> (last visited Oct. 12, 2018).

²²⁵ Press Release, California Air Resources Board, Climate Pollutants Fall Below 1990 Levels for First Time (July 11, 2018) (on file with author).

²²⁶ Jason Ye, Summary of California's Extension of its Cap-and-Trade Program, Center for Climate and Energy Solutions (2017) <https://www.c2es.org/site/assets/uploads/2017/09/summary-californias-extension-its-cap-trade-program.pdf>.

²²⁷ Todd Schatzki & Robert Stavins, Key Issues Facing California's GHG Cap- and-Trade System for 2021-2030, Mossavar-Rahmani Center for Business & Government at Harvard Kennedy School, at 2 (2018), https://www.hks.harvard.edu/sites/default/files/FWP_2018-02_0.pdf [hereinafter "Key Issues"].

²²⁸ Id.

²²⁹ CAL. HEALTH & SAFETY CODE § 38562(c).

²³⁰ CAL. HEALTH & SAFETY CODE § 38562 (c)(2).

²³¹ See Institute for Policy Integrity, Comments on the October 12 California Air Resources Board Cap-and-Trade Regulation Workshop (Oct. 27, 2017), http://policyintegrity.org/documents/2017-10-27_CA_Cap-and-Trade_comments_FINAL.pdf (incorporated into these comments by reference); Institute for Policy Integrity, Comments on the March 2, 2018 California Air Resources Board Cap-and-Trade Regulation Workshop, Preliminary Discussion Draft, and Price Containment Concept Paper, https://policyintegrity.org/documents/Policy_Integrity_2018-03-16_CA_Cap-and-Trade_comments.pdf (incorporated into these comments by reference) [hereinafter "March Comments"].

ton of carbon dioxide emitted in a given year.²³² After considering the SC-CO₂,²³³ ARB has set the price ceiling at \$61.25 (in 2018 dollars) for 2021, with regular increases phasing in through 2030.²³⁴ These prices are consistently higher than the IWG’s central estimate of the SC-CO₂.²³⁵ Such a price ceiling will help California to internalize the SC-CO₂.

To increase the likelihood that the program will maximize social welfare, ARB should set the price floor—and not just the price ceiling—based on the IWG’s central estimate of the SC-CO₂. In particular, ARB should set the price floor and price ceiling symmetrically around the IWG’s central estimate of the SC-CO₂. In other words, the difference between the price floor and the SC-CO₂ should be the same as the difference between the price ceiling and the SC-CO₂. By setting the price floor and ceiling in this way, ARB would establish a “price collar” on emissions allowances centered around the best available estimate of the marginal benefit of carbon dioxide reduction.²³⁶ Moreover, ARB should explicitly consider the factors that bear upon how wide or narrow the price collar should be.

We first outline why these amendments to ARB’s proposal would help to internalize the full SC-CO₂. We then clarify that ARB has the legal authority to make them.

Why and How to Base the Price Floor on the SC-CO₂

A cap-and-trade program maximizes welfare when the marginal cost of abatement achieved under the program is equal to the marginal benefit of resulting emissions reductions.²³⁷ Assuming, then, that the central estimate of the SC-CO₂ accurately represents the marginal benefit of carbon dioxide reductions, welfare will be maximized if allowances clear at the central estimate. In order to maximize social welfare, allowances should clear at the IWG’s central estimate of the SC-CO₂. When allowances

²³² For more on the Interagency Working Group on the Social Cost of Greenhouse Gases, its SC-CO₂ estimates, and the SC-CO₂’s applications in state policy, see ILIANA PAUL ET AL., INST. POL’Y INTEGRITY, THE SOCIAL COSTS OF GREENHOUSE GASES AND STATE POLICY 9-12 (2017),

http://policyintegrity.org/files/publications/SCC_State_Guidance.pdf.

²³³ See CALIFORNIA AIR RESOURCES BOARD, PUBLIC HEARING TO CONSIDER THE PROPOSED AMENDMENTS TO THE CALIFORNIA CAP ON GREENHOUSE GAS EMISSIONS AND MARKET-BASED COMPLIANCE MECHANISMS REGULATION, STAFF REPORT: INITIAL STATEMENT OF REASONS (2018) 35–39, <https://www.arb.ca.gov/regact/2018/capandtrade18/ct18398.pdf> [hereinafter STATEMENT OF REASONS].

²³⁴ Id. at 192 tbl. 16.

²³⁵ Compare id. (setting out the price ceiling between 2021 and 2030) with id. at 37 tbl. 6 (describing the IWG estimates of the SC-CO₂).

²³⁶ See Peter John Wood & Frank Jotzo, Price Floors for Emissions Trading, 39 ENERGY POLICY 1746, 1751 (2011).

²³⁷ See Dallas Burtraw, Karen Palmer & Danny Kahn, A Symmetric Safety Valve, RESOURCES FOR THE FUTURE, 3 (2009), <http://www.rff.org/files/sharepoint/WorkImages/Download/RFF-DP-09-06.pdf> (“Policymakers advance economic efficiency when they set policy goals at levels that equate the marginal costs of additional pollution controls with the marginal benefits of improvements in environmental quality.”).

clear at the SC-CO₂, the full SC-CO₂ is internalized and, accordingly, covered entities have the optimal incentives to reduce emissions. Moreover, as we have discussed, the IWG’s central estimate of the SC-CO₂ is the best available estimate of it.

The price floor and the price ceiling are ways of insuring against uncertainty about market conditions. If the cost of reducing emissions is smaller than anticipated, there will be less demand for allowances, and accordingly allowances will clear for less than the social cost of carbon. Conversely, if the cost of reducing emissions is greater than anticipated, there will be more demand, and allowances will clear for more than the social cost of carbon. A price floor mitigated against the former form of uncertainty; a price ceiling mitigates against the latter.

Establishing a symmetric price collar around the ideal price of an allowance—in this case, the central estimate of the SC-CO₂—would effectively manage this uncertainty.²³⁸ If the collar’s midpoint is higher than the SC-CO₂, the market structure provides relatively more insurance against the risk of underestimating the cost of reducing emissions.²³⁹ Conversely, if the collar’s midpoint is lower than the SC-CO₂—as it is under ARB’s proposal—it provides relatively more insurance against the risk of overestimating the cost of reducing emissions.²⁴⁰ Both of these risks should be given equal priority in the market structure, in order to optimize for the likelihood of the market clearing at a price that maximizes social welfare.²⁴¹

The risk of overestimating the cost of reducing emissions has been especially salient in California—both in the pre-2020 program and in comments on the post-2020 program—making it especially important that ARB peg not just its price ceiling, but also its price floor to the central estimate of the SC-CO₂. Numerous commenters have raised concerns that California is oversupplied with allowances.²⁴² Throughout the history of California’s cap-and-trade program, the price of allowances has remained at or near the price floor.²⁴³ AB 398 was designed in part to address the glut of allowances that kept market prices hovering near the price floor and sometimes not clearing at all.²⁴⁴ However, several experts have predicted that these consistently low prices will continue

²³⁸ See *id.*

²³⁹ *Id.*

²⁴⁰ *Id.*

²⁴¹ See *id.* at 27 (“[A]lthough a high-side safety valve improves welfare, a symmetric safety valve improves welfare even further.”).

²⁴² See, e.g., Mason Inman, Michael Mastradrea, & Danny Cullenward, California’s “Self-Correcting” Cap-And-Trade Auction Mechanism Does Not Eliminate Market Overallocation, NEAR ZERO (May 23, 2018), available at <http://wp.nearzero.org/wp-content/uploads/2018/05/Near-Zero-self-correction-research-note.pdf>; Chris Busch, Oversupply Grows in the Western Climate Initiative Carbon Market 3 (Dec. 2017), <https://energyinnovation.org/wp-content/uploads/2018/02/WCI-oversupply-grows-February-update.pdf>.

²⁴³ See *id.* at 17-18.

²⁴⁴ See, e.g., David Roberts, California is About to Revolutionize Climate Policy... Again, VOX (May 3, 2017), <https://www.vox.com/energy-and-environment/2017/5/3/15512258/california-revolutionize-cap-and-trade..>

into the post-2021 regime.²⁴⁵ Accordingly, if the price floor is not set relatively close to the central estimate of the SC-CO₂, California's cap- and-trade program may fail to send a price signal that accurately reflects the damage caused by carbon emissions.

Though other commenters have suggested a number of solutions to the issue of overallocation,²⁴⁶ basing the price floor on the SC-CO₂ would be both a simple and effective way to mitigate the problem. The resulting higher prices, combined with our suggestion (further explained below) to raise the prices of unsold allowances, will mean that excess allowances will go unsold at market and later placed in the reserve—in effect, “removing” them from the marketplace.

In addition to designing the price collar to be symmetrical around the SC-CO₂, ARB should also consider the appropriate width of the price collar—that is, the distance between the price ceiling and the price floor. By setting the price ceiling at \$61.25 and the price floor at \$16.77 in 2021, ARB has adopted a relatively wide price collar.²⁴⁷ ARB should more explicitly explain whether this is the optimal width of the price collar, and it should consider adopting a narrower one. California should set the width of the collar at a level that will maximize expected social welfare, taking into account uncertainty regarding the characteristics of market participants, the distribution of expected damages from carbon emissions, leakage, and other relevant concerns.²⁴⁸ In making this determination, ARB should use analytical tools that are capable of assessing decisions in a stochastic setting, because uncertainty plays a key role in the agency's decisionmaking.

ARB's Has Legal Authority to Base the Price Floor on the SC-CO₂

ARB has the legal authority to base the price floor on the SC-CO₂. AB 398 does not prescribe how ARB is to set the price floor. Instead, it gives ARB broad discretion “to adopt greenhouse gas emissions limits and emissions reduction measures by regulation to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions in furtherance of achieving the statewide greenhouse gas

²⁴⁵ Severin Borenstein, James Bushnell & Frank Wolak, Energy Institute at Haas, California's Cap-and-Trade Market Through 2030: A Preliminary Supply/Demand Analysis, 2 (July 2017), <https://ei.haas.berkeley.edu/research/papers/WP281.pdf>.

²⁴⁶ See, e.g., Near Zero, Near Zero Comments on April 18 Workshop, <https://www.arb.ca.gov/lists/com-attach/1200-ct-4-26-18-wkshp-ws-Uz1RMIw8BSQKU1Qu.pdf>; Resources for the Future, Comments for California on Revisions to the Cap-and-Trade Regulation, <https://www.arb.ca.gov/lists/com-attach/1153-ct-4-26-18-wkshp-ws-WzIUJwZ1BCMhCwJj.pdf>.

²⁴⁷ See STATEMENT OF REASONS, *supra* note 17, at 30 tbl. 4 (listing values of price ceiling and price floor).

²⁴⁸ See, e.g., Harrison Fell, Dallas Burtraw, Richard Morgenstern, Karen Palmer & Louis Preonas, Soft and Hard Price Collars in a Cap-and-Trade System, RESOURCES FOR THE FUTURE (2010) <http://www.rff.org/files/sharepoint/WorkImages/Download/RFF-DP-10-27.pdf> (using predetermined round numbers as a collar width without tying them to the data itself); Alyssa Gilbert, Paul Blinde, Long Lam & William Blythe, Cap-Setting, Price Uncertainty and Investment Decisions in Emissions Trading Systems, U.K. Department of Energy and Climate Change, at 8 (2014) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/31191

emissions limit.”²⁴⁹ AB 32 provided similarly broad discretion,²⁵⁰ and ARB’s prior regulations implementing the price floor²⁵¹ reflect ARB’s grant of authority to “minimize costs and maximize the total benefits to California.”²⁵² Basing the price floor on the SC-CO₂ would be consistent with this authority. (POLICYINTEGRITY)

Response: The commenter encourages an increase to the Auction Reserve Price (ARP) to a level that would place the social cost of carbon halfway between the ARP and the price ceiling. Changes to the ARP were not proposed as part of this rulemaking and therefore are out of the scope of this rulemaking.

Notwithstanding this, when CARB originally set the ARP, CARB had to consider the AB 32 requirement that the Program result in reductions that were cost-effective. If prices are low because covered entities are able to obtain low-cost emission reductions, the institution of an ARP would represent a market intervention that could be seen as resulting in an arbitrary increase in the cost of the Program. This might be viewed as inconsistent with the cost-effectiveness requirement. However, one of the reasons for including an ARP in the original design was to provide a consistent minimum price signal to provide stable incentives for investment in direct reductions as well as offset projects. These investments would provide additional reductions that could reduce costs later on in the Program.

Staff believes the ARP is consistent with the AB 32 cost-effectiveness requirement because the ARP has been sufficient to support offset projects, as evidenced by the increased use of offsets in the second compliance period, and because the electricity sector is already responding to today’s carbon price by incorporating the price into dispatch models in response to the Cap-and-Trade Program. As the price increases, the signal will continue to drive such responses in other sectors. As noted in Response to 45-Day Comment B-1.3, the ability of each sector to react to a carbon price without merely reducing production is something that CARB has been evaluating for the past few years and discussing with industry and stakeholders.

See Response to 45-Day Comment B-1.3 for a discussion of existing design features that already support a steadily increasing carbon price signal. As discussed in that response, CARB expects a smooth transition from the current path of meeting our 2020 climate targets ahead of schedule, to the prices that will motivate further reductions to achieve our 2030 target. As noted in Appendix D, if it appears statewide emissions are not declining as needed, recognizing that year-to-year variability due to climate, global fuel prices, or economic factors can influence emissions, CARB staff will evaluate which sectors are not responding

²⁴⁹ CAL. HEALTH & SAFETY CODE § 38562(a).

²⁵⁰ See CAL. HEALTH & SAFETY CODE §§ 38510; 38560; 38570; 39600.

²⁵¹ See Cal. Code Regs. tit. 17 § 95911 (b)–(c).

²⁵² See CAL. HEALTH & SAFETY CODE § 38562(b)(1).

as anticipated, review all programs that cover those sectors, and ascertain why, as well as assessing the best path forward to ensure California stays on track to meet its legislatively established GHG targets.

See Response to 45-Day Comment B-3.7 for a further discussion of the social cost of carbon and the adopted Regulation's Price Ceiling. See Response to 45-Day Comments B-1.10 for an additional discussion of the ARP. See Responses to 45-Day Comments B-1.3 and B-2.1 for a discussion of modelling conducted in support of the adopted Regulation, and a discussion of CARB's position that no changes are necessary at this time to allowance budgets or banking rules.

Lower Price Ceiling and Slower Price Escalator

B-3.9. Comment:

COST CONTAINMENT PROVISIONS

We appreciate CARB's efforts to implement credible and enforceable cost containment mechanisms. Establishing such mechanisms now, while the market is stable, is indeed important and would prove more effective than making reactionary policy changes when abatement costs escalate prior to 2030. It would also provide regulated entities with the information and the confidence necessary to make policy decisions and prioritize investments in the appropriate areas – while both ensuring investments protect and better advantage people living in disadvantaged communities, and keep electricity rates affordable.

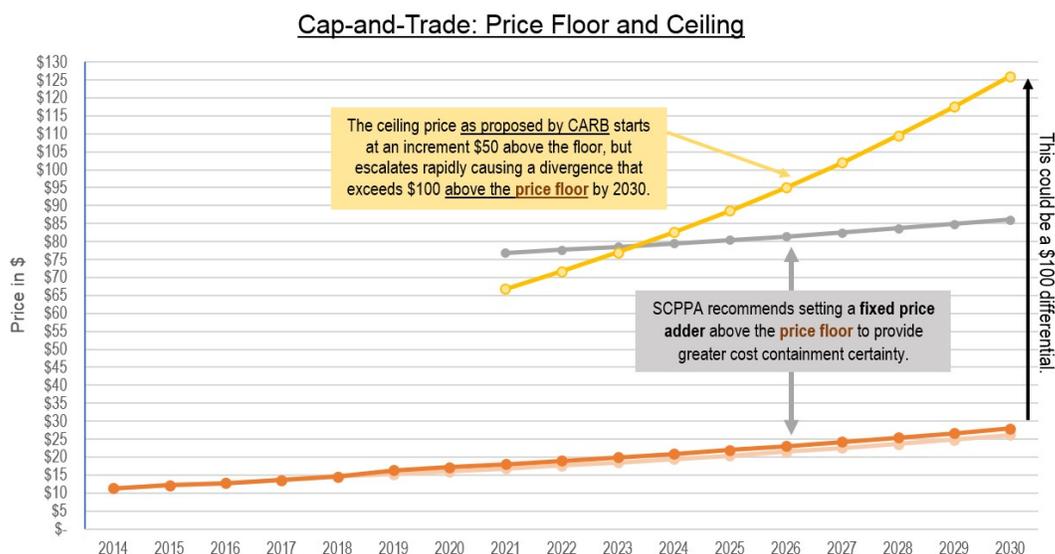
Cost containment “guard rails” also ensure politically sustainable allowance prices into the future, which can broaden support for aggressive and continued GHG emissions reduction programs for regulated entities and stakeholders alike. Attainment of our post-2020 climate change goals will require more effort across all sectors. Because CARB relies on third-party forecasts – which indicated cumulative shortages in the mid-2020's (having included Ontario) back in 2016, with estimated allowance prices then forecasted at \$53-70 under or around baseline future scenarios [Appendix D, Table 2], SCPA is concerned that evolving market conditions (e.g., new carbon neutrality goal, evolving zero-emission vehicles mandate, EIM secondary emissions compliance, passage and implementation of SB 100, uncertainty of Federal CAFE standards) warrant even more certainty in setting a price ceiling that would abide by the Legislature's specific directive to avoid adverse economic impacts. The Legislature's concern for scenarios whereby prices in multiple auctions would exceed price containment levels, coupled with their additional concern about whether potential allowance prices would reach the price ceiling for multiple auctions, indicates that the Legislature intended CARB to set a robust and meaningful price ceiling with price containment points low enough to avoid a market in which allowance prices are rapidly increasing – especially in the out years of the Program.

Ceiling Price

SCPPA strongly supports the inaugural installation of a price cap with a reasonable and predictable escalator. We recommend a price ceiling fixed at \$60 above the escalating floor price that is currently contained in §95915(f), beginning in 2021. We continue to believe that having a high degree of price certainty in the “out years” – when the “cap” continues to ratchet down while the “pool” of allowances also shrinks precipitously – would be an important component towards minimizing and being able to mitigate associated cost risks.

SCPPA believes that having a fixed price collar, as proposed here, would provide for a better cost containment mechanism to help ensure that programmatic costs can be affordable for low- and middle-income electricity customers across the State into the future. This approach continues the foundational policy of a steadily increasing price on carbon, without a converging or diverging price floor/ceiling.

The following chart depicts SCPPA’s concerns with the escalating price ceiling, as proposed, after the initial starting point in 2021. We believe such an escalation does not provide sufficient cost containment certainty in the critical out years of the Program. SCPPA’s proposed fixed price collar tied to the escalating floor price instead actually starts at a higher value in 2021, but maintains cost-containment in the critical out-years of the Program:



(SCPPA)

Comment:

So I'll be really brief and limit my comments to today's favorite topic of cost containment. I do think there was really good discussion amongst the Board earlier today on the difference between the actual allowance market price and the price ceiling. I think that was good that that got out and was discussed briefly. And towards that point, we do agree with staff's conclusions that prices may stay below the ceiling closer to

the floor for the near term and into the start of the next decade. So I thought that was a good discussion point. However, we do believe via our own modeling and via some external modeling, assessment of other models, we do think that there is at least a probability that prices in the next decade could go up to the floor -- up to the ceiling. We think there's a -- there's a probability there -- a statistical probability. So -- so our ask is simple. I'll just conclude. Our ask is simple and it's consistent with, I think, what you heard from WSPA earlier. Please keep the door open as we go forward on price ceiling. I think that it is important to the state's economy. Consider I think perhaps bifurcating that issue. Often separate and future rulemaking could be helpful. And even more specifically, please look at the five percent escalator on the price ceiling. When you tack on five percent escalation, plus what could be two and a half percent inflation, you get seven and a half percent escalation. Prices really would move up quickly. So please look at that specifically. (PHILLIPS662)

Comment:

I. Establishing a Sustainable Price Ceiling

AB 398 laid out six criteria that ARB must consider when determining a price ceiling for the Cap-and-Trade Program post-2020. It is critical that in balancing these criteria, ARB does not set a price ceiling level that jeopardizes the political viability of California's carbon pricing program...

However, PG&E opposes ARB's proposed price ceiling escalation rate post-2021 of 5% plus the Consumer Price Index (CPI) per year and believes it does not effectively balance the legislative direction from AB 398. PG&E is concerned that ARB Staff are discounting the possibility of actually reaching the price ceiling. For example, ARB's Staff Report states "CARB staff notes that in establishing the price ceiling, staff does not expect that allowance prices would reach that value, nor that a price ceiling is a feature that should be accessed in the operation of the Program."²⁵³ While the future is uncertain, several recent studies²⁵⁴ of California's program through 2030 show it is plausible that allowance prices could reach the price ceiling. It is therefore necessary that the price ceiling, including the escalation rate, be designed with the possibility of reaching it in mind.

PG&E believes that ARB's proposed price ceiling escalation rate produces price ceiling values that are too high, particularly in the second half of the 2020s when the program is at its most stringent and cost-containment is likely to be most important. For example, by 2030, the price ceiling would be \$95 in \$2018 (equivalent to roughly \$120 in 2030 dollars assuming two percent inflation); this is more than \$10 higher than the existing single tier reserve price in 2030 and \$35 higher than the IWG's central estimate of the 2030 SCC. As PG&E-NERA analysis, and ARB's own Standardized Regulatory Impact

²⁵³ ARB. Staff Report: Initial Statement of Reasons (ISOR). Sept. 4, 2018, Page 28.

²⁵⁴ For example, Borenstein et al 2018 and PG&E-NERA 2018

Assessment (SRIA) have shown, allowance prices well above ARB's existing single tier reserve price have negative effects on the economy and households.²⁵⁵ In addition, we are skeptical that allowance prices at the price ceiling levels proposed by ARB in the final years of the program, along with the resulting energy price impacts, would be politically acceptable. We thus disagree with ARB Staff's view that these higher price ceiling values post-2027 "...improve the likelihood of meeting the 2030 target."²⁵⁶ Rather, these price ceiling levels could endanger the program and possibly undermine an important policy tool for achieving the 2030 target cost-effectively.

PG&E also disagrees with ARB's justification for the price ceiling escalation rate. For example, ARB claims that "Maintaining the consistent escalation between the Auction Reserve Price and price ceiling allows for the two new post-2020 Reserve tiers to operate at a fixed distance between the two points. Otherwise, in later years, the two new post-2020 Reserve tiers will converge into the price ceiling, thereby negating the effectiveness of the Reserve price tiers to slow the acceleration of allowance prices."²⁵⁷ ARB's objective of maintaining distance between the price ceiling and the post-2020 Reserve tiers does not require consistent escalation rates for the floor and ceiling prices. Rather, ARB can maintain distance between any price ceiling trajectory and the post-2020 Reserve tiers by using its proposed approach for determining the post-2020 Reserve tier values in 2021 (i.e., X% of the distance between the floor and ceiling) in all other years through 2030.

ARB maintains the Draft Regulation proposal for the price ceiling is consistent with its past practices for this program ("This extension of the existing structure where the Auction Reserve Price and price ceiling values do not converge is consistent with how the Program has been designed since the very beginning."²⁵⁸). However, we note that ARB made an important change to its approach in 2017 in moving from the 2013-2020 program to the post-2020 program, switching from consistent escalation rates in the earlier years of the program (which results in divergence in the dollar gap between the floor and the ceiling) to a fixed adder in the post-2020 program (which avoids divergence in the dollar gap between the floor and ceiling). ARB explained the new approach from 2017 as follows "This approach would maintain a fixed difference between the two prices in terms of real value as it would be adjusted for inflation. In contrast, the existing schedule of increases in the Auction Reserve Price and the Reserve tier prices would lead to a divergence of these prices. With each annual increase, the Reserve would afford less protection against high prices, although with a correspondingly smaller potential to interfere with market price signals"²⁵⁹. We believe that ARB's current proposal will result in exactly the type of divergence between the

²⁵⁵ Summary of 2018 PG&E-NERA Analysis available here: <https://www.arb.ca.gov/lists/com-attach/40-ct-6-21-18-wkshp-ws-Uz0HZFckUGIGLVcn.pdf>

²⁵⁶ ISOR, Page 40

²⁵⁷ ISOR, Page 39

²⁵⁸ ISOR, Page 39

²⁵⁹ 2016 ISOR, Page 15 (available at <https://www.arb.ca.gov/regact/2016/capandtrade16/isor.pdf>)

floor and ceiling, and corresponding concern about high prices that ARB recognized as a concern in 2017. Similarly, as ARB already noted in 2017, it is possible to avoid convergence between the floor and ceiling by using a fixed real adder.

Therefore PG&E recommends that ARB utilize a fixed real adder above the floor price to establish the price ceiling. Given the existing floor price escalation rate, PG&E can support a fixed real adder to the floor price as high as \$60 in 2021-30 in 2021 dollars. This would result in a price ceiling that does not converge with the price floor, is in the range under consideration by ARB in this rulemaking and was used in the 2030 Scoping Plan, encompasses the IWG's central estimate of the social cost of carbon, and is consistent with the other criteria established by AB 398. (PG&E)

Comment:

CEILING PRICE AND ESCALATION RATES

IETA disagrees with CARB's justification for the price ceiling escalation rate. **CARB's objective of maintaining distance between the price ceiling and the post-2020 Reserve tiers does not require consistent escalation rates for the floor and ceiling prices.** Rather, CARB can maintain distance between the price ceiling trajectory and the post-2020 Reserve tiers by using its proposed approach for determining the post-2020 Reserve tier values in 2021 (i.e., X% of the distance between the floor and ceiling) in all other years through 2030.

CARB maintains this escalation proposal for the price ceiling is consistent with its past practices for this program. However, IETA notes that CARB made an important change to its approach in 2017 in moving from the 2013-2020 program to the post-2020 program, switching from consistent escalation rates in the earlier years of the program (which results in divergence in the dollar gap between the floor and the ceiling) to a fixed adder in the post-2020 program (which avoids divergence in the dollar gap between the floor and ceiling). CARB explained the new approach from 2017 as *"this approach would maintain a fixed difference between the two prices in terms of real value as it would be adjusted for inflation. In contrast, the existing schedule of increases in the Auction Reserve Price and the Reserve tier prices would lead to a divergence of these prices. With each annual increase, the Reserve would afford less protection against high prices, although with a correspondingly smaller potential to interfere with market price signals."*²⁶⁰ We are concerned that CARB's current proposal will result in exactly the type of divergence between the floor and ceiling, and corresponding concern about high prices, that CARB recognized as a concern in 2017.

IETA recommends a fixed real adder above the floor price to establish the price ceiling, which would avoid convergence or divergence between the floor and ceiling, as recognized as an issue by CARB in 2017. Based on the existing floor price and escalation rate, IETA recommends a fixed real adder to the floor price no

²⁶⁰ 2016 ISOR, p.15 (available at <https://www.arb.ca.gov/regact/2016/capandtrade16/isor.pdf>)

higher than \$60 in 2021-30 in 2021 dollars. This would result in a price ceiling that does not converge with the price floor, is in the range under consideration by CARB in this rulemaking and was used in the 2030 Scoping Plan, and is consistent with the other criteria established by AB 398. (IETA)

Comment:

1. TID supports a price ceiling that floats at a flat \$60/MT above the price floor

Language in AB 398 directs the establishment of a price ceiling where the “state board shall consider, using the best available science, all of the following:

- The need to avoid adverse impacts on resident households, businesses, and the state’s economy.
- The 2020 tier prices of the allowance price containment reserve.
- The full social cost associated with emitting a metric ton greenhouse gases.
- The auction reserve price.
- The potential for environmental and economic leakage.
- The cost per metric ton of greenhouse gas emissions reductions to achieve the statewide emissions targets established in Sections 38550 and 38566.”

TID appreciates how much time, effort, and stakeholder input was considered in establishing the proposed price ceiling. Staff’s proposal goes a long ways towards balancing setting the price ceiling too low, as to not incentivize real emissions reductions innovation, and too high, which, especially in the later years of the Program (2027-2030), could make the Program an economic and political pariah while having the high potential to cause emissions leakage. As proposed, the price ceiling could diverge significantly between floor and ceiling, causing uncertainty and, in effect, a doubling of the inflationary piece of the rise in the Reserve Price. The 5% + Core Price of Inflation (CPI) would make both the floor and ceiling rise according to that formula. Locking in the price ceiling at a fixed amount above the floor ensures that inflationary effects are counted only once. The flat \$60 adder would help long term planning entities like TID plan for the cost of future emissions reductions. This is especially important in the later years of the program, when the Program as a whole will see a tightening in allowance supplies, while also ensuring that the Cap & Trade Program has sufficiently high market prices to “achieve the [2020 and 2030] statewide emission reduction targets established in Sections 38550 and 38566.”²⁶¹ (TURLOCKID)

²⁶¹ Health & Safety Code § 38562(c)(2)(A)(VI).

Comment:

SMUD supports the proposal to add a price ceiling mechanism and add speed bumps or price containment points as required by AB 398 but suggests some differences in how these elements of the program should be structured...

C. Cost Containment Design Features

Price Ceiling Structure: SMUD believes the price ceiling structure included in the 45-day language should be modified. The whole point of a hard price ceiling is to provide market stakeholders with additional certainty about the longevity of the Cap and Trade program so that abatement investments are clearly going to pay off. If the price ceiling is set so high that market stakeholders believe policymakers will step in to suspend the program well before it is reached, it is pointless. A high price ceiling will likely reduce, rather than drive, investment in abatement technologies and actions. The province of Ontario's withdrawal from the linked Cap and Trade program after the provincial election this summer reinforces the importance of politically defensible price containment.

There is no modeling or projections known to SMUD that indicate Cap and Trade market prices will come close to the price ceiling in the early years of the next decade. Hence, the critical period for the price ceiling is the years 2025-2030, and ARB's proposed escalation of 5% plus inflation annually makes the ceiling level too high in these years. SMUD suggests a price ceiling mechanism that mirrors the current regulation for post-2020 APCR – setting a level that is a real increment above the floor price, starting at \$60 in 2021. This mechanism creates a ceiling price that starts significantly higher in 2021 but has a lower upward slope, yielding significantly lower ceiling prices by 2030.

SMUD recommends that the price ceiling sales procedure proposed in section 95915(f)(A) and (B) be replaced by the language similar to that in section 95913(k) in the current regulations, as follows:

~~(A) Beginning in 2021, entities may purchase allowances or price ceiling units from the price ceiling account at \$65 per allowance or price ceiling unit.~~

~~(B) After 2021, the purchase price will increase annually by five percent plus the rate of inflation as measured by the most recently available twelve month value of the Consumer Price Index for All Urban Consumers.~~

(A) Beginning in 2021, each year ARB will set the Price Ceiling Price equal to the annual auction reserve price determined for that year pursuant to section 95911(c)(3)(A), plus a fixed dollar amount.

(B) In 2021, the fixed dollar amount used to determine the Price Ceiling Price will be equal to \$60.

(C) In each subsequent year the fixed dollar amount will be the previous year's fixed dollar amount adjusted for the rate of inflation as measured by the most recently available twelve months of the Consumer Price Index for all Urban Consumers.

(GD) The financial... (SMUD)

Comment:

We support the cost containment provisions with some revisions. What we would like to see is something very similar to that -- remember that flatter line on the chart that you saw, a price ceiling that is at the price floor plus \$60, and at price containment points that are very simple, price ceiling plus \$20, and price ceiling plus \$40. That spreads those price containment points out. We want to have two distinct price pauses as the legislature intended at levels that allow cost-effective market investments. (SMUD2)

Comment:

JUG Members support a price range between the Ceiling and Auction Floor that allows for cost-effective reductions on the low end – and a politically sustainable program at its height. The utilities are interested in seeing final values for the ceiling that balance the need to incentivize GHG reductions while maintaining a politically viable program that is in line with the intent of AB 398. We think there are a couple ways to design a price ceiling that achieves those goals, such as a simple \$60 real price adder to the floor price starting in 2021, and commensurate changes to the two price containment points. That \$60 adder is similar to how the single price tier is determined today. Such an approach meets the criteria established in AB 398 for determining the price ceiling and would avoid divergence or convergence between the Auction Floor and the Ceiling. On the other end of the potential price range, JUG members believe CARB's existing schedule for the escalating floor price is a reasonable path forward that will balance the need to send a meaningful GHG price throughout our economy, even in times of low demand, against the need to shield our customers from artificially inflated costs that are unnecessary to achieve the intended reductions. (JOINTELECUTILS)

Comment:

The GUG also supports the consensus positions of the California electric utilities as outlined in the Joint-Utility Group letter on the following topics: 1) Establishing a Price Ceiling that allows for cost-effective reductions and a politically sustainable program, which can be achieved through approaches such as utilizing a fixed real adder of \$60 or below (in 2021 dollars) to the floor price...

In conclusion, the GUG believes that the viability and health of the post-2020 Cap-and-Trade program can be strengthened through... setting a sustainable price ceiling level as noted above. (JOINTGASUTILS)

Comment

2. Setting the Price Ceiling in Accordance with Statute

AB 398 SEC. 4. Section 38562 (c)(2)(A) requires CARB to establish a price ceiling, prescribing certain considerations to be incorporated into the process. SDG&E appreciates the difficulty in determining an appropriate ceiling price and urges CARB to consider the following criteria as laid out in AB 398:

- Avoiding adverse impacts on resident households, businesses, and the state's economy.
- The 2020 tier prices of the Allowance Price Containment Reserve (APCR).
- The full social cost of emitting a metric ton of GHGs (the Social Cost of Carbon).
- The auction reserve price.
- Minimizing economic and environmental leakage.
- The cost per metric ton of GHG emissions reduction to achieve the statewide emissions targets established in statute.

Furthermore, SDG&E feels that it is important to use a relevant and defensible price ceiling to protect from threatening the long-term viability and support for the Cap-and-Trade Program within the Western Climate Initiative (WCI) and other jurisdictions with which it might link in the future. To accomplish these objectives and maintain consistency with the current program design, we support price ceiling structures presented by the Joint Utilities Group (JUG). (SDG&E)

Comment:

CCEEB urges the ARB to:...

- Only increase the ceiling price annually by CPI...

Eliminate Price Escalators

The 2030 goal and subsequent allowance budgets are sufficiently stringent to drive pricing without the five percent escalator on the floor, price containment points and ceiling. By eliminating the five percent escalator, the price ceiling in 2030 will remain under \$100 (2030 dollars) and likely more politically palatable. As previously, indicated real wage growth has been stagnant over the course of California's climate change program and it is socially reasonable to mitigate the overall impacts to households. The environmental integrity of the Cap-and-Trade is the declining cap, not the allowance price so there is no need to design a program with prices as high as the proposed regulation. (CCEEB)

Comment:

We think that they are a good start, but there are still a few areas where some additional work is needed. On the price ceiling, we are concerned that staff's escalation factor leads to a divergence between the floor and the ceiling, which means less cost protection in the later years of the program when it is actually needed more. To address this concern, PG&E supports using a fixed adder on the floor to set the price ceiling, which would lead to a constant distance between the floor and the ceiling, which gives greater consistency and provides better cost protection in the later years. (PG&E2)

Comment:

This regulatory package has a variety of impacts on the Program which could directly impact CIPA members—most importantly the overall cost of compliance. Our comments are focused on the cost-containment aspects of the Proposal, including the establishment of an allowance price ceiling...

Staff's proposed price ceiling level of \$65 starting in 2021 and escalating at 5% plus inflation does not provide the cost-containment protections envisioned by AB 398. This value could easily exceed \$110/ton given even moderate inflation over the next decade. CIPA believes these values and the trajectory of the ceiling price that radically diverges from the floor is inappropriate. CARB has repeatedly stated that a stable and consistent increase in the floor price is a necessary component to the Program. Having a rapidly increasing ceiling price seems to be in contrast to that fundamental policy of sending a stable price signal. CIPA recommends a ceiling price trajectory more in line with the nominal rate of increase experience by the floor price. (CIPA)

Response: The commenters propose a lower Price Ceiling that is a fixed amount above the Auction Reserve Price (ARP). CARB disagrees with the comments and is not proposing changes to the adopted regulation's cost containment features.

The adopted amendments maintain continuity with the Program's current cost containment design features. The adopted price ceiling retains the 5 percent annual escalation of the current 2013 through 2020 Reserve and the Auction Reserve Price and it roughly maintains the cost range that would have been provided by the current Regulation, only to slightly exceed the current Regulation's Reserve price beginning in 2027. This price range between the floor and ceiling allows for price discovery across a consistent range for all periods of the Program, while ensuring the lowest cost reductions are targeted first. Preserving this price range also provides sufficient space for the two new post-2020 Reserve tiers to operate at a meaningful fixed distance between the two points. See also Response to 45-Day Comments B-3.15 for a discussion of the importance of, and appropriateness of, the 5 percent escalator applied to the post-2020 Reserve tiers and price ceiling.

Staff notes that while the 2017 amendments did create a fixed distance for the single Reserve tier and the APC, this was because with a single tier the existing post-2020 Allowance Price Containment Reserve was the single cost containment point at which additional allowances would be available to the market. Under the new post-2020 cost containment structure mandated by AB 398, two new Reserve tiers have been created below the new price ceiling. The adopted amendments set the prices for these two tiers below the prices the single Reserve tier is expected to reach under the existing regulation. In fact, the two new Reserve tiers will make 156 million allowances available at prices lower than the price of the current two lowest Reserve tiers would be under the existing regulation, if those were extended past 2020.

As discussed in the Initial Statement of Reasons, by placing the tiers' prices meaningfully below the price ceiling, the tiers can function with increased effectiveness relative to the current Reserve to provide early signals to market participants that prices could escalate higher. If the tiers are accessed through a Reserve sale, the new post-2020 Reserve offers initial cost relief through Reserve allowances, and a clear signal to all market participants of a potentially tight market. The expanded distance between the Reserve tiers and price ceiling, relative to the pre-2021 Reserve, ensures market participants will have time to initiate additional GHG reductions.

Response to 45-day Comments B-1.3 includes a discussion of the IEMAC's role in reporting on the economic and environmental performance of the Program. CARB is required to report to the Legislature, in consultation with the Independent Emissions Market Advisory Committee, if two consecutive auction settlement prices exceed the lower of the two new Reserve tier prices. The report would include an assessment of the potential for prices to reach the price ceiling for multiple auctions.

In addition, see Response to 45-Day Comments B-3.7 for a discussion of the full social cost of carbon (SCC). Staff review of estimates of the SCC led it to conclude that the current estimates of SCC would likely increase as newer analyses identified and monetized additional costs that should be included in the SCC. See Response to 45-Day Comments B-3.14 and B-3.15 for how many features within the entire Program support cost containment, why the escalator is appropriate, and a further description of how CARB assessed all AB 398 factors in setting the price ceiling.

Since the two new Reserve tiers make sufficient allowances available, and since many features of the Program provide built-in cost containment, staff has concluded that prices would rise more slowly to the price ceiling under the adopted amendments than prices would rise with a single Reserve tier under the existing Regulation. For these reasons, and the reasons discussed in Response to 45-Day Comments B-3.15, CARB therefore concludes the price ceiling

escalator does not pose a risk of prices rising too quickly to a high level, as could happen under a single tier mechanism.

CARB disagrees with one comment's assertion that the adopted amendments to the cost containment system would create uncertainty and counts inflation twice. Having the escalation mechanism in both the ARP and the price ceiling does not double count inflation. The same inflation rate would be applied to each price point.

CARB disagrees with one comment's assertion that the environmental integrity of the Cap-and-Trade is the declining cap, not the allowance price, so there is no need for a high price ceiling. Staff considers the two inseparable. As discussed in the 45-day Notice, the price ceiling cannot be set so low that covered entities' primary compliance strategy is to make substantial and continued use of the price ceiling units that would be made available for sale under the adopted amendments should allowances in the post-2020 Reserve tiers and price ceiling become exhausted. If the price ceiling were to be set at low levels that could encourage this compliance strategy throughout the 2020s, CARB would need to identify additional direct measures with which to meet AB 32 and SB 32 emissions reduction targets, moving towards implementing measures similar to Alternative 1 of the 2017 Scoping Plan. In the case of unexpected growth in business-as-usual emissions (e.g., due to an economic boom), cost containment cannot serve as a permanent fund of low cost compliance instruments with which to meet compliance obligations. Instead, the entire Cap-and-Trade Program is designed to minimize emissions leakage and avoid adverse impacts to households while sending a sufficient carbon price signal to prompt the emissions reductions necessary to meet AB 32 and SB 32 emissions goals.

With respect to the comment raising concerns with support for the price ceiling by other WCI jurisdictions, see Response to 45-Day Comments B-3.10.

Some comments express concern that CARB's forecasts led it to expect that the price ceiling mechanism is not likely to be accessed, and so did not fully assess the effect of the price ceiling escalator on the market. CARB conducted a Standardized Regulatory Impact Assessment (SRIA) that explicitly considers the economic impacts expected if market prices reached the price ceiling. In the SRIA (Appendix C to the ISOR), staff evaluated the market price increases that would be necessary for prices to increase from their current levels to the price ceiling over different time periods.²⁶² For example, to reach the price ceiling in 2030 from the November 2018 auction settlement price of \$14.65, market prices would have to increase 17% annually over the time period. The macroeconomic modeling suggests the Amended Regulation will only have minor impacts to the

²⁶² Updated Standardized Regulatory Impact Assessment, Released September 4, 2018, p. 62.

California economy.²⁶³ See also Response to 45-Day Comment B-1.3 for a further discussion on the modeling supporting the 2017 Scoping Plan and Cap-and-Trade Program.

Lower Price Ceiling to Not Discourage Linkage

B-3.10. Comment:

LEVEL OF A PRICE CEILING

In our previous comments, IETA suggested a range of \$60/tonne to \$80/tonne reaching roughly \$95/tonne nominally (at maximum) in 2030. In contrast, CARB's proposed price ceiling level reaches roughly \$120/tonne nominally in 2030. Contention continues to exist on this issue. IETA therefore strives to offer a new perspective, leveraging our unique international experience with linkage and leakage concepts.

IETA supports the notion of broad linkages with other jurisdictions, as such links lower overall compliance costs and drive efficiencies and cross-border compatibilities. Fortunately, there are an increasing number of potential linkage partners with 25 cap and trade programs in operation or scheduled for operation (World Bank and Ecofys, 2018). That said, there are certain prerequisites that must occur ahead of linkage in order to ensure success.

Leading academics have shown that aligning price ceiling levels could be important for the political economy and technical functioning of a linked cap and trade program (Burtraw, Palmer, Munnings, Weber, and Woerman, 2013). **Specifically, in a linkage setting with two jurisdictions with different price ceiling levels, the lower price ceiling level might propagate to the other jurisdiction by way of allowance exports (e.g., Haites and Wang, 2009).**

The average allowance price among the world's operating cap and trade programs – outside of WCI – is approximately \$7/tonne. **IETA is therefore concerned that a price ceiling level exceeding an order of magnitude higher than this average allowance price will discourage potential partners from considering linking with California.** All else equal, a lower price ceiling level would facilitate linkages with potential partners and therefore lower overall compliance costs.

IETA generally supports the minimization of economic and environmental leakage as California pursues its ambitious climate goals, a criterion outlined for consideration in setting the price ceiling level in Assembly Bill 398. IETA is concerned that, at the excessively high price ceiling level proposed by CARB, leakage rates will undermine the achievement of California's targets.

[The original comment, which includes a reference list, is available at <https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=ct2018>.] (IETA)

²⁶³ Ibid, p. 65.

Comment:

We are concerned, however, on a few key provisions....

California's desire to be a world leader is also impacted. By adopting various high priced ceiling -- very high ceiling prices, California signals to potential partners that high prices are acceptable. (CHEVRON)

Response: CARB disagrees with the comments and will not make the recommended changes.

Staff does agree that aligning price ceilings is important. However, the fact that other systems have lower market prices than ours does not suggest that CARB has set the price ceiling too high. In fact, a potentially more important factor in assessing potential linkages would be the Auction Reserve Price (ARP). The ARP has always been set above \$10 and is currently above \$15. One reason staff applied the 5 percent escalator to the price ceiling is to maintain a reasonable difference between the two prices in order to minimize the interference with market price discovery. As stated in the Initial Statement of Reasons, maintaining the consistent escalation between the Auction Reserve Price and price ceiling allows for the two new post-2020 Reserve tiers to operate at a fixed distance between the two points. Otherwise, in later years, the two new post-2020 Reserve tiers will converge into the price ceiling, thereby negating the effectiveness of the Reserve price tiers to slow the acceleration of allowance prices.

A lower price ceiling could also inhibit, rather than facilitate, linkage with other jurisdictions if those jurisdictions do not have similar cost containment mechanisms. As with any regulatory amendment process related to the Cap-and-Trade Program, and as noted in the ISOR (p. 18), CARB staff have discussed and coordinated with Québec staff on the adopted regulatory amendments, including the cost containment mechanism required by AB 398 and adopted by the Board. Québec is dedicated to ensuring continued smooth operation of the linked market and would, if determined to be necessary, harmonize its regulation.

Lower Reserve Tier Prices

B-3.11. Comment:

Price containment points should not be biased towards the price ceiling level. As a facility in a high leakage risk sector, Lhoist supports the use of price containment triggers to mitigate market volatility and to provide early pricing signals for escalating allowance costs. Current proposed trigger points are set at half and three-fourths of the distance between the Auction Reserve Price and price ceiling. Lhoist recommends setting these “speed bumps” at equal distances between the floor and ceiling price. Additionally, allocating more allowances to the first “speed bump” will further mitigate

pricing volatility as the prices escalate in future years of the Cap-and-Trade Program. (LHOIST)

Comment:

SPEED BUMPS

IETA supports a spacing of speed bumps that is one-third and two-third between the price floor and price ceiling as well as a greater number of allowances in the first, rather than the second, speed bump. Such a placement provides the maximum cushioning against price volatility. It also provides reasonable time for CARB and IEMAC to review market dynamics that might lead to rapidly increasing prices. (IETA)

Comment:

2. TID supports Tier I and Tier II “speed bump” pricing to be equidistant (1/3, 2/3) between the price floor and price ceiling.

CARB Staff proposes that the Tier I and Tier II pricing start at the “halfway point between of the Auction Reserve Price and the price ceiling in all years (starting in 2021)” and that the “second new post-2020 Reserve tier price fixed at the three-quarter point of the Auction Reserve Price and the price ceiling in all years (starting in 2021)”.²⁶⁴ TID understands that CARB Staff has determined that the proposed Tier prices are in line with the “window of price expectations”²⁶⁵, and that maintaining that continuity is important to those entities that have taken early action to reduce emissions. However, CARB Staff has full discretion to “[e]stablish two price containment points [new post-2020 Reserve tiers] at levels below the price ceiling.”²⁶⁶ TID believes the two price containment points should be set at a level that “minimizes costs and maximizes benefits for California’s economy”²⁶⁷, and should therefore be set evenly between the Auction Reserve Price and the Price Ceiling (which would be at the previously recommended \$60 above the Auction Reserve Price). When put too close to the price ceiling, the price containment points lose their effectiveness, and are less likely to prevent an extreme run on the market, which the price containment points are designed to do. (TURLOCKID)

Comment:

4. Price Containment Points: Structure the two (or more) price containment points -- a.k.a. “speed bumps” – evenly between the price ceiling and price floor, to help minimize volatility, in the case of unexpected price spikes...

Price Containment Points

²⁶⁴ Ct18isor, p. 29.

²⁶⁵ Ct18isor, Figure E, p. 35.

²⁶⁶ Health & Safety Code § 38562(c)(2)(B).

²⁶⁷ Health & Safety Code § 38501(h).

We also ask CARB consider where the price containment points are placed. An evenly placed set of containment points, in between the price floor and ceiling, will help minimize price volatility and any price spikes. (SILICONVALLEADERGROUP)

Comment:

Our comments are focused on the cost-containment aspects of the Proposal, including... two price tiers (also known as “speedbumps”)...

Similarly, CARB’s proposal of establishing the two price containment tiers, or speedbumps, at levels of $\frac{1}{2}$ and $\frac{3}{4}$ spacing between the floor and proposed ceiling do not meet the expectation of AB 398. There are specific provisions in AB 398 which trigger when these tiers are hit by the market signals. Setting them higher than necessary prevents those statutory actions (market analysis) from occurring. CIPA recommends that the price tiers be set at $\frac{1}{3}$ and $\frac{2}{3}$ intervals between the escalating floor and a reasonable ceiling price. (CIPA)

Comment:

A Well-Designed Price Ceiling and Speed Bumps Provide Effective Safeguards.

The state has historically emphasized the importance of having a climate change program that achieves the dual goals of meeting the state’s environmental targets while at the same time reduces the potential negative economic impacts of a carbon policy. To that end, AB398 directs CARB to develop a price containment mechanism that includes a price ceiling and two price containment points – speed bumps – which, if reached, would trigger additional allowances to be sold at a to- be-determined price structure.

Speed bumps are intended to help ease any panic in the market in the event of a run-up in prices. In order to protect consumers and the economy, AB398 also intended to set a price ceiling in the program that would keep the price of allowances in check, ensuring the price would not escalate beyond a certain point. Speed bumps are key cost containment points that are meant to stabilize the market, and, if reached, trigger the Independent Emissions Market Advisory Committee (IEMAC) to consider the implications of a rapidly increasing allowance price and how best to respond. Therefore, to be effective, the speed bumps must necessarily be placed at a substantial distance below the price ceiling substantial enough to provide a sufficient amount of time for the IEMAC and stakeholder review. (WSPA)

Comment:

We are concerned, however, on a few key provisions. The Board has the opportunity to structure a program that is environmentally sound, and also least cost to Californians and the companies operating here. AB 398 provides substantial authority to the Board to contain costs. But setting cost-containment mechanisms so high that they will not be triggered is the same as having no cost containment at all. Business faces a much steeper challenge between 2020 and 2030, a steeper cap, declining industry

assistance. We urge that you consider a lower price ceiling and set the cost containment points at one-third and two-thirds between the floor and ceiling. The cost containment points are needed to reduce volatility. AB 398 gives additional responsibility to an economic Committee to study the market when the first speed bump is triggered. The higher the first speed bump, the less effective economic review will be. (CHEVRON)

Comment:

CCEEB urges the ARB to:...

- Fix the Price Containment Points at 1/3rd and 2/3rd between the price floor and price ceiling...

Price Containment Points (PCPs)

Price containment points were included in AB 398 to mitigate risk and to the extent possible reduce volatility. CCEEB believe equally spaced PCPs provide more stability and steadier markets than where the PCPs are placed in ARB's proposed regulation. Setting the price tiers at 1/3rd and 2/3rd of the difference between the price ceiling (assuming a reasonable price ceiling) and the price floor will maximize their effectiveness and allow enough time for the Independent Emissions Market Advisory Committee (IEMAC) to constitute, analyze, and make recommendations on any actions depending on the course of the market. By having a program with robust price containment points, the possibility of volatility associated with low supply in later compliance periods will be reduced. (CCEEB)

Comment:

Price Containment Point Structure: SMUD believes that the price containment point structure in the 45-day language should be modified. The proposed levels at one half and three quarters of the distance between the floor price and the ceiling price are too high and too close together. The escalation built into the price containment levels should be altered to remain sufficiently below SMUD's proposed price ceiling structure above...

SMUD has consistently recommended price containment point levels that are well spread out from each other so that they act to brake market prices at two separate times or events. SMUD would prefer to see a price spread between the containment points of \$20 in real terms, ensuring that the market has ample time to respond to the influx of supply when a price containment point is accessed, without consideration that additional supply from the second point is also accessible. The price containment points should be pauses where stakeholders consider additional investments in abatement technologies, rather than waiting for or immediately considering the supply from the next price containment point.

If the “floor price plus \$60” ceiling price mechanism is adopted, SMUD notes that continuing escalation of the price containment points at inflation plus 5% will result in the price containment points moving towards the price ceiling level over time. In fact, the second price containment point level will exceed the price ceiling level by 2027. SMUD suggests adopting the same “floor plus a fixed price” structure for the price containment points, starting at floor plus \$20 for the first point and floor plus

\$40 for the second point in 2021. This can be accomplished by changing section 95913(h)(5) and (6) as follows:

(5) In 2021, sales of allowances from the Reserve shall be conducted at the **following prices equal to the auction reserve price plus a fixed dollar amount:**

(A) Allowances from the first tier shall be offered **at a price equal to the auction reserve price for that year plus \$20 for \$41.40** per allowance.

(B) Allowances from the second tier shall be offered **at a price equal to the auction reserve price for that year plus \$40 for \$53.20** per allowance.

(6) Increase in Reserve Tier Prices in calendar years after 2021. **Tier prices from the previous calendar year will be increased by five percent plus in each subsequent year the fixed dollar amounts used for the first and second tiers will be the previous year’s fixed dollar amounts adjusted for** the rate of inflation as measured by the most recently available twelve month value of the Consumer Price Index for All Urban Consumers. (SMUD)

Comment:

II. Establishing Post-2020 Reserve Tiers (Price Containment Points)

PG&E appreciates ARB Staff’s recognition of the important role the two Post-2020 Reserve Tiers can play in cost-containment and in helping to protect against rapid and large changes in allowance prices that could be destabilizing to the program. ARB notes in the Staff Report that “By placing the tiers prices meaningfully below the price ceiling, the tiers can function with increased effectiveness relative to the current Reserve to provide early signals to market participants that prices could escalate higher”²⁶⁸. We agree with ARB Staff that in order for the tiers to play this role, they need to be placed further away from the ceiling than the current three-tier APCR structure. PG&E believes that the tiers can best fulfill their purpose if they are evenly spaced (i.e., at 1/3 and 2/3 of the distance between the floor and the ceiling). However, we acknowledge that ARB’s proposal (i.e., 1/2 and 3/4 of the distance between the floor and ceiling) does place the tiers meaningfully below the price ceiling and is a step in the right direction.

²⁶⁸ ISOR, Page 41

PG&E also notes that the ability of the tiers to perform their cost-containment role is contingent on the selection of a reasonable price ceiling. For example, under the current ARB proposal, the first tier is over \$60/ton in \$2018 by 2030. PG&E believes this is too high for the first cost- containment point, which would allow for a gap of approximately \$35/ton between the floor and the first tier.

Finally, PG&E notes that it is possible to maintain the desired distance between the floor, ceiling, and tiers by using the formula for determining the tiers in 2021 in all future years rather than using an escalation rate. Use of this formula for determining the tier values in all years can avoid ARB Staff's concern about the tiers converging into the price ceiling over time. We encourage ARB to revise its proposal to do so. (PG&E)

Comment:

Speed Bumps (Price Containment Points)

It is important that the price containment points be positioned so as to provide appropriate market signals early enough to act as a warning of oncoming market volatility. The goal is cost containment and protection of the program. Speed bumps must meet the dual requirements of strategic placement and be funded with sufficient allowances to ensure effectiveness. (CLFP)

Comment:

3. Reserve Tiers (Price Containment Points)

AB 398 SEC. 4. Section 38562 (c)(2)(B) directs CARB to establish below the price ceiling two price containment points, or reserve tiers, at which covered entities may purchase non-tradable allowances. The reserve tiers shall be established using two-thirds, divided equally, of the allowances in the APCR as of December 31, 2017. SDG&E agrees with stakeholder comments that reserve tier prices should be low enough to help protect customers before prices reach the ceiling and provide early signals to compliance entities. Their placement should also give the Independent Emissions Market Advisory Committee established by AB 398 time to evaluate and recommend possible program corrections, if needed. Effective cost containment is necessary to avoid rapidly escalating allowance prices and to help balance supply and demand in the market over time. (SDG&E)

Response: As described below, the adopted Regulation retains fixed distances between the cost-containment points. However, CARB disagrees with the specific recommendation to divide the points at one-third and two-third between the ARP and price ceiling because that spacing would miss the need to allow a wide range of market price discovery.

As stated in the Initial Statement of Reasons,²⁶⁹ the two new post-2020 Reserve tier prices were set based on maintaining fixed distances between the Auction Reserve Price and price ceiling (half of the distance and three quarters of the distance for the first and second tier respectively). Maintaining the consistent escalation between the Auction Reserve Price and price ceiling allows for the two new post-2020 Reserve tiers to operate at a fixed distance between the two points. Otherwise, in later years, the two new post-2020 Reserve tiers would converge into the price ceiling, thereby negating the effectiveness of the Reserve price tiers to slow the acceleration of allowance prices.

As further discussed in the Initial Statement of Reasons, by placing the tier prices meaningfully below the price ceiling, the tiers can function with increased effectiveness relative to the current Reserve to counteract quick shifts in allowance values and provide early signals to market participants that prices could escalate higher. If the tiers are accessed through a Reserve sale, the new post-2020 Reserve offers initial cost relief through Reserve allowances, and a clear signal to all market participants of a potentially tight market. The expanded distance between the Reserve tiers and price ceiling, relative to the pre-2021 Reserve, ensures market participants will have time to initiate additional GHG reductions. In addition, relative to the existing post-2020 expectations under the current Regulation, staff's proposed new post-2020 Reserve tiers are also set below the single Reserve tier price path. Therefore, the new post-2020 Reserve offers a price moderating effect below the maximum price that could occur under the single tier post-2020 Reserve.

Response to 45-day Comments B-1.3 includes a discussion of the IEMAC's role in reporting on the economic and environmental performance of the Program. CARB is required to report to the Legislature, in consultation with the Independent Emissions Market Advisory Committee, if two consecutive auction settlement prices exceed the lower of the two new Reserve tier prices. The report would include an assessment of the potential prices to reach the price ceiling for multiple auctions.

CARB agrees with the reasoning that the greater the distance between the cost-containment points, the more independently they operate. The range embedded in the difference between the price ceiling and the ARP in the adopted regulation is large enough that the pricing points will function independently. It maintains the price signal to ensure the lowest cost reductions are targeted, while allowing for price discovery across a consistent range for all periods of the Program across all covered sectors.

²⁶⁹ <https://www.arb.ca.gov/regact/2018/capandtrade18/ct18isor.pdf>

Consumer Impacts

B-3.12. Comment:

Cost Concerns

The decision to codify Cap-and-Trade beyond 2020 last year centered around cost-effectiveness and the flexibility to protect California's economy, compliance entities, and citizens from undue costs to reduce greenhouse gas emissions. The potential cost of allowances for fuel, natural gas, and electricity led the Legislature and Administration to defer the discussions of the price ceiling and the price containment points to the ARB's regulatory process. The ARB's assessment indicates that the costs of climate change policies are passed to the consumers of transportation fuels, natural gas, and electricity. Additionally, based on the Bureau of Labor Statistics, real wages, adjusted for inflation, have grown less than 2 percent since the first auction in 2013²⁷⁰, much slower than the proposed Cap-and-Trade program prices escalate (5 percent plus CPI).

With wage growth and the public's capacity to pay in mind, the proposed regulations will lead to consumers paying an increasingly large proportion of their income annually on fuels, energy, and goods manufactured in California subject to the regulation. The 5 percent floor price escalator has increased energy costs since the program's origin in 2013. Assuming continued stagnant trends in real wages and inflation, the costs of energy in California will rapidly outpace the public's ability to pay these costs.

CCEEB urges staff and the Board to consider the household impacts of modifying components of Cap-and-Trade to raise allowance prices in tandem with the policies enacted outside of ARB's scope of authority. There are many other political and policy priorities that extend beyond the scope of the ARB and the California Environmental Protection Agency (CalEPA) that require the public to carry the cost burden, such as Medi-Cal, public pensions, infrastructure, public safety, education, and countless other underfunded or unfunded needs.

Fuel, natural gas and electricity costs are further compounded by California-specific policies like the Renewable Portfolio Standard and the Low Carbon Fuel Standard. Staff and the ARB must pause to consider the impact on California households and design a program that can be absorbed amidst a growing demand of spending obligations.

The proposed nominal 2030 ceiling price of approximately \$120 per ton of CO₂e could potentially add over \$1 per gallon to the cost of transportation fuel based on estimates provided by the LAO²⁷¹. CCEEB firmly believes the ceiling price sends a signal to the public and if it is too high or collides with others public cost pressures, it undermines support for California's Cap- and-Trade program. California's gasoline prices are

²⁷⁰ <https://www.bls.gov/opub/ted/2018/real-average-hourly-earnings-up-0-point-2-percent-from-august-2017-to-august-2018.htm>

²⁷¹ Legislative Analyst Office's 2016 report

currently \$0.86 higher than other high- population, progressive states like New York and \$1.22 more expensive than economic competitors like Texas²⁷². With California poised as the leader in Cap-and-Trade, adopting such a high price ceiling could substantially inhibit the growing world-wide interest in establishing market-based programs to meet the Paris Agreement's Nationally Determined Contributions...

Establishing a Ceiling Price

The six criteria in AB 398 to guide the establishment of price ceiling values are co-equal considerations and will require substantial balance throughout the discussion this year. CCEEB believes the ceiling price proposed by ARB is too high to ensure allowance prices do not rise to politically unacceptable levels and frustrates the Legislature's intent of creating a meaningful price ceiling.

The public's ability to bear and accept the costs is an important factor and is also one of the key criteria in AB 398. It is imperative that Cap-and-Trade be publicly and politically acceptable to backstop California's climate goals as the stringency and affordability becomes increasingly more difficult in the later years of the program.

The price ceiling currently proposed by ARB is not an effective cost containment mechanism. ARB should set the price ceiling in 2021 at \$60-80 (2021 dollars), adjusted annually on CPI, to account for inflation, in order adequately protect the State's economy, consumers and ratepayers against higher costs. In order to maintain public and political support the 2030 price ceiling should be between \$80-\$93 in 2030 dollars.

Other important criteria that need to be the focus of the policy discussion to date, include consideration of environmental and economic leakage. One metric for consideration is whether other jurisdictions are pursuing climate policy with the same stringency and pricing as California. A review of the world-wide climate policy stringency shows that only a few entities share the same level of stringency and even among those, the carbon pricing policies are lower in cost. There are many resources that provide world-wide pricing, including the World Bank that demonstrate the average carbon price today, where it exists, is below California's floor price at around \$10. These metrics point to the significant disadvantage for California entities facing high stringency and much higher prices throughout the program. It is a clear indicator that California should consider a lower price ceiling than what has been proposed by the ARB.

CCEEB agrees with Dr. Stavins' views on the inappropriateness of using cost of abatement as a primary factor for consideration of setting a price ceiling. Pricing above the social cost of carbon does not provide additional environmental benefit. As the social cost of carbon is an approximation, costs of compliance below this price are a result of the unique solutions compliance entities implement in order to reduce their costs within a Cap-and-Trade. The purpose of Cap-and-Trade programs is to allow

²⁷² <https://www.gasbuddy.com/USA>

flexibility on who makes reductions and how the reductions are made to ultimately incentivize the lowest cost reductions. Choosing a high cost abatement specifically targeting a specific sector is both presuming that this is required to meet the reductions and also that a one size fits all approach is appropriate policy for a Cap-and-Trade price ceiling. Moreover, ARB's own Scoping Plan is based on pathways which do not include use of the same abatement technology, carbon capture and storage until after 2030. It is therefore inappropriate to identify this abatement cost in a pre-2030 regulatory framework. Cap-and-Trade is not designed to promote or focus on single abatement techniques but drive innovation and reductions through unique investment as different sectors are able to find and cost-effectively implement these reductions. (CCEEB)

Comment:

Our bodies have been watching this issue, and we have supported AB 398 in total -- totality. However, our concerns now are around containment. One in five women, single and older, live below the poverty level, while another 32 percent have incomes higher. Yet, they are still unable to meet their basic living expenses.

And this is particularly true for older women of color, black and Latino, and they're facing currently economic insecurity. They have the greatest risk of poverty with over 60 percent, as I said, being women of color. When adding the number of older Californians at the sublevel poverty rate, with the number of hidden poor, nearly 40 percent of the Californians age 65 plus have a substandard income level, and are on fixed income. California's direct care workers predominantly women again, including certified nurses, home health aids, and personal care aids are responsible for 70 to 80 percent of the paid hands-on care for older adults, and are among the lowest paid of all U.S. workers. And approximately 45 percent of these workers are in households earning below 200 percent of the federal poverty level. Now, this data is not hidden. You can check the Commission on the Status of Women, Justice in Aging, the Kaiser Foundation, California Commission on Aging.

As a contractor, I work with the SLATE-Z in Los Angeles, the federal zone and -- in metro L.A. to create awareness just for our students alone in understanding the discount programs that are available to get to and from school. However, understanding that, and recognizing that, there are right in LAUSD 16,000 homeless students, and 10,000 students that are foster care.

So your current proposed pricing plan would be detrimental to many of these groups from employment and a residential perspective. I respectfully[SIC] ask the Board to reject the proposed pricing level, and support the legislation's request, which initially was in support of AB 398, but watching the costs and the impact that it would have on the residential and consumers, I should say, just as -- as alone. Additionally, we're trying to build a strong middle class.

And as I gave you these statistics, clearly you can understand even \$0.10 more almost is going to be a major impact and a deficit to them. So hopefully, Madam Chair, I've identified some real-world concerns for you in the community. (CALDEM WOMEN)

Comment:

As far as the price ceiling goes, our number one concern is ensuring that electricity prices remain affordable, particularly for our low income and middle income customers. (SCPPA2)

Comment:

Eichleay, Inc. supports efforts to contain prices and protect California consumers during the implementation of AB 398. We urge the California Air Resources Board to focus on cost containment measures in developing a stable and replicable cap-and-trade program that will meet GHG emissions reduction goals and mitigate negative impacts to the 5th largest economy in the world.

The cap-and-trade program is a key element of California's greenhouse gas (GHG) reduction strategy. It is a market-driven approach to reducing emissions and meeting California's climate goals. Last year, when legislators passed the law, Assembly Bill 398, they directed the Air Resources Board (ARB) to consider the cost to consumers when developing their program. The ARB has ignored the legislature's direction, and instead, proposed a program that could drastically increase the costs of consumer goods to Californians.

Eichleay's 350+ employees are committed to a sustainable California economy which promotes the health and livelihood of its citizens. We significantly contribute to the area economy and living wage jobs in this region. Academics and governmental entities alike agree that if the cap-and-trade regulation isn't properly designed, it could result in household income loss, increased gas prices, and a loss of jobs.

We urge you to Contain Prices and Protect California Consumers during the implementation of AB 398. (EICHLEAY)

Response: The comments appear to raise concerns with cost containment design elements, but is not specific in which elements of the amendments it takes issue with that it contends will affect costs for consumer goods. If the commenter is referring to the cost containment design amendments to comport with AB 398 requirements, including the price containment points and the price ceiling, see Response to 45-Day Comment B-3.15.

CARB has conducted modeling in support of the adopted Regulation, as described in Responses to 45-Day Comments B-1.3 and B-2.1. As modeled, the amended Regulation was found to have a negligible impact on the economy, employment, and personal income through 2030, even in the unlikely event the allowance price reaches the price ceiling.

The modeling included an assessment of the adopted Regulation's impact on consumer costs. As part of the regulatory process, CARB looked at the effects of the adopted amendments on the state economy. In the SRIA for this rulemaking, staff modeled the macroeconomic impacts of the adopted amendments relative to the current Regulation. The SRIA noted that the addition of the two new Reserve tiers below the existing Reserve tiers could end up reducing costs of the program for a wide range of prices. To evaluate the impact of the price ceiling, CARB staff undertook a conservative assessment by assessing impacts at the maximum level of prices that could occur under a very unlikely scenario. The macroeconomic modeling in the SRIA demonstrated that this would have very little effect on state consumers. Specifically, because proceeds from quarterly auctions of State-owned allowances are returned to the economy through California Climate Investment programs, there would be only a negligible reduction in state economic activity and consumer income if prices were to rise to the price ceiling. Under this conservative assessment, consumers statewide could bear a direct impact from any potential higher product prices, but employees statewide would also benefit as the auction proceeds are invested in new economic activity.

See also the Initial Statement of Reasons²⁷³ at pages 31 through 32 for a summary of the macroeconomic analysis conducted in the 2017 Scoping Plan on the impact of the adopted Scoping Plan with Cap-and-Trade. As noted there, and in Response to 45-Day Comment B-1.3, the Scoping Plan that includes the Cap-and-Trade Program was found to be 4 times less costly than other alternatives. For additional discussions of features of the Program that minimize emissions leakage, see Responses to 45-Day Comments B-3.14 and C-1.5.

California Climate Investment programs that currently benefit individuals include electric vehicle incentives, more efficient water pumps, utility climate credits, and other expenditures. Individuals also may experience lower household expenditures relative to the existing Program, which may be driven by greater energy efficiency, clean technology innovations, and additional economic benefits from any direct return of allowance value under the adopted amendments.

Many consumers are members of low income households which are more vulnerable to the impacts posed by climate change and usually have fewer resources to adapt or respond to those impacts. The Cap-and-Trade Program provides monies through the return of allowance value from the sale of State-owned allowances to help residents in the State's most vulnerable communities, ensuring that all California residents can have access to clean technology, energy efficiency tools, and participate in the cleaner economy.

²⁷³ <https://www.arb.ca.gov/regact/2018/capandtrade18/ct18isor.pdf>

Further, SB 535 and AB 1550 direct State and local agencies to make significant investments using auction proceeds to assist California's most vulnerable communities. To date, 51 percent of the \$2 billion dollars spent on California Climate Investments projects has provided benefits to disadvantaged communities; and 31 percent of this funding was used on projects located directly in disadvantaged communities.²⁷⁴ See Response to 45-Day Comment B-1.7 for a further discussion of Cap-and-Trade and disadvantaged communities.

Dairy Sector Impacts

B-3.13. Comment:

So 398, our read on that directly -- or specifically directed CARB to avoid adverse impacts on residents, households, businesses, and the state's economy. So anytime we look at something that potentially has an impact of fluctuating things that can impact pass-through costs down below, which we're certainly down below in the dairy industry, we certainly want to pay quite a bit of attention to that to make sure that we're addressing all the potential impacts and crossing all the t's and dotting all the i's. As the Board considers the proposed regulation amendments, it's critical to implement cost containment mechanisms that will allow the California dairy industry.

And we are such a interwoven web between our producer segment and our processor segment that we will maintain viable, and not at a severe detriment cost disadvantage to our competitors outside of California. We believe the authors of 398, Assemblyman Garcia, that 398 intended modest price ceilings and floors for credits, sufficient allowance and allocations, and industry assistance, which we are very appreciative of and have a tremendous success story from the industry standpoint through our hub-and-spoke models and so forth that have went from power generation on form, and now we're transitioning into renewable biogas that's going into the transportation segment. As mentioned in the staff report, in-state dairy offset projects are an integral part and a tool in meeting the carbon reduction, as far as the goals of cap and trade, and also meeting the state's implementation of the short-lived climate pollutant strategy.

It's very important that these off -- amendments reflect and facilitate these types of offsets. It is absolutely critical, as this industry does not have the ability to pass on any pass-through costs given our federally now mandated price setting. And then also the CME that prices all of our milk that's turned into the wonderful dairy products that we all like and love to consume. An interesting note, I would say that all segments of California are bearing a burden. When we look at national averages, we're between had 41 percent to 113 percent between residential and industrial cost, compared to the nationwide average. And I would say that, you know, California dairy families in particular have been a great environmental leader since stewards with the backing of

²⁷⁴ Figure ES-4: Cumulative Investments Benefiting Disadvantaged Communities (SB 535)
https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/2018_cci_annual_report.pdf

this Board and other regulatory boards throughout the State. And we continue to find innovative ways to combat climate change. (MILKPRODUCERS)

Response: As the commenter states, renewable natural gas is a key part of the Short Lived Climate Pollutant (SLCP) plan. Senate Bill 605 (Lara, Chapter 523, Statutes of 2014) directed CARB to develop a comprehensive SLCP strategy, in coordination with other state agencies and local air quality management and air pollution control districts to reduce emissions of SLCPs. SB 1383 (Lara, Chapter 395, Statutes of 2016) directed the Board to approve and begin implementing the plan by January 1, 2018, and set statewide 2030 emission reduction targets for methane, HFCs, and anthropogenic black carbon. The SLCP Reduction Strategy was approved by the Board in March 2017.

As noted in the Short Lived Climate Pollution Reduction Strategy,²⁷⁵ achieving significant reductions in SLCPs will require substantial investments to provide incentives and direct funding for priority sectors, sources, and technologies. Additionally, programs including the Bioenergy Feed-In Tariff, created by Senate Bill 1122 (Rubio, Chapter 612, Statutes of 2012), Low Carbon Fuel Standard, Cap-and-Trade, Self-Generation Incentive Program, Federal Renewable Fuel Standard, utility incentives pursuant to Assembly Bill 1900 (Gatto, Chapter 602, Statutes of 2012), and others provide important market signals and potential revenue streams to support projects to reduce SLCP emissions.

See Responses to 45-Day Comments C-1.3 and C-1.5 for a discussion of changes made to industrial allocation in response to Board Resolution 17-21 and AB 398. These changes include increasing the dairy industry's assistance factors from 75 to 100 percent for the 2018 to 2020 timeframe, and extending the 100 percent assistance factors into the post-2020 Program.

See Response to 45-Day Comment B-3.15 for a description of how CARB assessed all AB 398 factors in setting the price ceiling. See Response to 45-Day Comment B-3.14 for a discussion specific to emissions leakage. As described there, the price ceiling is not the sole factor to consider when assessing how the program minimizes leakage. The new post-2020 Reserve and price ceiling work in coordination with other features of the Program that provide compliance flexibility to meet the 2030 target reliably and cost effectively. The new post-2020 Reserve introduces 156 million allowances for cost containment at prices below the current post-2020 Reserve, and below the price of the Price Ceiling. The Program also includes limited banking, use of a limited number of offsets, multi-year compliance periods, and the broad scope that identifies a diverse set of sources with a range of emission reduction opportunities. Additionally, the Program includes industrial allocation and the residential climate credit, which

²⁷⁵ https://www.arb.ca.gov/cc/shortlived/meetings/03142017/final_slcp_report.pdf

work to reduce the cost burden of allowance prices to covered entities and residents of the state.

Further, the Legislature appropriates money from the GGRF to programs that reduce GHG emissions, reduce air pollutant emissions where reductions are needed most, grow markets for clean technologies, and spur emissions reductions in sectors not covered by Cap-and-Trade.²⁷⁶

See Response to 45-Day Comments B-3.8 for a discussion of the Auction Reserve Price, referenced by the commenter as a price floor for credits.

Effects on Leakage

B-3.14. Comment:

In further developing its Proposed Amendments, ARB should:...

- More thoroughly explain how ARB's concerns about leakage are reflected in the proposed pricing structure;...

ARB Should More Thoroughly Address How Its Concerns About Leakage Are Reflected in the Proposed Pricing Structure

In accordance with a statutory mandate, ARB has made leakage a central concern in its Proposed Amendments.²⁷⁷ ARB cites leakage as a material factor in several of its market design decisions, including the setting of the initial 2021 price ceiling,²⁷⁸ the setting of cost containment prices,²⁷⁹ and the allocation process.²⁸⁰

ARB should more thoroughly explain how leakage informed these decisions. For example, ARB explains that it has not set the price ceiling at a higher value because doing so “may lead to leakage.”²⁸¹ ARB should elaborate on why a higher price ceiling would do this. Among other things, it should explain which economic activities might relocate out of California at which price points; quantitatively describe the relationship between price point and leakage; and articulate how it is balancing the prevention of leakage against other statutory and policy goals, such as the internalization of the SC-CO₂. (POLICYINTEGRITY)

²⁷⁶ See California Climate Investments website, available at <http://www.caclimateinvestments.ca.gov/about-cci>

²⁷⁷ CALIFORNIA AIR RESOURCES BOARD, PUBLIC HEARING TO CONSIDER THE PROPOSED AMENDMENTS TO THE CALIFORNIA CAP ON GREENHOUSE GAS EMISSIONS AND MARKET-BASED COMPLIANCE MECHANISMS REGULATION, STAFF REPORT: INITIAL STAFF REPORT, app. C at 4 (2018), <https://www.arb.ca.gov/regact/2018/capandtrade18/ct18sria.pdf> [hereinafter “REGULATORY IMPACT ANALYSIS”].

²⁷⁸ Id. at 10

²⁷⁹ Id. at 11.

²⁸⁰ Id. at 39.

²⁸¹ See STATEMENT OF REASONS, supra note 17, at 39.

Response: The commenter requests more information on how emissions leakage informed the design of the Program and adopted amendments. As discussed in the 2010 Initial Statement of Reasons,²⁸² if not appropriately compensated for in the design of the program, requirements for some energy-intensive trade-exposed (EITE) industries to reduce emissions in California, either through inclusion in a cap-and-trade program or through source-specific regulation, have the potential to create a disadvantage for California facilities relative to out-of-state competitors who do not face similar requirements. If production shifts outside of California to a region not subject to GHG emissions-reduction requirements, emissions could remain unchanged or even increase. This is referred to as emissions “leakage.”

As further discussed in Responses to 45-Day Comments C-1.1 and C-1.4, AB 32 and AB 398 require that CARB minimize this leakage, and free allowances are allocated to industry to mitigate against emissions leakage. Leakage risk is captured in the allowance allocation calculation as an assistance factor (AF), which scales allowance allocation with the level of leakage risk for each industrial sector. When the Program was initially designed, AFs were set at 100 percent and were proposed to drop each compliance period to reflect the expectation that the phasing in of carbon pricing or carbon regulations in other regions would lessen leakage risk. For all industries, the risk of emissions leakage declines when trading partners adopt programs with similar stringencies such that companies in other jurisdictions incur comparable GHG emissions costs. Thus, when trading partners adopt GHG programs, allowance allocation to minimize leakage risk should be correspondingly reduced to reflect the reduced leakage risk.

In the industrial sector, staff analyzed the potential for emissions leakage by looking at emissions intensity and trade exposure. Emissions intensity is a measure of the impact that carbon pricing will have relative to a sector’s economic output. Those with higher emissions per unit of output are considered to be more emissions intensive. Trade exposure is a measure of a sector’s ability to pass through a cost. Without assistance, the competitiveness of industries that are both highly emissions intensive and trade exposed has the potential to be negatively affected relative to competitors that do not face similar GHG emission reduction requirements.

The methodology that CARB used to evaluate leakage risk for covered industrial sectors is described in Appendix K to the 2010 Cap-and-Trade Regulation Staff Report,²⁸³ which has been incorporated by reference as part of the Staff Report

²⁸² <https://www.arb.ca.gov/regact/2010/capandtrade10/capisor.pdf>

²⁸³ California Air Resources Board. 2010 Proposed Regulation to Implement the California Cap-and-Trade Program, Staff Report: Initial Statement of Reasons, Part I, Volume IV, Appendix K: Leakage Analysis. <http://www.arb.ca.gov/regact/2010/capandtrade10/capv4appk.pdf>

to this rulemaking. As part of the Appendix K analysis, CARB combined independent assessments of trade exposure and emissions intensity to classify sectors into “high,” “medium,” and “low” emissions leakage risk categories. Since 2010, CARB has evaluated leakage risk extensively, including through multiple research contracts to develop analytical tools and assess available data to monitor for leakage and further assess leakage risks.

Regarding the AB 398 factors of “[t]he potential for environmental and economic leakage,” the commenter asserts that CARB should more thoroughly explain how it considered this factor in setting the price paths of the new post-2020 Reserve tiers and price ceiling. CARB extensively discussed how all AB 398 factors affect setting the price ceiling in the ISOR, stating specifically that “[a]voiding adverse impacts on California’s economy and avoiding leakage continue to be critical design objectives for the Cap-and-Trade Program...” (*Id.* at 32.) CARB also stated that “...in advance of widespread carbon pricing and deployment of GHG reducing technologies, California businesses may be more sensitive to potential emissions leakage. This concern supports the selection of a price ceiling path below the single tier Reserve value in the early 2020s. The proposed \$61 price ceiling in 2021 is approximately \$14 less than the current Regulation’s 2021 single tier Reserve price..., while increasing at a faster rate than the existing single tier price.” (*Id.* at 33.)

CARB includes a further discussion of these considerations in the economic analysis in the SRIA as well,²⁸⁴ contrary to the commenter’s assertion. (See SRIA, at 52.) Namely, CARB fully explained the potential incremental costs to businesses if allowance prices reached the price ceiling (*id.* at 54-55) and costs to consumers, including with respect to gasoline prices (*id.* at 55).

As discussed in the 45-day Notice, the new post-2020 Reserve and price ceiling work in coordination with other features of the Program that provide compliance flexibility to meet the 2030 target reliably and cost effectively. The new post-2020 Reserve introduces 156 million allowances for cost containment at prices below the current post-2020 Reserve, and below the price of the Price Ceiling. The Program also includes limited banking, use of a limited number of offsets, multi-year compliance periods, and the broad scope that identifies a diverse set of sources with a range of emission reduction opportunities. Additionally, the Program includes industrial allocation and the residential climate credit, which work to reduce the cost burden of allowance prices to covered entities and residents of the state. Further, the Legislature appropriates money from the GGRF to programs that reduce GHG emissions, reduce air pollutant emissions

²⁸⁴ <https://www.arb.ca.gov/regact/2018/capandtrade18/ct18sria.pdf>

where reductions are needed most, grow markets for clean technologies, and spur emissions reductions in sectors not covered by Cap-and-Trade.²⁸⁵

See Response to 45-Day Comment B-3.15 for a discussion on how each factor, including leakage, was appropriately assessed by CARB in developing the price ceiling and price containment points. See Response to 45-Day Comment B-3.7 for a discussion of the adopted Regulation's Price Ceiling and the Social Cost of Carbon. See Response to 45-Day Comment B-1.3 for a further discussion of modeling conducted in support of the adopted Regulation, and for how CARB expects a smooth transition from the current path of meeting our 2020 climate targets ahead of schedule, to the prices that will motivate further reductions to achieve our 2030 target.

Lower Price Ceiling and Reserve Tier Prices and Legislative Intent

B-3.15. Comment:

As a group of concerned businesses and consumers in California, we are united in strongly opposing specific provisions of the proposed amendments to the regulation for administering cap-and-trade for the period of 2021 to 2030. Specifically, we believe the proposed price ceiling would fail entirely at its statutory purpose of controlling costs on households, businesses, and the overall economy.

Assembly Bill 398 (Garcia, 2017) directs the California Air Resources Board (CARB) to include a price ceiling in the proposed regulation to control the prices of allowances. The legislation specifically directs CARB, when setting the price ceiling, to "avoid adverse impacts on resident households, businesses, and the state's economy." This important and straightforward direction reflects a widespread and bipartisan recognition that the costs of climate regulations must be managed in order for the regulations to be successful and avoid driving California consumers, workers, and businesses into insolvency.

Unfortunately, CARB is proposing to set a price ceiling nearly twice as high as experts recommend. This threatens to impose unaffordable, runaway costs on all Californians, and violates the legislative directions to "avoid adverse impacts." This includes adding up to \$1.08 per gallon to the cost of gasoline, as well as potential cost increases on energy, food, and other necessities. These cost increases will dramatically impact California consumers, workers, and businesses who already contend with some of the highest costs of living in our nation.

For these reasons, we strongly oppose the lack of proper price-containment provisions in the proposed amendments. We ask CARB to consider an approach to cost-containment that is more aligned with the Legislature's direction in AB 398. (CCPC)

Comment:

CIPA understands the intent of AB 398 was to initiate real, functioning cost containment provisions and not set those levels so high as so they won't be a factor in the market. Since crude oil is a world- wide commodity and the income producers receive does not adjust for the costs for Cap and Trade compliance these impacts could result in early retirement of locally produced crude, and could reduce jobs, taxes, and impact on the State's reliable highly-regulated energy supply. Such impacts also carry over to the cost borne by Californians in their daily fuel cost. (CIPA)

Comment:

We believe there is a great opportunity for California to lead global efforts on climate change with Cap-and-Trade as the centerpiece of the State's program. California's program on climate change goes beyond simple commitments and as such, the benefits and consequences must be carefully considered to avoid loss of productivity or undue costs to the public. An efficient and cost-effective program will deliver emission reductions at a cost that is tenable for the public without creating political pressure on the State's other funding priorities outside of climate change.

CCEEB supports AB 398 as it maintains the environmental integrity of SB 32, while re-emphasizing cost-effectiveness in California's climate change program by prioritizing cost containment, market stability, environmental and economic leakage caused by foreseeable and increased production costs and regulatory impediments. These impediments lead to a loss or shift in production to other jurisdictions without air quality or climate change policies, and least cost principles. The price ceiling, price containment points and market size designed in AB 398 work together to reduce volatility and provide time for regulatory review while protecting jobs and consumers. A well-designed Cap-and-Trade should incentivize the lowest cost emission reductions, thereby resulting in emission reductions while preserving a facility's economic contribution at the same time.

CCEEB is concerned the proposed mechanisms that set the price ceiling and price containment points are inconsistent with the intent of AB 398 and by extension, the support given by a broad- based business-labor coalition and bipartisan group of legislators in 2017.

During the AB 398 negotiations in 2017, a bipartisan coalition of legislators determined a series of principles necessary for the reauthorization of Cap-and-Trade. This bipartisan caucus continues to emphasize these principles and recently submitted this letter to ARB:

California Legislature

June 14, 2018

Mary D. Nichols
Chair, California Air Resources Board
1001 I Street
Sacramento, California 95814

RE: Assembly Bill 398 Cap-and-Trade Program Implementation

Dear Chairwoman Nichols:

We write as a bipartisan coalition of legislators who together participated in negotiations and voted for Assembly Bill 398. We understand the California Air Resources Board (CARB) staff and leadership are debating and interpreting AB 398, and how the post 2020 Cap-and-Trade program is going to be implemented. We join together again to ask that CARB be mindful of the critical need to set a price ceiling that respects and supports the environmental goals of Cap-and-Trade and, simultaneously, contains costs for California consumers and businesses who comply with the state greenhouse gas (GHG) reduction goals.

In AB 398, we directed CARB to establish a price ceiling for carbon and we provided a framework for developing the price for carbon emissions that included:

- The critical need to avoid adverse impacts on resident households, businesses, and the state's economy;
- The 2020 tier prices of the allowance price containment reserve;
- The full social cost associated with emitting a metric ton of GHG;
- The auction reserve price;
- The potential for environmental and economic leakage;
- And the cost per metric ton of GHG reductions to achieve the goals established in AB 32 and SB 32.

As you are considering the regulations to implement AB 398, we want to reiterate how critically important it is to avoid adverse impacts on resident households, businesses, and the state's economy and to consider the potential environmental and economic leakage that could occur.

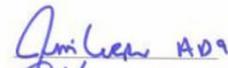
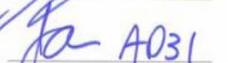
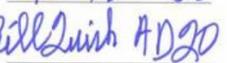
We support Cap-and-Trade, and want to see California continue to be a global environmental and economic leader. If we are going to prove to the rest of the world that our policies work, we must have a smart and sensible approach that supports a strong and growing middle class, helps Californians get ahead, and strikes the right balance of cost and environmental integrity to reach our goals. A sensible price ceiling and overall pricing system that fully incorporates the above factors, is key to that success. We believe failure to set an appropriate ceiling and price mechanism will not only undermine our environmental leadership and success, but also could cause the legislature to reconsider what next steps CARB can and should be authorized to take.

Thank you for considering our request, if you have any questions please do not hesitate to contact our offices.

Sincerely,

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CCEEB supports the message and principles promoted by these legislators. Their voices and votes were critical to achieving the 2/3rds support necessary for reauthorization and moreover, provided a bipartisan path for climate change policies. Their trust to, "strike the right balance of costs and environmental integrity..." should be reinforced with a price ceiling that reflects the negotiations had during the 2017 legislative session. (CCEEB)

Comment:

In summary, WSPA urges CARB to change its proposed price ceiling to reflect a reasonable interpretation and application of the relevant statutory factors, consistent with the approach advocated above. WSPA requests that CARB conduct a full and transparent analysis of the impacts of alternative policy designs on each of the factors, eliminate the 5% escalator for the price ceiling, and adopt a price ceiling that does not exceed a reasonable estimate of the social cost of carbon in 2030.(WSPA3)

Comment:

Now, I'd like to turn to an area where more work is needed. Specifically, the pricing ceiling and speed bump placement. AB 398 provided six criteria that should be considered when developing the pricing ceiling and speed bumps. They're all important.

WSPA believes that using the social cost of carbon can be an important starting point, but that ultimately consideration for linkage, leakage, and household impacts should persuade the Board to set a lower prices ceiling. We feel the current proposed price ceiling and placement of speed bumps will not provide adequate cost containment. And we believe more consideration needs to be given to the potential impact that high allowance prices can have on consumers and the economy. (WSPA4)

Comment:

We are concerned, however, on a few key provisions. The Board has the opportunity to structure a program that is environmentally sound, and also least cost to Californians and the companies operating here. AB 398 provides substantial authority to the Board to contain costs. But setting cost-containment mechanisms so high that they will not be triggered is the same as having no cost containment at all. Business faces a much steeper challenge between 2020 and 2030, a steeper cap, declining industry assistance. We urge that you consider a lower price ceiling... Higher ceiling prices also impact how industry invests in California. Economic leakage leads to emissions leakage, which defeats California's goals. We wish that you would plan of the unexpected and recognize that much better information will exist after California has more years of a much steeper cap under its built. (CHEVRON)

Comment:

2. COST CONTAINMENT FEATURES

ROLE OF A PRICE CEILING

CARB's proposed price ceiling escalation rate post-2021 of 5% plus the Consumer Price Index (CPI) per year does not effectively reflect the legislative direction from AB 398. IETA is concerned that CARB discounts the possibility of reaching the price ceiling.

A recently published paper from prominent economists reveals that levels of abatement from overlapping policies and the uncertainty associated with business-as-usual emissions implies that allowance prices in California could plausibly hit the proposed price ceiling (Borenstein, Bushnell, Wolak and Zaragoza- Watkins, 2018). A related paper, broadly-based on CARB's proposed amendments, confirms this conclusion, showing that the allowance price will potentially either land on the price floor (47%) or hit the price ceiling (34%) (Borenstein, Bushnell, and Wolak, 2017). These two academic articles comport with recent tailored analyses that find the price ceiling will be reached in approximately the late 2020s (NERA 2018; NERA and PG&E 2018).

While there is significant uncertainty around macroeconomic trends and market dynamics, this body of research underscores the possibility that allowance prices will hit the price ceiling before 2030. Even if this probability were quite low, a robustly designed mechanism and an expertly-executed response to avoid excessively high allowance prices would be paramount to the political success of California's cap and trade program.

[The original comment, which includes a reference list, is available at <https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=ct2018>.] (IETA)

Comment:

A price floor and price ceiling (referred to as a price collar) are important programmatic features which bound the cap-and-trade allowance prices and are designed to ensure that prices do not dip below a set dollar amount and do not exceed an upper limit. These features help provide predictability to government policymakers who are concerned about the potential impact that the program could have on their constituents and businesses who must comply with the regulation. It also discourages allowance hoarding or market manipulation and sets reasonable expectations for carbon investment. Having such a mechanism to guard against market volatility or supply shortages due to unforeseen circumstances is vital for the health and sustainability of California's cap-and-trade program.

CARB's Proposal Fails to Meet Legislative Intent of AB398. CARB is proposing to set the first speed bump at \$41.40 (2021), the second speed bump at \$53.20 (2021), and the price ceiling at \$65.00 (2021). CARB then escalates all these values by 5 percent plus CPI annually.

A cost containment package proposal that begins with the first containment point at more than two times that of the floor price, the second containment point at more than three times that of the floor price, and the ceiling nearly four times that of the price of the floor provides very little in the way of the safeguards intended by AB398. In fact, CARB's proposal to escalate the speed bumps and price ceiling by 5 percent plus CPI annually will lead to an unsustainable program. While CARB references the need to mirror the rate of floor escalation due to concern that the floor and ceiling would converge at some point in the distant future, this is unwarranted because any such convergence would not occur until almost 2050, even with no escalation of the ceiling—well beyond the statutorily-authorized timeline of the program.

CARB's proposal disregards the legislative intent of AB398²⁸⁶. CARB has clearly articulated that the design of the cap-and-trade amendments is intended to avoid reaching either the speed bumps or price ceiling. The intent of AB398 is not to have CARB set the speed bumps and price ceiling so high that they are never reached. That would essentially mean they are non-binding. Quotes from CARB's Initial Statement of Reasoning (ISOR)²⁸⁷ rulemaking documents demonstrate the intention of setting these points so high as to make them non-binding.

- "In the unlikely event cost containment is triggered..." (ISOR p. 39)

²⁸⁶ <https://twitter.com/ChadMayesCA/status/1048610976688263168>

²⁸⁷ <https://www.arb.ca.gov/regact/2010/capandtrade10/capisor.pdf>

- “In establishing the price ceiling, staff does not expect that allowance prices would reach that value, nor that a price ceiling is a feature that should be accessed in the operation of the Program” (ISOR p. 28)
- “Specifically, the prices at which allowances are available to market participants enforce upper bounds on potential allowance values, and do not represent expected long-term compliance costs.” (ISOR p. 24)

AB398, as codified in Section 38562(c)(2) of the Health and Safety Code, requires the Board, “using the best available science,” to consider several factors in setting a price ceiling, including (1) the avoidance of adverse impacts on resident households, businesses, and the state’s economy; (2) the 2020 APCR tier prices; (3) the full social cost of carbon (SCC); (4) the auction reserve price; (5) the potential for environmental and economic leakage; and (6) the per-ton cost to achieve the statewide emissions targets.

By enumerating factors that do not necessarily converge on a specific price ceiling level, the statute inherently requires the Board to *optimize* for multiple factors using its discretion after considering the rulemaking record and acting in accordance with other statutory directions. These include Sections 38562(b)(5) and 38564, which direct the Board to, respectively, consider the “cost-effectiveness” of its climate regulations and to “facilitate the development of integrated and cost-effective regional, national, and international greenhouse gas reduction programs.” Doing so necessarily and logically requires that, over time, the Board should select a price ceiling that operates within a band that reflects these enumerated factors.

While the reference in Section 38562(c)(2) to the “auction reserve price” provides a lower end of a range of potential price ceiling levels (i.e., about \$15 in 2018), at least one factor suggests a natural upper bound. This is the SCC, which, as defined,²⁸⁸ reflects the level of climate-related damages. Subject to reasonable trade-offs in competing social objectives (e.g., education, health, safety and other objectives), investment up to the SCC level is arguably justified to the extent it avoids commensurate damages. Investment beyond the SCC level, however, results in costs in excess of avoided damages and thus would result in net social harm.²⁸⁹ The SCC accordingly represents a natural upper bound for the price ceiling.

As with many models, the SCC models include thousands of data points and projections and exhibit a wide range of uncertainties. Accordingly, both to avoid unintended

²⁸⁸ See, e.g., Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866, Interagency Working Group on Social Cost of Carbon, United States Government (February 2010) at 1 (“The SCC is an estimate of the monetized damages associated with an incremental increase in carbon emissions in a given year. It is intended to include (but is not limited to) changes in net agricultural productivity, human health, property damages from increased flood risk, and the value of ecosystem services due to climate change.”)

²⁸⁹ Todd Schatzki and Robert N. Stavins, Key Issues Facing California’s GHG Cap-and-Trade System for 2021-2030, July 2018.

environmental or economic damage, CARB should use a central-tendency SCC value similar to levels used by other reputable organizations, consistent with the requirement that CARB use the “best available science.” Dr. Steven Rose of EPRI has extensively researched the SCC. Dr. Rose recently presented a careful analysis of the range of SCC data, the strengths and weaknesses of the primary SCC models and the resulting central-tendency values. Dr. Rose finds the central-tendency value to be \$42 in 2020 (using 2007 dollars). Dr. Robert Stavins of the Harvard Kennedy School also recently analyzed cost-containment design issues under AB398. Dr. Stavins’ benchmark SCC value, \$79 in 2030 (nominal dollars), is based on the work of the Obama Administration interagency workgroup and is consistent (albeit somewhat higher) with Dr. Rose’s analysis.

Other factors may suggest placing the price ceiling at a level lower than the SCC. This would be the case, for example, if CARB were to determine that a lower level were needed to avoid materially harming consumers (i.e., through the imposition of regressive energy costs), driving economic activity from the state (i.e., the loss of businesses and jobs), or discouraging other states from linking with California’s program (which Ontario’s recent exit reminds us is an ongoing concern.)

NERA has recently completed analysis of CARB’s proposed cost containment package and has concluded that incorporating a price ceiling that increases by 5 percent plus CPI (assumed to be 2 percent) annually creates greater harm to California’s economy and household income compared to a price ceiling that escalates at a much lower rate²⁹⁰.

So, while the SCC offers a reasonable upper-bound price ceiling level, based on evaluation of such other factors, CARB should place the ceiling lower than the SCC-derived upper bound in order to guard against economic harm.

Applying the above methodology to the recent CARB proposal, we remain seriously concerned about the use of an escalator that would increase the price ceiling independent of an annual CPI adjustment. In fact CARB’s price ceiling proposal starts in 2021 at a point above the SCC-derived upper bound of net social benefit (i.e., causing net harm) and continues to an increasing degree each year. This would appear to run directly afoul of the statute and would open the proposal to potential legal challenge.

We urge CARB to align the price ceiling/speed bump design with the Section 38562(c)(2) factors in the manner described above and in accordance with other provisions of AB 32. This can be done by either eliminating or significantly reducing the application of the non-CPI escalator. If CARB decides to retain such an escalator, then it must significantly reduce it if it is to avoid economic damage. Aligning the proposal with the central-tendency SCC values also would require adjustment to the price ceiling levels, particularly approaching 2030.

²⁹⁰ NERA Economic Consulting, AB 398 - Allowance Ceiling Prices and Speed Bumps, Oct. 2018.

WSPA recommends that speed bumps be placed at 1/3 and 2/3 distance between the projected floor price and ceiling price. This provides for greater cost containment opportunity across the entire price curve. (WSPA)

Comment:

STUDY: AB 398 - Allowance Ceiling Prices and Speed Bumps (October 2018 Update)

Purpose of the Study:

Assembly Bill (AB) 398 has two provisions to contain the costs of California's climate change program: it requires the California Air Resources Board (ARB) to establish a firm price (ceiling) on cap-and-trade allowance prices and set two intermediate containment prices (speed bump prices) at which allowances would be available for sale. To help inform regulators in setting the ceiling and speed bump prices, NERA Economic Consulting undertook a study in March 2018 to estimate the economic impacts of four scenarios that differed only in the level of these prices. All scenarios included a suite of the California-specific complementary measures and the cap-and-trade program with a 2030 target of 40% below 1990 level greenhouse gas.²⁹¹ This study updates the March 2018 study to analyze the proposed amendments to the California cap on greenhouse gas emissions and market-based compliance mechanisms regulation released on September 4, 2018,²⁹² and to include a sensitivity scenario on the proposed amendment. The two new scenarios that are the subject of this update are described below and in Tables 2 through 4. This study was funded by the Western States Petroleum Association (WSPA).

The first of the two new scenarios (labelled "\$65@5%") reflects the proposed ceiling, speed bump prices, and distribution of pre-2021 reserve allowances in 2021. The proposed floor price and ceiling prices start at \$17.8 and \$65, respectively, in 2021 and both rise at 5% real.²⁹³ The speed bump prices were set at one-half and three-fourths of the difference between the floor and ceiling prices, with one-third of the containment reserve (APCR) allowances accrued through 2020 being made available at each of these prices. The remaining APCR allowances are assumed available for purchase at the ceiling price. This ceiling price tier also includes 39 million previously unsold allowances.²⁹⁴ The second scenario analyzed in this update (labelled "\$65@1%") assumes a 1% real rise in floor and ceiling prices while all other assumptions remain the same as the first scenario. In regards to the allowance market, the study assumes myopic behavior on the part of consumers and producers to capture market expectations about the uncertainties surrounding California's GHG policy. This study

²⁹¹ Proposed amendments for March 22, 2018 hearing.

<https://www.arb.ca.gov/regact/2018/capandtradeghg18/capandtradeghg18.htm>

²⁹² Appendix A through E provides details of the proposed amendments released on September 4, 2018.

<https://www.arb.ca.gov/regact/2018/capandtrade18/capandtrade18.htm>

²⁹³ All prices are in 2021 dollars unless stated otherwise.

<https://www.arb.ca.gov/regact/2018/capandtradeghg18/capandtradeghg18.htm>

²⁹⁴ Appendix C, Table 4, page 20. <https://www.arb.ca.gov/regact/2018/capandtrade18/capandtrade18.htm>

reports results relative to the same reference scenario (“\$39” scenario) used in our March study. It finds that the economic costs of California’s greenhouse gas policies are lower when the ceiling and speed bump prices rise at the slower rate (see Table 1).

Key Findings and Results:

1. As the rate of increase in ceiling prices increases from 1% to 5% per year, economic impacts to California’s economy and households increase. By 2030, the loss in household income is about \$120 greater in the “\$65@5%” scenario compared to the “\$65@1%” scenario (see Table 1).
2. Speed bumps, when placed at one-half and three-fourths of the way from floor to ceiling prices, delay the year in which the ceiling price is reached. A slower rise in the ceiling and speed bump prices mitigates the costs further. Put differently, proposals to set the speed bumps closer to the ceiling or otherwise eliminate the unused allowances would likely lead to a more rapid ascent in allowance prices.
3. The model finds the price ceiling is reached a few years earlier (around 2028) in the “\$65@1%” scenario than in the “\$65@5%” scenario, which is around 2031.²⁹⁵ Although the year in which the allowance price hits the ceiling price is delayed in the “\$65@5%” scenario, the California economy will experience higher allowance prices than in the “\$65@1%” scenario.

Table 1: Macroeconomic Results for “\$65@5%” and “\$65@1%” Scenarios Relative to Those in the “\$39” Scenario (in 2021\$)

Ceiling Price Scenarios (\$/MT CO ₂):	\$39		\$65@1%		\$65@5%	
Impacts	2025	2030	2025	2030	2025	2030
Allowance Price (\$/MT CO ₂)	\$33	\$40	\$43	\$72	\$53	\$106
Change in Household Income (\$/HH)	N/A		-\$100	-\$210	-\$160	-\$330
Change in Gross State Product (Billion \$s)			-\$3	-\$5	-\$4	-\$6
Change in Job Equivalents (‘000 jobs) ⁶			-10	-30	-16	-57

⁶ The number of job-equivalents equals total labor income change divided by the average annual income per job. This does not represent a projection of the numbers of workers that may need to change jobs and/or be unemployed, as some or all of the loss in labor income could take the form of lower wages and be spread across workers who remain employed.

Model, Scenarios, and Assumptions

²⁹⁵ AB398 provides for a mechanism whereby if the price ceiling is reached, unlimited allowances can be purchased by obligated parties. AB398 directs that the proceeds of the sale of those allowances are to be used to fund additional emission reductions to maintain the environmental integrity of the program. The allowance price is endogenously determined and not equal to the ceiling price until the allowance price reaches this price.

This study employs NERA’s proprietary NewERA modeling system²⁹⁶ to analyze the three scenarios (see Table 2). All scenarios impose the current program’s 2030 GHG emissions target of 40% below 1990 levels and assume the emissions cap continues to decline toward the 2050 target of 80% below 1990 levels. To reflect existing law, all scenarios employ an economy-wide cap-and-trade program²⁹⁷ and allow for fixed percentages of offsets that vary by year (see Table 3). Additionally, all scenarios employ a low carbon fuel standard (LCFS), a zero-emission vehicle (ZEV) requirement, a doubling of energy efficiency in commercial buildings by 2030, and a 50% renewable portfolio standard (RPS) target (see Table 4).

Table 2: Price Ceiling and Speed Bump Prices for all Scenarios (2021\$)

Scenarios	Price Ceiling (2021\$/MT CO ₂)		Speed Bump Prices (2021\$/MT CO ₂)			
			Speed Bump 1		Speed Bump 2	
	2021	2030	2021	2030	2021	2030
\$39 Price Ceiling	\$39	\$39	\$25	\$25	\$32	\$32
\$65 Price Ceiling rising at 5%	\$65	\$101	\$41	\$64	\$53	\$83
\$65 Price Ceiling rising at 1%	\$65	\$71	\$41	\$45	\$53	\$58

Table 3: Assumptions about Cap-and-Trade Program Common to all Scenarios

GHG Target		Cap-and-Trade	Offsets Allowed (% Obligation)		
2020	2030	All Years	2018-2020	2021-2025	Post 2025
1990 levels	40% below 1990 levels	Economy-wide	8%	4%	6%

Table 4: Complementary Measures Common to all Scenarios

LCFS (Improvement in Carbon Intensity from 2010)		ZEV Requirement (Millions of ZEVs)		Efficiency Standard (Improvement from 2010)	RPS Program Renewables Requirement	
2020	2030	2025	2030	2030	2020	2030
10%	18%	1.5	4.2	Double	33%	50%

(WSPA – NERA Appendix)

²⁹⁶ The NewERA model fully integrates a detailed bottom-up, unit level electricity sector model with a top-down macroeconomic model of the U.S. economy.

²⁹⁷ In this study, NERA assumes that all revenues from the sale of cap-and-trade allowances and ceiling price allowances are recycled back to households in a lump sum manner, which in general is economically more efficient than a policy to expend the revenues on specific projects. If we were to instead model the current implementation of earmarking revenues for specific projects, we would most likely project larger negative impacts.

Comment:

Following the passage of AB 398, CARB is taking on a big task to improve cost containment within the Cap-and-Trade Regulation by establishing a price ceiling and two intermediate price containment points or speed bumps...

First, I wanted to request your consideration for the comments submitted by WSPA on the proposed regulation as we believe that they will enhance it. In reviewing the proposed regulation, CARB staff has chosen the ceiling and speed bumps to escalate at five percent, the same rate as the floor. It is unclear why this was chosen, as it only serves to increase the cost associated with the program. Peeling back the layers of previous rulemaking documents, the five percent escalator is based on the federal cap-and-trade proposal by Waxman-Markey in 2009, which intended to match a firm's alternate investment options and encourage early reductions. This reasoning has little to do with cost containment. (MARATHON)

Comment:**A Reasonable Price Ceiling and Speed Bumps Provide Essential Cost Containment**

CMTA believes that the 45-day amendments do not sufficiently address the intent of AB 398 in calling for a price ceiling and price containment points (aka 'speed bumps') that protect consumers and business from excessive costs should emission allowance process suddenly skyrocket. Simple changes to these proposals can significantly improve the cost containment function.

Specifically, the price ceiling escalator of five percent plus the Consumer Price Index (CPI) unnecessarily increases the price ceiling in a manner that is not consistent with the protections required, nor is it necessary to prevent a convergence of the price floor and ceiling into a de facto carbon tax. Current regulations have a single reserve price (a soft price ceiling) of \$58.65 above the floor price resulting in a consistent gap between those two price levels and providing space for the allowance auction and secondary market to work. CMTA recommends that CARB eliminate the escalator on the price ceiling and continue the existing model by setting the price ceiling at a flat rate of above the floor price.

Additionally, CMTA recommend that the speed bumps be moved from the proposed to one-half and three-quarters levels down to the one-third and two-thirds levels in order to provide an earlier signal and check on rapidly increasing prices. (CMTA2)

Comment:

With this letter, we reiterate our previous comments dated March 16, May 16 and July 5, 2018^{298,299,300}, and incorporate them into the Administrative Record by reference. As a member of WSPA, Phillips 66 also supports WSPA's comments and comments by Latham and Watkins made on WSPA's behalf. Following are further clarifications and amplifications especially in the critical area of cost containment.

Proposed Price Ceiling Fails to Adequately Address and Balance Six Criteria from AB 398

1. Adverse Economic Impact: AB 398 mandates "the need to avoid adverse impacts on resident households, businesses and the state's economy" in adopting a price ceiling. The ISOR Appendix C, Updated Standardized Regulatory Impact Assessment (SRIA), discusses the relative economic impacts of the proposed price ceiling structure versus a current regulation "baseline scenario" and versus two alternative price ceiling structures (higher cost structure Alternative 1 and lower cost structure Alternative 2). Alternative 2 with a lower price ceiling resulted in a reduction of \$5.0 billion in cost to industry in 2030 versus the current regulation. CARB, however, rejects this lower price ceiling arguing that the net overall impact to consumers and the State is small and because it "may be too low to incent the abatement technologies" (p. 84). CARB falls short in considering economic benefit from Alternative 2.

NERA's most recent work, referenced in WSPA's submitted comments, evaluates the relative economic impact to individuals and the State economy under different price ceiling assumptions. NERA's work clearly demonstrates greater economic harm with CARB's proposal than other alternatives.

2. 2020 Tier Prices of Allowance Price Containment Reserve (APCR): The ISOR states that the proposed 2021-2030 price ceiling continues the price design structure of the current APCR and argues that this is important to communicate a similar minimum-to-maximum price "window of expectation" for long-term carbon reduction investments. CARB's proposal which escalates at 5% plus CPI annually creates an always widening and unjustified spread between the floor and price ceiling. This spread becomes even wider than exists with the current regulation single tier prices after 2027 as CARB notes, when cost control may be especially critical. CARB falls short in establishing good cost control with this proposal.

3. Full Social Cost: A core guiding principle is that the cost of carbon reduction should in no circumstance exceed the Social Cost of Carbon (SCC) (or social benefit to society), thus preserving net positive benefits to society. Dr. Robert Stavins of the Harvard Kennedy School points out that creating a program where program costs can exceed the net risks overall economic harm to society. Dr. Stavins and Dr. Steven Rose

²⁹⁸ https://www.arb.ca.gov/lists/com-att_ach/37-ct-3-2-18-wkshp_-ws-B3dWOAd_vUG8GbF17.pdf

²⁹⁹ https://www.arb.ca.gov/lists/com-att_ach/1227-ct-4-26-18-wkshp-ws-B3dUOI16Uml_R01M_6.pdf

³⁰⁰ https://www.arb.ca.gov/lists/com-att_ach/11-ct-6-21-18-wksh_p-ws-VjVXJQFN_HUEd_wll.pdf

of EPRI have done extensive research in this area. CARB's proposed price ceiling escalating at 5% plus CPI annually, elevates the price ceiling to values higher than the central-tendency sec values recommended. CARB therefore falls short in properly considering and giving proper weight to SCC in setting the price ceiling triggers. The sec should serve as a "not-to-exceed" principle for California allowance prices. In fact, concerns about economic impact, leakage and linkage argue for a ceiling lower than the sec.

4. Auction Reserve Price: The annual escalation in the auction floor price of 5% plus CPI provides an investment signal. However, there is no justification to escalate the floor price beyond the CPI annual inflation rate.

5. Leakage: CARB is required to consider "the potential for environmental and economic leakage" in establishing a price ceiling. The risk of environmental and economic leakage is exacerbated with prices increasing at CPI + 5% annually and with the current limited linkage to California's Cap-and-Trade program.

6. Cost of Reduction: CARB is required to consider "the cost per metric ton of greenhouse gas emissions reductions to achieve the statewide emissions targets". The Appendix C SRIA makes the following statements on pages 59-60:

- "Staff analysis of abatement options suggests that there are sufficient abatement opportunities below the price ceiling for covered entities to react to high prices through direct reductions."
- "in the unlikely event cost containment is triggered", and
- "it is impossible to know in advance what covered or non-covered entities will do to comply".

These statements suggest that CARB is intentionally setting price containment points at levels to drive emissions abatement regardless of the costs involved. While we do not know with exactitude the technology mix or the costs to achieve the State's goals, CARB should not set a price ceiling that exceeds the sec, and that is so high as to cause economic harm.

Following are additional points with respect to the proposed price ceiling and the six factors which should be considered

- **CARB sets overly aggressive speedbump and price ceiling targets** - CARB states in the ISOR Appendix D that allowance budgets from 2013 through 2030 are binding on expected GHG emissions and that the supply of allowances will not exceed demand during the regulatory period. As such CARB recognizes that preservation and use of banked, otherwise unused/unsold and reserve allowances is essential and expected. Since the reserve allowances can only be accessed at speedbumps or ceiling prices, this suggests that program prices

could reach those price points. Setting the speedbumps and price ceiling too high necessarily risks volatility and economic harm to the state economy.

- This conflicts with AB 398 Criteria 1 and 5 above .
- **CARB improperly uses consultant price forecasts** - CARB presents studies from three third-party consultants in the ISOR, Appendix D pp. 13-14, as evidence that allowance prices will increase over time. CARB seems to, in part, rely on these studies to also conclude that they do not expect allowance prices will reach the price ceiling (ISOR, p. 28). While CARB asserts consistency in the findings shown in Appendix D, Table 2, it is important to note that ICF cites a very wide range on its estimate. It is also important to note that CARB uses a study from California Carbon Info (CCI) dated 2016. We are aware the CCI may have an updated view with higher values. **Using outdated consultant views as justification for the price ceiling proposal is arbitrary and risks harm to the economy.**
 - This conflicts with AB 398 Criteria 1, 5 and 6 above.
- **Speedbump and price ceiling targets exceed the social cost of carbon** - While the sec is a measure of the societal benefit to reducing carbon, abatement costs which exceed the SCC only serve to harm the economy, as Dr. Stavins points out. As mentioned earlier, the proposed price containment points are set at levels destined to exceed the sec.
 - This conflicts with AB 398 Criteria 1, 3 and 6 above.

Recommendation: CARB should set the price ceiling to no higher than the Social Cost of Carbon.

Tier and Price Ceiling Escalation

Annual escalation of the floor price, speedbumps (future Reserve) and price ceiling should be such that it never allows costs to exceed the Social Cost of Carbon. As CARB's own work shows, proposed escalation of 5% plus CPI annually would allow the proposed second speedbump to be higher than central tendency sec in most years and the price ceiling always higher than sec. There is no justification for additional escalation beyond CPI.

Recommendation: Annual price escalation should be CPI only with no additional assigned escalation factor to ensure that allowance prices never exceed the SCC and to avoid economic harm.

Establish "Speedbump" Prices at 1/3 and 2/3 interval between Floor and Ceiling

A successful outcome to cost containment design would be a steadily increasing but stable price structure over the span of the 2019-2030 program. With the legislature's designation of two price reserve tiers (speedbumps), we are aware of no justification for

placement of these other than at 1/3 and 2/3 intervals between the floor and ceiling. CARB's proposal to 1) place them at 1/2 and 3/4 price intervals between the floor and ceiling and 2) place the majority of the volume in the second vs. first speedbump combine to impede access to and increase the overall cost of Reserve allowances to obligated parties.

Recommendation: Establish the speedbumps at the 1/3 and 2/3 interval between floor and ceiling, assuming adoption of a reasonable price ceiling as recommended above...

Conclusion

Phillips 66 supports AB 398's recognition of the importance of adding cost containment features to the Cap- and-Trade program. CARB must preserve stable allowance pricing throughout the program's extension to 2030, using effective price speedbumps and the price ceiling, to protect California consumers and the State economy from price shocks and unintended consequences, and to provide certainty for low carbon investments. The mandated cost-containment features must be designed with the expectation that speed bumps and ceiling price will be triggered. Additionally, maintaining liquidity of allowances is essential to price stability and the long-term viability of the program. (PHILLIPS66)

Comment:

But we do have concerns with other recommendations, because they're not in compliance with the directive of AB 398 with regard to cost containment measures.

These issues are critical to keeping costs low for consumers and businesses.

Specifically, we request the Board to require additional information on the price ceiling and the use of speed bumps.

In order to ensure our program is cost effective and a program that other states and nations and -- would consider linking to, we need a lower price ceiling and we need speed bumps to be placed at the one-third and two-thirds distance between the projected floor and the ceiling prices. So we hope that you take these considerations and suggestions, and -- as we move forward. (CCPC2)

Comment:

CalChamber supports implementation of a robust Cap-and-Trade Program as a cost effective means of achieving California's ambitious climate change goals, and we appreciate the hard work of the Board and staff in this proposed regulation, which does provide long-term market stability by keeping most of cap and trade's features in tact. AB 398 directs CARB to implement regulations to extend the Cap-and-Trade Program using best available science, and consider, among other factors, avoidance of adverse impacts on California households, businesses, and the economy, as well as the potential for economic and environmental leakage outside of the state of California. To

that end, the proposed regulation does incorporate a discussion of the social cost of carbon, but does set the price ceiling of carbon's rating well above that level, with no apparent scientific rationale. CARB staff suggests that the best available science regarding the social cost of carbon, here the interagency working group, which was mentioned earlier, is an Obama era report, is insufficient to account for the social cost of carbon. However, in reading the Statement of Reasons, it does not appear to account for how a five percent escalator is scientifically supported nor consistent with the balancing of any of the statutory factors required by AB 398.

The proposal that sets the price ceiling at a level far above the social cost of emitting carbon, inconsistent with the best available science, and without regard to adverse impacts on California residents and businesses. Failing to properly balance statutory factors in setting the price ceiling and in evaluating the speed bumps and third compliance period factors creates easy fodder for environmental attorneys to challenge these regulations as inconsistent with the legislative mandate. It's important to remember that California makes up a mere one percent of global GHG emissions.

Where California can make its -- most impact on global climate change is by serving as a model for a robust cost effective cap-and-trade system that encourages participation by other jurisdictions. This system requires buy-in from all parties, not just government and environmental groups, but from the businesses and industries that will support and implement these regulations.

Setting unreasonably high price ceilings and speed bumps that cause spikes in pricing and trading does not encourage participation by more moderate states, many of which have recently rejected attempts at major climate initiatives. CalChamber is afraid to step out on a limb and support additional costs where there's an immediate need, such as opposing the repeal of California's gas tax. CalChamber supported 398, and the path to get it passed was not an easy one.

If it is difficult in California, imagine how difficult it will be in more moderate states. Here, the best available science must be implemented, and the legislature's balancing factors must be considered when finalizing the regulations.

Imagine the success we can have in California if we can tell other states and nations that not only is our Cap-and-Trade Program state of the art, but has buy-in from those it regulates. (CALCHAMBER)

Comment:

Our comments today, as with those that we've made in the past, center on cost containment and focus on... a reasonable price ceiling paired with appropriately placed price containment points or speed bumps...

As it pertains to the price ceiling and speed bump design, CMTA is concerned that the proposed amendments fail to meet the legislative intent of AB 398. To better address this, we would recommend that ARB eliminate the five percent escalator on the price

ceiling, because it is unnecessary, and only serves to create the opportunity for exceedingly high carbon prices.

This creates severe political instability and jeopardizes potential linkage with other jurisdictions. An appropriate course of action in this case would be to continue the existing model by setting the price ceiling at a flat rate above the floor price. Further, we would suggest that the speed bumps be moved from the proposed one-half and three-quarter levels down to the one-third and two-third levels, in order to provide an earlier signal and check on rapidly increasing prices. (CMTA3)

Comment:

WSPA believes that several elements of CARB's Proposal are not supported by the record and do not comply with California law. In WSPA's view, adoption of the Proposal without the changes requested herein would be arbitrary and capricious and render the Cap-and-Trade Program legally vulnerable.

As set forth in greater detail below, WSPA's primary concerns relate to CARB's proposed price ceiling (including both the level of the initial price ceiling and the proposed annual 5% escalator). This proposal is flawed in many respects, including the following:

1. The proposed price ceiling is not based on a reasonable interpretation of AB 398 and AB 32 nor on a reasoned analysis of the relevant statutory factors. The Initial Statement of Reasons ("**ISOR**") offers only a cursory review of the relevant statutory factors under AB 398, and its interpretation, balancing, and application of those factors is arbitrary and unsupported by reasoned analysis. Among other issues, the ISOR fails to consider the economic impacts of the proposed price ceiling at approximately \$100 (in 2018 dollars)³⁰¹ in 2030 on consumers and on the viability of the Cap-and-Trade Program. In addition, CARB has not justified the use of a 5% annual escalator and the application of such escalator to the price ceiling is, accordingly, arbitrary and capricious.
2. CARB's selection of a 2021 ceiling of \$61 and its application of the 5% escalator results in a 2030 price ceiling of approximately \$100 in 2018 dollars. This is dramatically (roughly 66%) higher than the \$60.39 value from the Social Cost of Carbon that CARB identifies as its benchmark. CARB offers no rationale for setting the 2030 price ceiling at a level so far in excess of its benchmark 2030 estimate of the social cost of carbon. Under AB 398, the social cost of carbon should be considered a reasonable upper bound for the price ceiling, as expenditures in excess of the social cost of carbon would impose higher costs than the benefits, and thus would be irrational.
3. The price ceiling is intended to ensure that the economic impacts of the Cap-and-Trade Program on California do not exceed an acceptable maximum level,

³⁰¹ Please see discussion below of 2018 versus 2021 dollars.

as well as to prevent economic and environmental leakage. AB 398 expressly requires CARB to consider such leakage in setting the price ceiling. But while the Proposal makes cursory mention of this factor, it is supported by no analysis and fails to recognize that the proposed price ceiling is set far too high to prevent such leakage. The result is a program that could cause serious harm to California consumers and businesses while failing to achieve the State's greenhouse gas ("GHG") reduction targets because of emissions leakage.

4. There is no empirical or theoretical basis for CARB's notion that businesses make or have made GHG reduction investment decisions based on a delta between the floor price and the current or projected tier 3 Allowance Price Containment Reserve ("APCR") price. To the contrary, a large cross section of businesses regulated by the Cap-and-Trade Program assume that a California Governor will suspend and a California Legislature will terminate the Cap-and-Trade Program if allowance prices come anywhere close to the current or projected tier 3 APCR prices.
5. AB 32 requires CARB to consult with other states, the federal government, and other nations to, among other things, facilitate the development of integrated and cost-effective (*i.e.*, linked) regional, national, and international GHG reduction programs. CARB's proposed price ceiling is inconsistent with other existing carbon pricing schemes in the United States, North America, and globally and will present a potentially insurmountable obstacle to linkage.

Based on the foregoing, WSPA urges CARB to: (1) conduct an appropriate economic analysis of reasonable alternative price ceiling designs and how these affect each of the factors identified in AB 398; (2) eliminate the 5% escalator, which is arbitrary and capricious and lacks economic or policy justification; and (3) select a price ceiling equal to or lower than a defensible 2030 estimate of the social cost of carbon, at a 3% discount rate...

We note at the outset that, unless otherwise noted, these comments refer to 2018 dollars in order to maintain consistency with the approach used by CARB in the ISOR and thus avoid confusion. However, because the proposed regulation itself uses 2021 dollars, any dollar figures in these comments should be translated to 2021 dollars for purposes of comment on the proposed regulation. WSPA objects to CARB's use of a different year in the ISOR than in the proposed regulation, which reduces transparency, causes confusion, and is contrary to the plain English requirement that state agencies explain their changes clearly.

I. CARB'S PROPOSED PRICE CEILING IS NOT BASED ON REASONED ANALYSIS AND IS INCONSISTENT WITH AB 398 AND AB 32

A. AB 398 and AB 32's Text and Purpose

California Health and Safety Code Section 38562(c)(2), as enacted by AB 398, provides that in establishing a price ceiling applicable from January 1, 2021, through December 31, 2030, inclusive, CARB “shall consider, using the best available science, all of the following:

- (I) The need to avoid adverse impacts on resident households, businesses, and the state’s economy.
- (II) The 2020 tier prices of the allowance price containment reserve.
- (III) The full social cost associated with emitting a metric ton of greenhouse gases.
- (IV) The auction reserve price.
- (V) The potential for environmental and economic leakage.
- (VI) The cost per metric ton of greenhouse gas emissions reductions to achieve the statewide emissions targets established in Section 38550 [i.e., the 2020 target] and 38566 [i.e., the 2030 target].”

In addition to the statute’s specific directive with regard to use of “best available science,” Section 38562(e) directs CARB to “rely upon the best available economic and scientific information and its assessment of existing and projected technological capabilities when adopting the regulations required by this section.”

Further, AB 32 requires that CARB develop regulations that are cost effective, facilitate linkage with other market-based GHG reduction programs, minimize leakage, and minimize adverse impacts on consumers. Specifically, AB 32 requires CARB to adopt “[GHG] emission limits and emission reduction measures by regulation to achieve . . . cost-effective reductions in [GHG] emissions in furtherance of achieving the [2020 target].”³⁰² The statute reiterates the requirement that GHG reductions be achieved in a cost-effective manner ten separate times, including in reference to the adoption of rules and regulations, approval of the scoping plan, and the adoption of the Program.³⁰³ AB 32 also directs CARB to consult with other states, the federal government, and other nations “to facilitate the development of integrated and cost-effective regional, national, and international greenhouse gas reduction programs.”³⁰⁴ The statute expressly requires CARB to “minimize leakage” when adopting regulations under the relevant part (including the instant rulemaking).³⁰⁵ Section 38501 as amended by AB 398, directs CARB to extend the cap-and-trade regime under Section 38562 in a manner that “minimizes any adverse impacts on state consumers.”³⁰⁶

³⁰² Cal. Health & Safety Code § 38562(a).

³⁰³ Id. §§ 38560, 38561(a), 38562(c).

³⁰⁴ Id. § 38564.

³⁰⁵ 6 Id. § 38562(b)(8).

³⁰⁶ 7 Id. § 38501(i).

Finally, as with any rulemaking, CARB must “adequately consid[er] all relevant factors, and . . . demonstrat[e] a rational connection between those factors, the choice made, and the purposes of the enabling statute.” *American Coatings Ass’n, Inc. v. South Coast Air Quality Dist.*, 54 Cal. 4th 446, 461 (2012).

B. CARB’s Proposal Is Not Based On a Reasonable Interpretation or Application of The Statutes

In seeking to justify its proposed ceiling, CARB offers some limited discussion of each of six statutory factors set forth above. However, the Board does not provide a transparent or reasonable interpretation of the factors individually or of how they should be balanced and applied in determining the price ceiling (including both the level of the ceiling and whether or to what extent the ceiling should increase beyond the rate of inflation).

1. CARB Offers No Explanation or Reasoned Justification for Its Balancing of the Statutory Factors

CARB is required to consider all six statutory factors under AB 398 in setting the price ceiling. Because the factors point in different directions, it is clear that the Legislature intended the Board to balance and optimize among them in setting the price ceiling. To identify a reasonable price ceiling, CARB must (1) clearly explain the Board’s interpretation of each factor and its comparative weight and directional influence in setting the level of the price ceiling, (2) use the factors to identify a reasonable set of alternative ceilings (including both the level and whether and what level of escalation to apply), and (3) analyze and compare the impacts of these alternative designs on each of the factors and the balancing of the factors.

CARB provides no discussion of how the six statutory factors should be integrated or balanced. Rather, as explained below, it identifies a proposed price ceiling and then makes cursory and in many cases either arbitrary or otherwise unreasonable observations about the proposed price in relation to each of the factors independently. This is not a reasonable construction or application of the statute, and WSPA asks that CARB revisit its proposed approach. As set forth below, under a reasonable interpretation of the statutory factors, the “auction reserve price” establishes a logical “lower bound,” whereas the social cost of carbon establishes a logical “upper bound” of the range where CARB can potentially set the price ceiling in compliance with AB 398. Between these two bounding points, AB 398 requires CARB to consider the impacts of the other factors – including the economic impacts of the ceiling on California households and businesses and the potential for leakage, both of which would counsel in favor of setting the price ceiling toward the lower end of the potential range.

2. Social Cost of Carbon

The social cost of carbon is appropriately considered as a reasonable upper bound for the price ceiling. The U.S. Government’s Interagency Working Group on the Social Cost of Carbon (“**IWG**”) defined the social cost of carbon as “an estimate of the monetized

damages associated with an incremental increase in carbon emissions in a given year.”³⁰⁷ Imposition of economic costs in excess of the social cost of carbon would be irrational, as this would impose social costs in excess of the benefits of mitigation. As explained in a recent analysis by Dr. Todd Schatzki of the Analysis Group and Dr. Robert Stavins of Harvard University: “Setting the Price Ceiling above the social cost of carbon creates incentives for covered sources to undertake abatement of GHG emissions that is more costly than the damages these emissions create.”³⁰⁸ Accordingly, CARB should set the price ceiling at a level at or below a reasonable estimate of the social cost of carbon.

In considering this factor, the ISOR (at pages 35-39) focuses on estimates of the social cost of carbon made by IWG. CARB does not endorse or justify the selection of any specific estimate of the social cost of carbon. The ISOR focuses, however, on the IWG’s estimate of the 2030 value of the social cost of carbon – at a 3% discount rate – of \$60.29 in 2018 dollars. CARB states:

Staff believes that a price ceiling below the 2030 value of \$60.39 would fail to recognize both [the social cost of carbon] and would also omit consideration of additional significant physical, ecological, and economic impacts of GHG emissions. Staff believes, however, that while new research indicates the [social cost of carbon] may be much higher, even closer to \$220, setting a price ceiling based on this research would be excessive relative to prices needed to achieve the 2030 target, and may be so high that it may lead to leakage and adverse impacts to the economy and households. Staff is proposing a price ceiling of \$61 in 2021 (real 2018 dollars), which would escalate over time. This value captures the [social cost of carbon] as established by the IWG, but recognizes that value does not represent the full social cost of carbon.³⁰⁹

This analysis is flawed in several respects. Most important, CARB’s application of the 5% escalator results in a *2030 price ceiling of more than \$99 in 2018 dollars*. This is dramatically (roughly 66%) higher than the \$60.39 value from the IWG 2030 estimate (at 3%) that CARB identifies as its benchmark. CARB offers no rationale for setting a 2030 price ceiling at a level so far in excess of its benchmark 2030 estimate of the social cost of carbon. As discussed above, the social cost of carbon should be considered a reasonable upper bound for the price ceiling, as expenditures in excess of the social cost of carbon would impose higher costs than the benefits achieved and would thus be irrational.

³⁰⁷ U.S. Gov’t, Interagency Working Group on Social Cost of Carbon, Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866 at 1 (Feb. 2010).

³⁰⁸ Exhibit 1, Todd Schatzki and Robert Stavins, Key Issues Facing California’s GHG Cap-and- Trade System for 2021-2030 at ES-1 (July 2018),

http://www.analysisgroup.com/uploadedfiles/content/insights/publishing/ca_ghg_cap_and_trade_price_provisions.pdf.

³⁰⁹ ISOR at 38-39.

Second, CARB offers no record basis to substantiate its conclusory statement that the actual 2030 social cost of carbon is much higher than its \$60.39 benchmark and certainly not that it could be as high as \$220. Recent analysis by Dr. Todd Schatzki of the Analysis Group and Dr. Robert Stavins of Harvard University shows that the central tendency of the 2030 estimates in the IWG's work is \$79 in 2030 dollars (roughly equivalent to \$61 in 2018 dollars).³¹⁰ This is similar to CARB's proposed IWG-derived benchmark of \$60.39 and significantly lower than CARB's proposed 2030 price ceiling. Moreover, recent work by Dr. Steven Rose of the Electric Power Research Institute (attached at Exhibits 2 and 3) recommends application of conservative minimum standards for transparency, scientific basis and justification, and plausibility of assumptions and modeling structure to the models and data underpinning the IWG estimates. Dr. Rose concludes that application of these criteria would result in an average estimate of the 2030 value of the social cost of carbon – using a 3% discount rate – of \$35 in 2007 dollars. The \$35 value for 2030 is consistent with the \$30 for 2020 value reflected in the exhibits.³¹¹ Dr. Rose's 2030 value of \$35 in 2007 dollars equates to approximately \$42.61 in 2018 dollars.³¹²

WSPA urges CARB to consider Dr. Rose's recommended values in identifying the 2030 social cost of carbon and to use the estimated social cost of carbon in 2030 as an upper bound for the price ceiling. Whatever value CARB elects to use in considering this statutory factor, it must defend the validity of the relevant estimate and the basis for CARB's selection of that estimate. It has not done so in the ISOR.

3. Auction Reserve Price

The most reasonable reading of AB 398's reference to the "auction reserve price" is that it is intended to establish a logical lower bound for a potential price ceiling. Indeed, if CARB were to set a price ceiling below the reserve price, the program would become unworkable, which clearly would be contrary to AB 398.

With regard to this factor (discussed at page 39 of the ISOR), CARB indicates that it has proposed to retain the 5% escalator currently in the auction reserve price and concludes that carrying forward an increasing gap between the auction reserve price and the price ceiling is appropriate for several reasons. First, the "extension of the existing structure where the Auction Reserve Price and price ceiling values do not converge . . . maintains the price signal to ensure the lowest [sic] reductions are targeted, while allowing for

³¹⁰ 11 Ex. 1 at 7.

³¹¹ 12 Exhibit 2, Steven Rose, Understanding, Improving and Using the Social Cost of Carbon at 33 (September 19, 2018).

³¹² 13 We also note that the New York Independent System Operator (NYISO) is currently in the process of considering a "straw proposal" to incorporate the social cost of carbon into its wholesale electricity markets. In its recent draft report, NYISO used a 2030 value of \$69.32 in nominal dollars, implying a significantly lower value in 2018 dollars. See NYISO, Carbon Pricing Draft Recommendations, A Report Prepared for the Integrating Public Policy Task Force at 4 (Aug. 2, 2018), https://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg_ipptf/meeting_materials/2018-08-27/Carbon%20Pricing%20Draft%20Recommendations%2020180802.pdf.

price discovery across a consistent range for all periods of the Program across all covered sectors. Narrowing the range for potential allowance prices over time results in the Program operating more like a carbon tax and it limits abatement potential.” Further, CARB argues that this approach allows maintenance of a fixed distance between the new post-2020 cost containment points (“speed bumps”) at a fixed distance from one another, rather than converging into the price ceiling.

As discussed Section I.A.5 below, there is no clear rationale for maintaining a specific “window” or delta between the floor and the ceiling. Further, CARB’s Proposal does not maintain constant separation between the proposed price floor and ceiling; because of the 5% escalator, the ceiling increases at a greater rate in absolute (inflation-adjusted) terms than does the floor. To the extent CARB is concerned that too low a price ceiling will cause the ceiling to be triggered and make the program function like a carbon tax, this bears no relationship to the Auction Reserve Price per se; concern about loss of abatement under the program is misplaced, as discussed elsewhere in these comments. Finally, there are alternative approaches to design of the “speed bumps” that could avoid the convergence concern CARB identifies. And it is unclear, in any event, why this concern is raised in relation to the “auction reserve price” discussion.

Further, as discussed in Section I.D below, the auction reserve price incorporates a 5% escalator, but the rationale for including this escalator in the price floor does not apply to the setting of a price ceiling (and certainly CARB has failed to articulate why it would).

4. Adverse Impacts on Resident Households, Businesses, and the State’s Economy and Potential for Environmental and Economic Leakage

The “need to avoid adverse impacts on resident households, businesses, and the state’s economy” and the “potential for environmental and economic leakage” both militate in favor of a lower price ceiling. These factors accordingly provide grounds for deviating below the social cost of carbon and the 2020 tier prices. The objective of a price ceiling is to ensure that compliance costs – and the resulting impacts on households, businesses, and the State’s economy – do not exceed a predetermined limit. Other things being equal, the higher the price ceiling the more likely the environmental and economic leakage; as allowance prices and in-state economic impacts increase, economic activity and associated emissions will move out of state.³¹³

CARB briefly considers the application of these two factors, in conjunction, to the price ceiling at pages 33-34 of the ISOR. It states that “in advance of widespread carbon pricing and deployment of GHG reducing technologies, California businesses may be more sensitive to potential emissions leakage,” and that “[t]his concern supports the selection of a price ceiling path below the single tier Reserve value in the early 2020s.” It goes on to state that “the price ceiling cannot be set to so low that covered entities’

³¹³ Ex. 1 at ES-2.

primary compliance strategy is to make substantial and continued use of the price ceiling units”

This cursory analysis gives no consideration at all to the interpretation of “adverse impacts on resident households, businesses, and the state’s economy” or to how the proposed price ceiling level and design affects this factor. With regard to environmental and economic leakage, CARB correctly identifies that a higher initial cap would be more likely to result in leakage. But it does not provide any analysis of the 5% escalator or the overall proposed price ceilings may impact leakage – nor what role this factor plays in its selection of the proposed level and design in lieu of alternative options.

As discussed further in Section I.C below, CARB offers virtually no analysis of these factors in the ISOR or the Standardized Regulatory Impact Analysis (“SRIA”). It provides little to no discussion or analysis of the incremental economic impact of the proposed price ceiling on consumers, businesses, or the state’s economy, and no discussion of critically important issues such as gasoline prices. Nor does it conduct any analysis at all of the risk of economic and environmental leakage associated with its Proposal, nor does it comparatively analyze alternative ceiling designs. In short, the Board has not adequately “considered” either of these two factors – and it certainly has not met its legal obligation to do so based on the “best available science” or the “best available economic and scientific information.”

5. The 2020 Tier Prices of the Allowance Price Containment Reserve

AB 398’s reference to consideration of the “2020 tier prices” of the APCR refers to the three-tier APCR structure. This factor should be understood to reflect a benchmark for continuity with the pre-2021 program and a potential alternative upper bound for the price ceiling. The prices for the three tiers of the APCR in 2020 are (in 2018 dollars): \$59.82 for Tier 1, \$67.32 for Tier 2, and \$74.89 for Tier 3.³¹⁴ The Legislature specifically directed CARB to consider the “2020 tier prices” (plural) – indicating that it was to consider the three tiers of APCR prices and the specific prices in 2020, rather than considering only the tier 3 price (singular), the “single-tier” price (singular) CARB established for 2021 and later under the current Regulation, or any projection of post-2020 APCR prices. Furthermore, the 2020 APCR tier 3 price is already well in excess of any reasonable estimate of the 2020 social cost of carbon, indicating that this price should not be the basis for selecting the price ceiling.

CARB discusses its interpretation of this factor at pages 34-35 of the ISOR. CARB’s discussion focuses on two points it deems relevant to setting the price ceiling:

- First, the amendments to the Regulation that were adopted in 2017 “provided a framework for the post-2020 period of the Regulation and extended the upper bound of price expectations. . . . To maintain continuity for entities’ assessments

³¹⁴ Calculated based on 2018 APCR prices of \$54.26, \$61.06, and \$67.93, and adding the 5% annual increase provided for in the Regulations with no adjustment for CPI.

of the value of GHG reduction investments, staff set the proposed price ceiling at a level that roughly maintains the ‘window’ that would have been provided by the [post-2020] single Reserve tier above the Auction Reserve Price.” The ISOR then appears to suggest a rough equation of the delta between the 2015 floor price and tier 3 price, the delta between the 2021 floor price and projected single tier APCR price (under the current Regulation), and the delta between the 2025 floor price and proposed price ceiling.

- Second, “[m]aintaining continuity of expectations is also important because some covered entities have already taken early action to reduce GHGs. Setting the price ceiling at a level significantly below the third tier of the current Reserve and single tier post-2020 Reserve price would create a precedent of devaluing early action. Covered entities’ future expectations of the full range of potential allowance values, as well as their expected potential rate of return for their GHG reduction investments, would be undercut by anticipation of the potential for future regulatory revisions that might significantly decrease the price ceiling.”

This interpretation and application of the “2020 tier prices” factor is inconsistent with the statute and irrational for several reasons.

First, the Legislature directed that CARB consider “[t]he 2020 tier prices.” As noted above, this suggests that CARB is to consider all three tiers of prices in 2020. CARB’s focus on tier 3 and its projection of post-2020 single tier prices is inconsistent with the statute.

Second, there is no empirical or theoretical basis for the notion that businesses make or have made GHG reduction investment decisions based on the delta between the floor price and the tier 3 APCR price.

Third, current allowance prices are comparatively low, CARB amended its Regulation to establish post-2020 single tier reserve prices very recently, and the Legislature enacted AB 398 (which calls for the establishment of an entirely new cost containment regime) almost immediately thereafter. Accordingly, there is no basis for the notion that businesses have made or are making GHG reduction investments based on expectations regarding the 2020 tier 3 APCR price, and certainly not based on projected single tier APCR prices for the post-2020 period. In fact, this assertion is absurd as the widespread consensus among members of industry is that, if allowance prices reach levels anywhere close to the tier 3 of the APCR, the resulting impacts on energy prices, including the price of a gallon of gasoline, will result in widespread voter revolt, which will inevitably prompt the Governor to suspend and the Legislature to terminate the Cap-and-Trade Program. These events will not only adversely impact the environment and California’s leadership position in setting environmental policies globally, but it will frustrate industry’s long-term investments in the Cap-and-Trade Program.

Finally, while CARB's proposed price ceiling *starts* below the 2020 tier 3 price, it significantly exceeds CARB's projected post-2021 single tier APCR prices from 2028 onward – including by roughly \$10 in 2030. This is inconsistent with CARB's purported rationale of maintaining continuity of expectations with regard to the upper range of prices and with regard to the delta between the reserve price and the price ceiling.

6. Cost Per Ton to Achieve the 2020 and 2030 Targets

The final factor – the “cost per metric ton of greenhouse gas emissions reductions to achieve the [2020 and 2030] statewide emissions targets” – is relevant insofar as it provides insight on likely allowance prices associated with meeting the cap, and the probability that a given price ceiling in a given year will or will not be triggered. It is important to remember, however, that AB 398 requires that if the ceiling is triggered, the revenues from sales of price ceiling allowances will be used to achieve ton-per-ton reductions outside of the cap, helping to ensure the overall environmental performance of the program. The objective of the price ceiling, moreover, is to ensure that program costs do not exceed an acceptable maximum level. It would be irrational, accordingly, to suggest that the price ceiling should be set above any possible cost per metric ton of abatement, ensuring that the ceiling could never be triggered. Rather, the ceiling must be set at a level reflecting an acceptable maximum level of costs in light of the six factors.

In discussing this factor (at pages 39-40 of the ISOR), CARB appears to identify the need to “stri[k]e a balance between being high enough to allow for a sufficient volume of reductions to occur to meet the 2020 and 2030 targets, and being low enough to meet the AB 398 objectives of minimizing leakage and minimizing adverse impacts to households, businesses, and the California economy.” CARB then states, however, that “[c]ost containment *cannot* interfere with the Cap-and-Trade Program's ability to deliver the GHG reductions needed to achieve the statewide GHG reduction targets. . . . Staff believe the proposed price ceiling will improve the likelihood of meeting the 2030 target, while addressing concerns of cost containment through a variety of *other design features* in the Program, such as the two Reserve tiers, banking, and multi-year compliance periods.” (emphasis added)

This discussion reflects an unreasonable interpretation and application of this factor. First, under CARB's reading of the statute, the price ceiling must be set high enough never to be triggered (thus avoiding any interference with achievement of the 2020 and 2030 targets) and cost containment concerns must be addressed through *other* design features of the overall cap- and-trade regime. This proposed approach would lead to the conclusion that CARB can and should set the price ceiling as high as possible to avoid triggering it, and that CARB's consideration of other statutory factors in setting the price ceiling – such as adverse economic impacts – is largely irrelevant. That cannot be a permissible reading of the statute. Further, CARB's consideration of this factor does not appear to be based on any actual analysis of the estimated cost per ton needed to achieve the 2020 and 2030 targets, or how this relates to CARB's proposed price

ceiling. CARB's cursory reference to the 2017 Scoping Plan analysis of the likelihood that the existing program will achieve the required reductions does nothing to remedy this glaring gap in its analysis. In short, CARB's interpretation and application of this factor is unreasonable and should be remedied through actual analysis of the cost per ton of achieving the 2020 and 2030 targets and how this may impact consideration of the price ceiling level and design.

C. CARB's Proposal Is Not Based on A Reasonable Analysis of Options in Relation to the Statutory Factors

CARB must demonstrate that the ceiling it selects (including both the proposed level and any rate of increase) represents a reasonable balancing of the tradeoffs between the statutory factors. To do so, CARB must identify reasonable alternative approaches and analyze the comparative impacts of these approaches on the six statutory factors. Absent such an analysis, CARB's selection of a ceiling price (and any rate of increase) would necessarily fail to "adequately consider all relevant factors, and . . . demonstrat[e] a rational connection between those factors, the choice made, and the purposes of the enabling statute." *American Coatings Ass'n, Inc. v. South Coast Air Quality Dist.*, 54 Cal. 4th 446, 461 (2012). Further, under the California Administrative Procedure Act, CARB is required to make a "reasoned estimate of all cost impacts of the rule on affected parties." *W. States Petroleum Assn. v. Bd. of Equalization*, 57 Cal. 4th 401, 408–09 (2013). Reliance on "[m]ere speculative belief" or a demonstrably invalid analytical methodology fails to meet this requirement. *Id.* at 428.

CARB's Proposal includes no reasoned analysis linked to the statutory factors it is required to consider in setting the price ceiling. As explained above, the narrative discussion of the factors in the ISOR is cursory, incomplete and arbitrary, does not address alternative ceiling levels or designs, and does not analyze the comparative impacts of alternative designs on the statutory factors. Nor does the SRIA address this. The SRIA purports to analyze three alternatives: The proposed level (2021 level of \$61 + 5% escalator), Alternative 1 (2021 level of \$78.52 + ~12.5% escalator), and Alternative 2 (2021 level \$50 + maintain \$33.18 difference from floor price in each year; equivalent to approximately 1.9% escalator). There are several problems with this analysis, however, that render it uninformative with regard to how best to balance among the six statutory factors in selecting a price ceiling level and design.

First, the SRIA does not analyze the projected economic impacts of the Alternatives in relation to an analysis of available emission mitigation options and costs. Instead, CARB's analysis appears to assume that the pre-selected price ceiling is triggered in 2030 and that allowance values increase from 2020 to 2030 on a path consistent with triggering the ceiling in 2030. CARB's analysis appears to quantify the economic impacts that would result under such assumptions. But such an analysis is entirely divorced from any consideration of estimated abatement costs, how those would affect allowance values, and whether and when these alternative price ceilings would therefore be triggered. As a result, the SRIA provides no reasoned analysis with regard

to how the economic impacts of these alternatives are likely to vary. Accordingly, they provide little or no insight in how best to balance or apply the statutory factors.

Second, even if the SRIA did provide a reasoned analysis of the economic impacts of the Alternatives considered (which it does not), it does not analyze or discuss the relationship between any such analysis and the six statutory factors. There is no discussion or analysis in either the SRIA or the ISOR's main text of how the "potential" economic impacts identified would affect the specific factors for consideration.

Third, there is not a reasonable relationship between the SRIA's (deficient) analysis and the policy option CARB has proposed. Based on the assumptions discussed above, CARB estimates that Alternative 1 (the high 2021 price ceiling + higher escalator) would result in \$13.8-27.9 billion more costs to industry than the proposed alternative, as well as related impacts to state GDP and employment.³¹⁵ CARB estimates that Alternative 2 (the lower price ceiling + lower escalator) would result in \$5.1-19.2 billion lower costs to industry, as well as related decreases in the impacts to state GDP and employment.³¹⁶ Other things being equal, therefore, the analysis (if valid) would indicate that Alternative 2 would be superior to CARB's Proposal – in that it would have lower "adverse impacts on resident households, businesses, and the state's economy" and correspondingly lower "environmental and economic leakage."

The final paragraph of the SRIA, however, states:

The price ceiling in Alternative 2 may be too low to incent the abatement technologies described in Table 22 to achieve the GHG reductions necessary to achieve the State's 2030 reduction target. To achieve the 2030 GHG reduction target, the program may then have to rely on the metric ton for metric ton reductions CARB identifies to sell at the price ceiling and implement the types of measures included in Alternative 1 in the 2017 Scoping Plan to ensure the 2030 target is achieved. Therefore, Alternative 2 does not appear to be a viable alternative to the Amended Regulation.³¹⁷

Table 22 presents ranges of estimated abatement costs for several technologies with applications in California's industrial sectors (including carbon capture and sequestration, concentrated solar thermal, biogas, boiler electrification, hydrogen electrolyzer, and cement sector technologies).

³¹⁵ These numbers are drawn from the June 2018 SRIA at pages 58-59. The September 4, 2018 updated SRIA does not report estimated costs relative to the proposed amended regulation, but reports (at page 75) the same estimated cost of Alternative 1 relative to the current regulation, as does the June 2018 version (\$28 billion).

³¹⁶ These numbers are drawn from the June 2018 SRIA at page 64. The September 4, 2018 updated SRIA does not report estimated costs relative to the proposed amended regulation, but reports (at page 81) the same estimated cost of Alternative 1 relative to the current regulation, as does the June 2018 version (\$5 billion).

³¹⁷ September 4, 2018 Updated SRIA, at 84.

Again, however, CARB provides no actual modeling or analysis of estimated costs of achieving the 2030 emissions target. Any such analysis, among other things, should take appropriate account of reference case emissions, the full range and estimated costs of abatement opportunities in all covered sectors, and the availability of offsets and other compliance flexibilities. Absent such analysis, there is no rational relationship between the abatement cost ranges in Table 22 and any conclusion regarding the likelihood that the price ceiling would be triggered. Among other things, CARB has not established any analytical basis for concluding that the Alternative 2 price ceiling would not provide a price signal adequate to achieve the 2030 reduction target. In fact, it has not established any benchmark at all for what carbon price may be necessary to achieve the target. Furthermore, as discussed above, the cost per ton needed to achieve the target is only one of the statutory factors, and CARB has not explained why this factor should outweigh the others in determining what price ceiling to select.

Finally, all three of CARB's alternatives involve use of an escalator, which appears to range from 1.9% to 12.5%. As discussed below, the use of an escalator appears to be arbitrary and not supported by economic theory or any reasonable policy justification. CARB should consider alternatives that do not include an escalator.

D. The Proposed Five Percent Annual Price Escalator Is Arbitrary and Unreasonable

CARB's proposed price ceiling has two features: the starting level and the 5% annual escalator (in addition to the rate of inflation). While the two features work in tandem, the compounding escalator is independently problematic, because it results in an increase of over 60% in the inflation-adjusted value of the ceiling over the course of the 2021 to 2030 period.

The effect of the escalator is to make the ceiling less and less effective as a backstop price containment mechanism over time, implying a greater and greater tolerance for potential adverse economic impact over time. CARB has offered no rationale or justification for this arbitrary annual increase in the ceiling, and economic theory offers none.

It is important to note that the escalation rate in the current Regulation's single price tier is approximately 1.3%. CARB has not offered any explanation for why the 5% escalator is nevertheless appropriate in setting the ceiling.

As discussed above, to the extent CARB seeks to justify the 5% escalator based on maintaining a certain "window" between the price floor and the price ceiling, this rationale appears to be arbitrary and unjustified. The value of the "window" concept itself is questionable, but even if CARB wanted to maintain a defined spread between the floor price and the ceiling price, it could structure the ceiling to maintain the absolute distance (in constant dollar terms) between them, rather than applying the same percentage-based escalator, which has the effect of widening the gap over time.

It may be that CARB simply intends to mirror the 5% annual escalator in the inflation-adjusted auction reserve (floor) price. The rationale for including this escalator in the floor price, however, appears to be to reflect firms' internal discount rate for the investment of capital – which is typically benchmarked in the 4-5% range. If the real rate of growth in the floor price were not at least as great as this internal discount rate, firms might be incentivized to purchase and bank additional allowances in each year because the rate of return on investment in allowances would be greater than that for alternative investments. This same rationale does not apply to the price ceiling, and accordingly, this is not a defensible rationale for applying the escalator to the ceiling.

In summary, CARB has not provided any justification for the 5% escalator, and WSPA urges the Board to eliminate this arbitrary and unreasonable feature of the proposed price ceiling

E. CARB's Proposal Will Prevent Linkage with Other Jurisdictions

In addition to the specific factors identified in AB 398, AB 32 directs that CARB shall consult with other states, the federal government, and other nations “to facilitate the development of integrated and cost-effective regional, national, and international greenhouse gas reduction programs.”³¹⁸ This directive, to develop regulations in a manner that facilitates linkage with the market-based mechanisms of other jurisdictions, applies equally to CARB's design of the price ceiling. Further, facilitation of linkage supports and is consistent with AB 32's overall and repeated direction that CARB's regulations ensure that the program is “cost effective.” “As entities buy and sell across programs, allowance prices converge, which lowers economic costs of reducing GHG emissions by harmonizing the GHG price signal across a broader area.”³¹⁹

CARB's proposed price ceiling, if adopted, is so high that it will pose an insurmountable barrier to linkage with other programs. As Dr. Schatzki and Dr. Stavins emphasize, other jurisdictions will be “less willing to link with another system if the Price Ceiling is set at a level that is inconsistent with the [other jurisdiction's] policy objectives.”²¹ CARB's proposed price ceiling is dramatically higher than current or projected allowance prices in other jurisdictions in North America, as well as in Europe. If it were to adopt the proposed ceiling, this would likely become a serious obstacle to linkage—directly contravening AB 32's directive. CARB has not analyzed this factor or taken it into account in its Proposal, as required by law; WSPA urges it to do so in adopting its final price ceiling. (WSPA3)

Response: The commenters take issue with the proposed price ceiling and some assert that the proposed price ceiling is arbitrary in light of AB 398 and AB 32. Some commenters requests that CARB conduct an economic analysis of reasonable alternative price ceiling designs; eliminate the 5% annual escalator for the price ceiling value; and select a price ceiling that is equal to or lower than the

³¹⁸ Cal. Health & Safety Code § 38564.

³¹⁹ Ex. 1 at 8.

commenter's preferred price ceiling value. As the expert agency tasked with establishing the price ceiling based on the broad considerations of AB 398, CARB responds by noting that it fully analyzed and proposed an appropriate price ceiling. The price ceiling that CARB proposed is correctly established in light of the AB 398 price ceiling factors, wholly reasonable, and well within the discretion of CARB to adopt. Therefore, CARB declines to make the changes requested by the commenters.

Staff responds to the specific points made in the comments letter below. Due to the length of the comment letter, CARB uses headings to inform the reader of the specific substantive issue that CARB is addressing.

The Statutory Framework Provides Broad Discretion to CARB

One commenter begins its substantive comments (see section I.A of the WSPA3 letter) with a recitation of certain portions of AB 398 and AB 32. As part of this discussion, the commenter focuses on the fact that AB 32 requires CARB to develop regulations that are cost-effective, facilitate linkage, minimize leakage, and minimize adverse impacts on consumers. The implication here (which is discussed further below) seems to be that CARB is not adequately considering these factors in proposing the price ceiling.

For present purposes, CARB notes that AB 32 confers significant discretion on CARB. Beyond the considerations indicated above that one commenter discusses, AB 32 also requires CARB to adopt emission reduction measures that achieve “the maximum technologically feasible” GHG emission reductions in furtherance of achieving the statewide GHG emissions limit. AB 32 also requires CARB to consider overall societal benefits, including reductions in other air pollutants, diversification of energy sources, and other benefits to the economy, environment, and public health in establishing GHG regulations. In reviewing challenges to CARB programs under AB 32, the California Court of Appeal has stated that “[t]hese directives are exceptionally broad and open-ended.” *Ass'n of Irrigated Residents v. State Air Res. Bd.*, 206 Cal. App. 4th 1487, 1495 (2012) (upholding Scoping Plan); see also *Our Children's Earth Found. v. State Air Res. Bd.*, 234 Cal. App. 4th 870, 888 (2015) (upholding standards-based offset provisions of Cap-and-Trade Regulation); *California Chamber of Commerce v. State Air Res. Bd.*, 10 Cal. App. 5th 604, 622 (2017) (upholding auction provisions of Cap-and-Trade Regulation) (hereinafter, *Cal Chamber*). AB 32 remains a broad grant of authority to CARB and reinforces—rather than undermines—the reasonableness of CARB's proposed price ceiling.

Staff addresses the relevant requirements of AB 398 below.

The Commenters Demand CARB Undertake Analyses that Are Not Required By Law

Some commenters assert that the price ceiling is not based on a reasonable interpretation or application of AB 398 and AB 32. One commenter's point in this regard (section I.B.1 of WSPA3 letter) is that CARB must explain the Board's interpretation of each factor and its comparative weight; use the factors to identify a reasonable set of alternative ceilings; and analyze and compare the impacts of these alternatives on each of the factors.

The Commenter's demand is untethered from the law. AB 398 states in relevant part that, for any post-2020 Cap-and-Trade Program, CARB must "[e]stablish a price ceiling. In establishing the price ceiling, the state board shall consider, using the best available science, all of the following:

- (VII) The need to avoid adverse impacts on resident households, businesses, and the state's economy.
- (VIII) The 2020 tier prices of the allowance price containment reserve.
- (IX) The full social cost associated with emitting a metric ton of greenhouse gases.
- (X) The auction reserve price.
- (XI) The potential for environmental and economic leakage.
- (XII) The cost per metric ton of greenhouse gas emissions reductions to achieve the statewide emissions targets established in Sections 38550 and 38566."

(Health & Safety Code § 38562(c)(2)(A)(i)(I-VI).)

In other words, CARB must establish a price ceiling and, in so doing, consider the six factors indicated above. That is all AB 398 requires vis-à-vis establishing the price ceiling. CARB fulfilled this requirement by explaining the rationale for its proposed price ceiling (i.e., analyzing the six statutory factors) in the ISOR. (See ISOR at 28-40.) AB 398 does not require, as the commenter demands, to analyze the comparative weight of each factor; use the factors to identify a reasonable set of alternative ceilings; or analyze and compare the impacts of these alternatives on each of the factors. The commenter cites to no provision of AB 398 for this proposition. Nevertheless, as discussed below, CARB analyzed alternative price ceilings in the ISOR and SRIA, and such analysis complies with the Administrative Procedure Act (APA, specifically Government Code section 11346.2).

AB 398 Does Not Set Lower or Upper Bounds to the Price Ceiling, and a Court Would Defer to CARB's Reasonable Determination of the Price Ceiling

The commenters assert (see e.g., section I.B.1 of WSPA3 letter) that the auction reserve price is a logical "lower bound" and the social cost of carbon is a logical "upper bound" of the range "where CARB can potentially set the price ceiling in compliance with AB 398." Again, the commenters provide no support in the text

of AB 398, its legislative history or any other law. AB 398 does not indicate that any of the six price ceiling considerations correspond with a lower or upper bound. If the Legislature desired to impose such lower or upper bounds to the price ceiling in AB 398, it could have done so. The fact that the Legislature did not impose lower or upper bounds to the price ceiling emphasizes that AB 398 provides discretion to CARB in establishing the price ceiling, as long as CARB considers the six statutory factors indicated in AB 398.

Ultimately, Government Code section 11342.2 indicates the standard for determining the validity of administrative regulations. Section 11342.2 states that “[w]henever by the express or implied terms of any statute a state agency has authority to adopt regulations to implement, interpret, make specific or otherwise carry out the provisions of the statute, no regulation adopted is valid or effective unless [1] consistent and not in conflict with the statute and [2] reasonably necessary to effectuate the purpose of the statute.” As the *Cal Chamber* Court stated, “[u]nder the first prong of this standard, the judiciary independently reviews the administrative regulation for consistency with controlling law.... In short, the question is whether the regulation is within the scope of the authority conferred; if it is not, it is void. This is a question particularly suited for the judiciary as the final arbiter of the law, and does not invade the technical expertise of the agency.” (*Cal Chamber*, 10 Cal. App. 5th 604, 619 (internal citation omitted).) The Court continued: “[b]y contrast, the second prong of this standard, reasonable necessity, generally does implicate the agency’s expertise; therefore, it receives a much more deferential standard of review. The question is whether the agency’s action was arbitrary, capricious, or without reasonable or rational basis.” (*Id.*; see also *Am. Coatings Assn. v. S. Coast Air Quality Mgmt. Dist.*, 54 Cal. 4th 446, 460 (2012) (“In assessing the validity of a quasi-legislative regulation in an action for mandamus under Code of Civil Procedure section 1085, ‘[o]ur inquiry necessarily is confined to the question whether the classification is “arbitrary, capricious, or [without] reasonable or rational basis.”’) (citations omitted).) As another court stated, “[a]n administrative regulation is presumptively valid, and if there is a reasonable basis for it, a reviewing court will not substitute its judgment for that of the administrative body; the role of the reviewing court is limited to the legality rather than the wisdom of the challenged regulation.” *Tomlinson v. Qualcomm, Inc.*, 97 Cal. App. 4th 934, 940 (2002) (internal citation omitted). Finally, CARB notes that “[o]n review, the burden of proof is on the party challenging the regulation, because the administrative agency’s action comes before the court with a presumption of correctness and regularity.” *Id.* (citation omitted).

The issue presented by commenters is not whether the price ceiling regulation is within the scope of the authority conferred. AB 398 explicitly delegated to CARB the authority to establish the price ceiling. Rather, the commenters assert that the price ceiling is unreasonable in light of AB 398. Therefore, the commenters’

argument, if reviewed by a court, pertains only to the second prong of Government Code section 11342.2. As such, CARB must only demonstrate that there is a reasonable basis for the price ceiling, in light of AB 398. CARB has fulfilled that requirement.

If reviewed by a court, the commenter would have the burden to prove that it is unreasonable for CARB to *not* engraft the commenters' preferred extra-textual requirements onto AB 398 (i.e., the social cost of carbon is an "upper bound"; the auction reserve price is a "lower bound") in determining the price ceiling. As explained in more detail below, the commenters could not fulfill that burden. CARB's analysis in establishing the price ceiling remains valid and reasonable.

CARB Fully Considered the Full Social Cost of Carbon in Establishing the Price Ceiling

Several of the commenters discuss each specific AB 398 factor. Regarding the social cost of carbon factor, several commenters claim that the price ceiling should be no higher than the social cost of carbon. One commenter (see section I.B.2 of WSPA3 letter) states that imposing economic costs in excess of the social cost of carbon would be irrational and, therefore, CARB should set the price ceiling at or below "a reasonable estimate of the social cost of carbon." However, AB 398 itself does not indicate that the social cost of carbon is necessarily the upper bound of the price ceiling. Indeed, another AB 398 price ceiling factor is the 2020 tier prices of the allowance price containment reserve (APCR). The 2020 APCR third tier price is \$74.64 in real 2018 dollars, which is higher than the Interagency Working Group (IWG) 2030 social cost of carbon value at a 3% discount rate in 2018 dollars (i.e., \$60.39). The commenters fail to explain how the Legislature could have intended that the social cost of carbon (SC-CO₂) be the upper bound of the price ceiling (and that the social cost of carbon necessarily must be the IWG value at a 3% discount rate) when AB 398 requires CARB to consider 2020 APCR tier prices that are higher than this social cost of carbon value. As explained below, the AB 398 consideration of the cost per metric ton of GHG emissions reductions also generally supports a higher ceiling price.

One commenter also states that CARB does not endorse or justify the selection of any specific estimate of the SC-CO₂, but that the ISOR "focuses" on the IWG 2030 SC-CO₂ value at a 3% discount rate (\$60.39 in 2018 dollars). The commenter asserts that CARB's analysis is flawed because the 2030 ceiling price is higher than the \$60.39 value that "CARB identifies as its benchmark." (CARB notes here that the 2030 price ceiling is \$94.22 in 2018 dollars, not "more than \$99" as the commenter asserts.)

As an initial matter, it is worth reemphasizing the validity of the IWG SC-CO₂ values. As CARB indicates in the ISOR and the 2017 Scoping Plan, the IWG is

comprised of scientific and economic experts from multiple federal governmental agencies and the IWG SC-CO₂ values reflect three integrated assessment models (IAMs) developed over a long period of time by incorporating decades of global peer-reviewed research. (See ISOR, at 36; 2017 Scoping Plan, at 39.) The IWG SC-CO₂ is the gold standard for estimating the social cost of carbon emissions, even as work continues to more comprehensively monetize all impacts of climate change.

Specifically regarding the commenter's assertion that the \$60.39 value is CARB's "benchmark", the ISOR never states that the \$60.39 social cost of carbon value is CARB's "benchmark". Rather, the ISOR includes a table that "presents the range of IWG SC-CO₂ values used in regulatory assessments, including the 2017 Scoping Plan, and *staff's consideration of where to set the price ceiling.*" (ISOR at 37 (emphasis added).) The ISOR explicitly indicates that "Staff utilized the *IWG standardized range of discount rates, from 2.5 to 5 percent, in order to develop the price ceiling* in the proposed amendments." (*Id.* (emphasis added).)

CARB considered the relevant evidence and determined that the price ceiling should not be *below* the 2030 value of \$60.29 because that would "fail to recognize both SC-CO₂ and would also omit consideration of additional significant physical, ecological, and economic impacts of GHG emissions." (*Id.* at 39.) Namely, the ISOR states that "[t]he SC-CO₂ is highly sensitive to the discount rate. Higher discount rates decrease the value today of future environmental damages. The value today of environmental damages in 2030 is higher under the 2.5 percent discount rate compared to the 3 or 5 percent discount rate, reflecting the trade-off of consumption today and future damages." (*Id.* at 37.) CARB considered the full range of IWG social cost of carbon values—including the 2030 IWG SC-CO₂ value of \$88.03 (2018 dollars) at a 2.5% discount rate. The SC-CO₂ value at a 2.5% discount rate is a reasonable estimate in light of the atypically long timeframe and important intergenerational impacts of climate change, as the IWG and National Academy of Sciences recognizes. (See The National Academies, *Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide*, at 19 (2017), available at: <http://www.nap.edu/24651>; IWG, Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis under Executive Order 12866, at 3 (Feb. 2010), available at: <https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/for-agencies/Social-Cost-of-Carbon-for-RIA.pdf>.) CARB fully considered this value in establishing the price ceiling and this value is well above the 3% discounted SC-CO₂. Therefore, the SC-CO₂ value at a 2.5% discount rate is reasonable; CARB accounted for it in setting the price ceiling; and, it is fairly close to the 2030 price ceiling value that the commenter criticizes.

Additionally, the ISOR notes that “[t]he IPCC has stated that the IWG SC-CO₂ estimates are likely underestimated due to the omission of significant impacts that cannot be accurately monetized, including important physical, ecological, and economic impacts. These omitted damages include the risk of increased flooding, the impacts on labor productivity from extreme heat, increased ozone pollution and wildfire smoke, and the impact of potential migration. Improving estimation methods and incorporating recent research will increase future estimates of the SC-CO₂.” (ISOR at 38; see *id.* notes 26-27.) The IWG itself recognizes that the underlying IAMs omit certain impacts and, therefore, the IWG SC-CO₂ values are likely conservative. (See IWG, Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis under Executive Order 12866, at 20-21 (2016), available at:

https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/scc_tsd_final_clean_8_26_16.pdf (stating “[c]urrently, IAMs do not include all of the important physical, ecological, and economic impacts of climate change recognized in the climate change literature due to a lack of precise information on the nature of damages and because the science incorporated into these models understandably lags behind the most recent research. These individual limitations do not all work in the same direction in terms of their influence on the SC-CO₂ estimates; however, it is the IWG’s judgment that, taken together, these limitations suggest that the SC-CO₂ estimates are likely conservative.”).)

The ISOR provides examples of how these underlying considerations may affect the SC-CO₂ values: “updating one of the main models used as the basis of the SC-CO₂ calculation results in SC-CO₂ values that are 92-137 percent higher (depending on the discount rate) than the values used in the 2017 Scoping Plan. A different analysis suggests that updating the agricultural impacts model alone could more than double the total SC-CO₂. As discussed in the March 2018 Workshop to Discuss Possible Revisions to the Cap-and-Trade Regulation, ‘an academic study from 2016 found that the existing SC-CO₂ is too low and could be closer to \$220.’” (ISOR, at 38; *id.* notes 28-30.) These credible reports and analyses informed CARB’s belief that “a price ceiling below the 2030 value of \$60.29 would fail to recognize both SC-CO₂ and would also omit consideration of additional significant physical, ecological, and economic impacts of GHG emissions.” (*Id.* at 38-39.) That is why the price ceiling was set *above* the \$60.29 value. Therefore, the \$60.29 value did not serve as CARB’s SC-CO₂ “benchmark,” as one commenter asserts.

Next, one commenter includes two exhibits that purportedly support commenter’s position that the SC-CO₂ cannot be much higher than \$60.39. The first is an analysis (the Analysis Group Report) that the commenter states shows that the central tendency of 2030 social cost of carbon estimates is roughly equivalent to \$61 in 2018 dollars. However, the Analysis Group Report also states that “[t]he IWG’s most recent estimates indicate that the social cost of carbon from

emissions occurring in 2030 would range from \$25 to \$115 per metric ton (in nominal dollars), depending upon the choice of discount rate used to convert the future damages created by those emissions into present value terms.” (WSPA3 Comments, Ex. 1, at 6.) Indeed, as Staff indicates above, the 2030 IWG SC-CO₂ value at a 2.5% discount rate is \$88.03 (2018 dollars). The Analysis Group Report does not dispute the reasonableness of estimating the SC-CO₂ at a 2.5% discount rate, and CARB accounted for the full range of IWG values when it established the price ceiling.

In fact, in a footnote, the Analysis Group Report correctly notes that “[t]he IWG also presents a set of higher estimates reflecting more extreme assumptions regarding the underlying modeling inputs. This higher set of estimates places the 2030 social cost of carbon at \$240 in 2030 (in \$2030).” (WSPA3 Comments, Ex. 1, at 6, note 12 (emphasis added).) As the IWG states regarding this higher estimate (i.e., the “high impact” value), “[t]he fourth value is included to provide information on the marginal damages associated with lower-probability, higher-impact outcomes that would be particularly harmful to society.” (IWG, Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis under Executive Order 12866, at 15 (2016).) The IWG continues: “...there is extensive evidence in the scientific and economic literature of the potential for lower-probability, higher-impact outcomes from climate change, which would be particularly harmful to society and thus relevant to the public and policymakers. This points to the relevance of values above the mean in right skewed distributions. Accordingly, this fourth value is selected from further out in the tails of the frequency distribution of SC-CO₂ estimates, and, in particular, is set to the 95th percentile of the frequency distribution of SC-CO₂ estimates based on a 3 percent discount rate.” (*Id.* at 15-16.) CARB’s price ceiling is well below the IWG’s “high impact” SC-CO₂ value. Nevertheless, this IWG value demonstrates that CARB was being reasonable in the range of SC-CO₂ values that it considered for purposes of establishing the price ceiling.

CARB also notes that the Analysis Group Report (like the WSPA3 comment letter itself) inaccurately states that CARB relies on the IWG’s SC-CO₂ value at a 3% discount rate. (See WSPA3 Comments, Ex. 1, at 7, note 16 (referring to CARB’s assumptions for SC-CO₂ in the 2017 Scoping Plan).) However, like the ISOR, the 2017 Scoping Plan does not rely on (or “benchmark”) according to the 3% discount rate alone. As the 2017 Scoping Plan states, “[t]his Scoping Plan utilizes the IWG standardized range of discount rates, from 2.5 to 5 percent to represent varying valuation of future damages.” (2017 Scoping Plan, at 40.)

Finally, the Analysis Group Report states that “CARB should not rely on estimates of the social cost of carbon from individual studies, particularly if those studies produce estimates substantially departing from the central tendency of other research” and cites specifically to the study that discusses a SC-CO₂ value

of \$220 in a footnote. (See WSPA3 Comments, Ex. 1, at 7, note 17.) However, the study that CARB cited to in a preliminary discussion paper and the ISOR (see ISOR, note 30) indicating that SC-CO₂ could be \$220 merely recites a figure from a variant of one of the IAMs underlying the IWG SC-CO₂ values. As the study states, “[o]ne additional ton of CO₂ emitted in 2015 reduces net social welfare by US\$33 in DICE-2R but by US\$220 in gro-DICE. This value is higher both because climate damages are larger in gro-DICE and because slower economic growth leads to a lower discount rate.” (See Frances C. Moore & Delavane B. Diaz, Temperature impacts on economic growth warrant stringent mitigation policy, *Nature Climate Change*, at 2 (2015), <https://www.nature.com/articles/nclimate2481#t1>.) DICE is a well-developed model for assessing the economic damages of climate change. Nevertheless, CARB’s price ceiling is well below \$220.

The commenter states that its other exhibit (Rose Presentation) stands for the proposition that applying certain minimum standards to the IWG values would result in an average social cost of carbon of \$35 in 2007 dollars (or \$42.61 in 2018 dollars). (See WSPA3 Comments, Ex. 2.) Based on this exhibit, the commenter urges “CARB to consider Dr. Rose’s recommended values in identifying the 2030 social cost of carbon.”

However, while this exhibit is merely a powerpoint presentation of Steven Rose’s analysis, exhibit 3 (Rose Analysis) is Steven Rose’s actual published analysis on this issue. The Rose Analysis explicitly indicates that “[t]he intent of this analysis is *not* to assess whether the USG estimates are accurate, nor is it to re-compute the SCC.” (WSPA3 Comments, Ex. 3, at 4 (emphasis added).) In other words, Dr. Rose’s assessment is not intended to displace the IWG’s SC-CO₂ values. Therefore, there is no basis to support commenter’s request that CARB consider Dr. Rose’s values in determining the 2030 social cost of carbon.

In sum, CARB’s consideration of the social cost of carbon in establishing the price ceiling was reasonable.

CARB Fully Considered the Auction Reserve Price in Establishing the Price Ceiling

Regarding the auction reserve price consideration in AB 398, several commenters asserts (see for example, Section I.B.3 of WSPA3 comment) that there is no clear rationale for retaining the 5% escalator currently in the auction reserve price and carrying it forward to the price ceiling. The ISOR indicates how CARB considered the auction reserve price in establishing the price ceiling, as AB 398 requires. The auction reserve price has always increased by 5% plus the rate of inflation annually and it is reasonable to assume that the Legislature was aware of this fact when it enacted AB 398. In order to fully consider the auction reserve price factor in establishing the price ceiling, staff considered how the

auction reserve price escalator would interact with the price ceiling and the Reserve tiers. As the ISOR states, “[t]his extension of the existing structure where the Auction Reserve Price and price ceiling values do not converge is consistent with how the Program has been designed since the very beginning. It maintains the price signal to ensure the lowest reductions are targeted, while allowing for price discovery across a consistent range for all periods of the Program across all covered sectors. Narrowing the range for potential allowance prices over time results in the Program operating more like a carbon tax and it limits abatement potential. The two new post-2020 Reserve tier prices were also set based on maintaining fixed distances between the Auction Reserve Price and price ceiling (half of the distance and three quarters of the distance for the first and second tier respectively). Maintaining the consistent escalation between the Auction Reserve Price and price ceiling allows for the two new post-2020 Reserve tiers to operate at a fixed distance between the two points.” (ISOR, at 39.) Therefore, CARB’s consideration of the auction reserve price factor (including the internal 5% escalator in the auction reserve price) in establishing the price ceiling was reasonable.

CARB Fully Considered the Need to Avoid Adverse Economic Impacts and Leakage in Establishing the Price Ceiling

Regarding the AB 398 factors of “[t]he need to avoid adverse impacts on resident households, businesses, and the state’s economy and “[t]he potential for environmental and economic leakage”, one commenter asserts (Section I.B.4 of WSPA3 comments) that CARB insufficiently considered these factors in the ISOR. However, CARB extensively discussed how these factors affect setting the price ceiling in the ISOR, stating specifically that “[a]voiding adverse impacts on California’s economy and avoiding leakage continue to be critical design objectives for the Cap-and-Trade Program...” (*Id.* at 32.) CARB also stated that “...in advance of widespread carbon pricing and deployment of GHG reducing technologies, California businesses may be more sensitive to potential emissions leakage. This concern supports the selection of a price ceiling path below the single tier Reserve value in the early 2020s. The proposed \$61 price ceiling in 2021 is approximately \$14 less than the current Regulation’s 2021 single tier Reserve price [], while increasing at a faster rate than the existing single tier price.” (*Id.* at 33.)

CARB factored these considerations into the economic analysis in the SRIA as well, contrary to the commenter’s assertion. (See SRIA, at 52.) Namely, CARB fully explained the potential incremental costs to businesses if allowance prices reached the price ceiling (*id.* at 54-55) and costs to consumers, including with respect to gasoline prices (*id.* at 55). Ultimately, as the ISOR states, “the entire Cap-and-Trade Program is designed to minimize emissions leakage and avoid adverse impacts to households while sending a sufficient carbon price signal to

prompt the emissions reductions necessary to meet AB 32 and SB 32 emissions goals.” (ISOR, at 34.) Therefore, CARB fully considered these factors in establishing the price ceiling.

In addition, see also Response to 45-Day Comment B-3.14 for a discussion of how the price ceiling is not the sole factor to consider when assessing how the Cap-and-Trade Program minimizes leakage. See also Response to 45-Day Comments B-3.12 for a further discussion of the Cap-and-Trade Program and California consumers.

CARB Fully Considered the 2020 APCR Reserve Tier Prices in Establishing the Price Ceiling

Regarding the 2020 Reserve tier prices AB 398 factor, one commenter claims (Section I.B.5 of WSPA3 comments) that CARB’s analysis is unreasonable for several reasons. First, the commenter claims that CARB insufficiently considers all three tiers of the Reserve. However, CARB considered all Reserve tier prices in establishing the price ceiling. CARB focused on the 2020 Tier 3 price because that formed the window of price expectations between the auction reserve price and the highest tier price in the pre-2020 period of the Program. In turn, CARB reasonably concluded that it should extend the same window of potential allowance value expectations in establishing the price ceiling. As the ISOR states, “[c]overed entities’ future expectations of the full range of potential allowance values, as well as their expected potential rate of return for their GHG reduction investments, would be undercut by anticipation of the potential for future regulatory revisions that might significantly decrease the price ceiling.” (ISOR, at 35.)

Second, the commenter asserts that there is no basis for the notion that businesses make GHG reduction investment decisions based on the delta between the floor price and the Tier 3 price. However, that is not CARB’s assertion. Rather, CARB analyzed this window of price expectations because it represents the *range* of potential allowance prices and that range is relevant for business investment decisions.

Third, the commenter asserts there is no basis for the notion that business make investment decisions based on the Tier 3 price because “the widespread consensus among members of industry [] that, if allowance prices reach levels anywhere close to the tier 3 of the APCR, the resulting impacts on energy prices, including the price of a gallon of gasoline, will result in widespread voter revolt, which will inevitably prompt the Governor to suspend and the Legislature to terminate the Cap-and-Trade Program.” However, this is complete conjecture, and the commenter offers no evidence to support any aspect of this statement. The commenter also fails to analyze what the actual impacts on energy prices would be at Tier 3 allowance prices. In fact, as the SRIA states, with complete

cost pass-through, for every \$10.00 of allowance price, the price of gasoline could increase by about \$0.09 per gallon. (SRIA, at 55.) The commenter also fails to indicate why terminating the Cap-and-Trade Program would be inevitable under these conditions, while, at the same time, the Legislature did not establish a specific value for a price ceiling but rather deferred to CARB to establish a price ceiling based on six broad considerations. If reaching the Tier 3 price would result in a political backlash, as the commenter asserts, then it would be reasonable to anticipate that the Legislature would have foreclosed allowance prices from reaching this level when it enacted AB 398. Rather, the Legislature deferred to CARB on setting the ceiling price.

Finally, the commenter asserts that maintaining continuity of expectations would be disrupted because the price ceiling is greater than the single tier APCR price after 2027. However, the difference in prices is fairly minor, and maintaining continuity of expectations is only one imbedded factor within the six considerations that CARB must weigh in establishing the price ceiling. Therefore, CARB has fully considered this factor in establishing the price ceiling.

CARB Fully Considered the GHG Abatement Cost to Achieve the 2020 and 2030 Reduction Goals in Establishing the Price Ceiling

Regarding the final AB 398 consideration (i.e., “[t]he cost per metric ton of greenhouse gas emissions reductions to achieve the [2020 and 2030] statewide emissions [reductions] targets”), one commenter asserts (Section I.B.6 of the WSPA3 comments) that, under CARB’s reading of AB 398, the price ceiling must be set high enough never to be triggered, which is an impermissible reading of the statute. However, CARB does not read AB 398 in that manner, and has not set the price ceiling at a level that CARB predicts will never be reached. Rather, the ISOR states “[i]n responding to AB 398, staff must balance the need for cost containment with the need for market prices to support GHG reduction activities to meet the 2020 and 2030 targets. In the unlikely event cost containment is triggered, sales from the new post-2020 Reserve or price ceiling preclude emissions reductions that are only cost effective at allowance values above the new post-2020 Reserve tier and price ceiling values. Thus, the price levels at which cost containment are set strikes a balance between being high enough to allow for a sufficient volume of reductions to occur to meet the 2020 and 2030 targets, and being low enough to meet the AB 398 objectives of minimizing emissions leakage and minimizing adverse impacts to households, businesses, and the California economy.” (ISOR at 39-40.) This is a completely reasonable and sufficient consideration of this factor in establishing the price ceiling.

Additionally, contrary to the commenter’s assertion, CARB does analyze cost per ton emissions reductions and how this relates to achieving the 2020 and 2030 targets. The ISOR indicates the proportion of emissions reductions that will be achieved by complementary measures and the Cap-and-Trade Program, and

reviewed evidence of abatement costs in making this assessment. (ISOR at 40; see also SRIA, Table 22.)

CARB's Analysis of Price Ceiling Alternatives is Sufficient and Lawful

One commenter asserts (Section I.C of WSPA3 comments) that CARB must identify reasonable alternatives and analyze the impacts of these alternatives using the six AB 398 factors. For this proposition, the commenter cites to *American Coatings Ass'n, Inc. v. South Coast Air Quality Dist.*, 54 Cal. 4th 446 (2012) (*American Coatings*). However, the commenter is conflating a narrow requirement in the APA with the general analytical framework applicable to a legal challenge to an administrative regulation under Code of Civil Procedure section 1085. With respect to CARB's duty to assess alternatives, the APA requires that the Staff Report include a "description of reasonable alternatives to the regulation and the agency's reasons for rejecting those alternatives." Gov't Code § 11346.2(b)(4). CARB fulfilled this requirement by analyzing price ceiling alternatives in the ISOR and SRIA. (See ISOR, at 203-204; SRIA, at 73-84.) Contrary to the commenter's suggestion, CARB's analysis is a reasoned estimate of cost impacts using a valid analytical methodology.

American Coatings indicates the standard of review under Code of Civil Procedure section 1085 and states that "[w]hen inquiring into whether a regulation is arbitrary, capricious, or lacking in evidentiary support, the [c]ourt must ensure that an agency has adequately considered all relevant factors, and has demonstrated a rational connection between those factors, the choice made, and the purposes of the enabling statute." *American Coatings*, 54 Cal. 4th at 460. The commenter mistakenly cites to this case for the proposition that CARB must identify and assess comparative impacts of alternatives in light of the AB 398 factors. That is not how a court would assess the validity of CARB's cap-and-trade amendments under Code of Civil Procedure section 1085. Rather, the issue under section 1085 would be whether CARB has reasonably determined the price ceiling. The price ceiling is wholly reasonable in light of AB 398.

The commenter then lists specific grievances it has with the alternatives analyzed in the SRIA. First, the commenter asserts that the SRIA does not analyze alternatives in relation to available mitigation options and costs. However, Government Code section 11346.2(b)(4) does not require this degree of specificity for the alternatives analysis, nor does the Department of Finance's rules for major regulations (see 1 C.C.R. § 2003(e)). Regardless, CARB does qualitatively address this issue in its assessment of Alternative 2. CARB indicates that the price ceiling in Alternative 2 may be too low to incent the abatement technologies listed in Table 22 to achieve the GHG reductions necessary to achieve the State's 2030 target. (SRIA, at 84.) Ultimately, CARB is not required to do what the commenter suggests.

Second, the commenter argues that the SRIA does not analyze the relationship between the economic impacts of the alternatives and the AB 398 factors. As indicated above, CARB is not required by AB 398, the APA or any other law to assess regulatory alternatives in light of AB 398 factors. All the APA requires is that CARB analyze “reasonable alternatives”.

Third, the commenter argues that CARB should select Alternative 2 because it is cheaper than the adopted price ceiling and asserts that CARB has not analyzed why Alternative 2 would fail to provide a price signal adequate to achieve the 2030 reduction target. However, Alternative 2’s price ceiling is well below the adopted price ceiling. The adopted price ceiling represents the upper bound of compliance costs and acts as a safety valve in the Program against high prices. While it is difficult to predict whether the price ceiling will be accessed at any given point in the 2021-2030 period, generally the price ceiling would be more likely to be used if the ceiling price were lower. As the SRIA states, “[h]owever, as the primary goal of the Program is to reduce GHGs to help the State achieve its 2030 GHG target, the price ceiling must allow for discovery and action on the lowest cost opportunities to reduce GHG emissions across the economy. This means the price ceiling must be set to encourage actions to reduce emissions and not merely paying a cost-per-metric ton for compliance with no incentives or time to actually reduce emissions from covered sectors.” (SRIA, at 49-50.) Therefore, CARB’s qualitative assessment of the impact of a lower price ceiling is sufficient for APA and AB 398 purposes.

Finally, the commenter disputes the need for an escalator in the price ceiling and any alternative. However, the use of an escalator is reasonable to keep the window of price expectations relatively similar to what it has been in the Program thus far, as explained further below.

CARB’s Inclusion of a 5% Annual Escalator in the Price Ceiling is Reasonable

Several commenters assert (including section I.D of the WSPA3 comments) that the use of a 5% annual escalator for the price ceiling is unreasonable for three reasons. First, they argue that the escalator is higher than the current Reserve tier escalator. However, CARB is not bound by the current Reserve tier escalator in determining an appropriate price ceiling under AB 398.

Second, they dispute the validity of maintaining a certain window between the price floor and ceiling. However, CARB reasonably concluded that it should extend a similar window of potential allowance value expectations between the price floor and Reserve Tier 3 in establishing the price ceiling. As the ISOR states, “[c]overed entities’ future expectations of the full range of potential allowance values, as well as their expected potential rate of return for their GHG reduction investments, would be undercut by anticipation of the potential for future regulatory revisions that might significantly decrease the price ceiling.”

(ISOR at 35.) This is a reasoned basis to emulate a substantially similar spread between the price floor and price ceiling for the post-2020 period.

Finally, they argue that CARB should not mirror the price floor escalator because that is based on firms' internal discount rate for capital investment, which is not relevant to the price ceiling. However, this was not the original basis for the auction reserve price. As the 2010 ISOR states, "Staff proposes an inflator mechanism based on the expectation that marginal abatement costs and offset project costs will increase over time as lower cost abatement measures are undertaken first, and due to inflation. Auction reserve prices would need to increase to reflect the increased marginal abatement cost and the inflation rate; otherwise, the reserve price would no longer support direct reductions and offset projects as intended." (2010 ISOR at IX-71.) This same rationale applies to the price ceiling, as marginal abatement costs can be expected to increase in the future as well, so maintaining a consistent price window is reasonable. See Response to 45-Day Comment B-3.11 for a further discussion of how the two reserve tiers are cost containment features that provide meaningful breaks in the Program.

As noted in the ISOR for this rulemaking, maintaining a 5 percent escalation factor extends the existing structure where the Auction Reserve Price and price ceiling values do not converge. This extension is consistent with how the Program has been designed since the very beginning. It maintains the price signal to ensure the lowest reductions are targeted, while allowing for price discovery across a consistent range for all periods of the Program across all covered sectors. Narrowing the range for potential allowance prices over time results in the Program operating more like a carbon tax and it limits abatement potential.

The two new post-2020 Reserve tier prices were also set based on maintaining fixed distances between the Auction Reserve Price and price ceiling (half of the distance and three quarters of the distance for the first and second tier respectively). Maintaining the consistent escalation between the Auction Reserve Price and price ceiling allows for the two new post-2020 Reserve tiers to operate at a fixed distance between the two points. Otherwise, in later years, the two new post-2020 Reserve tiers will converge into the price ceiling, thereby negating the effectiveness of the Reserve price tiers to slow the acceleration of allowance prices.

The Price Ceiling Poses No Appreciable Barrier to Linkage

Finally, one commenter argues (section I.E of WSPA3 comments) that AB 32's directive to facilitate linkage applies to establishing the price ceiling and the ceiling price poses an "insurmountable barrier" to linkage with other programs. However, this argument is illogical. CARB's only current linked partner—the

Province of Quebec—has no price ceiling in its cap-and-trade regulations at all. Other operational cap-and-trade programs throughout the world do not have firm price ceilings either. Therefore, there is no reason to believe that the adopted price ceiling would pose any real barrier to linkage because it is too high. See also Response to 45-Day Comment B-3.10.

Placement of Cost-Containment Points

Several commenters also question the spacing of the cost-containment points in the adopted amendments, which CARB placed at 50 percent and 75 percent between the ARP and the price ceiling. These commenters make the same arguments as in 45-Day Comments B-3.11 that the spacing should be one-third and two-thirds of the distance between the ARP and price ceiling. See Response to 45-Day Comment B-3.11 for CARB's response.

June 14, 2018 Legislative Letter

Finally, with respect to one commenter's (CCEEB) incorporation of a joint legislative letter submitted to CARB on June 14, 2018, CARB notes that we did receive the letter and appreciate the engagement by the Legislature. CARB staff believes the adopted amendments, as well as the overall design of the Cap-and-Trade Regulation, are responsive to the points raised in that letter. As noted in the SRIA to the ISOR, the new post-2020 Reserve tiers and price ceiling mandated by AB 398 work in coordination with other features of the Program that provide compliance flexibility to meet the 2030 target reliably and cost effectively. These other features include banking of allowances (including unused allowances that can be banked forward into the post-2020 Program based on early reductions), use of a limited number of offsets, multi-year compliance periods, and the broad scope that identifies a diverse set of sources with a range of emission reduction opportunities. Additionally, the Program includes industrial allocation and the residential climate credit, which work to reduce the cost burden of allowance prices to covered entities and residents of the state. Together, these features respect and support the environmental goals of the Cap-and-Trade Program and contain costs for California consumers and businesses.

B-4. Reserve Tier Volumes and Disposition of Unsold and Consigned Allowances

Support for Moving Unsold Allowances to Reserve Tiers

B-4.1. Comment:

24 Month Rule

The 24 month rule is important for temporarily tightening the cap and CARB should continue to consider options for similar mechanisms that would provide a permanent increase in ambition by retiring allowances.

EDF believes that the “24 Month Rule” is an important addition to the cap-and-trade program. As a version of cap tightening, this rule achieves a small level of increased ambition by placing allowances that have remained unsold for the previous 24 months evenly into the two post- 2020 price tiers. Rules such as these that are automatic and therefore predictable are an appropriate way to drive even greater emission reductions. (EDF)

Comment:

PG&E supports ARB’s proposal to split the 54 million allowances from vintage year 2021-30 budgets that ARB removed from the market in 2017 to the two new post-2020 Reserve tiers. This will expand the capability of the two new post-2020 Reserve tiers to function as intended, as discussed above. Similarly, we support ARB’s proposal to not place any of the 54 million allowances in the price ceiling, as doing so would not provide any cost-containment benefits in the presence of the hard price ceiling. (PG&E)

Comment:

Our comments today, as with those that we've made in the past, center on cost containment and focus on... and maintaining available allowances in the market...

Additionally, CMTA appreciates ARB's proposal on unused allowances. And we would just note that keeping these allowances in the market limits artificial price spikes and supports compliance with carbon reduction goals. (CMTA3)

Response: Thank you for the support.

Opposition to Moving Unsold and Additional Allowances from the 2021-2030 Caps to Reserve Tiers

B-4.2. Comment:

Oppose allowance diversion to Reserve in 2021-2030...

However, Phillips 66 opposes the allowance set-aside from 2021-2030 cap supply in the existing rule since the future reserve will be adequately stocked with the supply directed by AB 398. Furthermore, it is not necessary to set aside additional allowances for what we consider to be a now-outdated policy adjustment for allowing over 4% offsets in 2026-2030. This serves to penalize the increase in allowable offsets, an important and necessary component of the climate program. Eliminating these set-asides will retain 75 million allowances in the regular auction and further provide liquidity and stability to the program.

If CARB chooses to pursue these additional set-asides, these allowances should be made available earlier rather than later in the future reserve structure.

Recommendation: Eliminate the diversion of 75 million allowances supply from 2021-2030 supply to the future reserve. (PHILLIPS66)

Comment:

Proposed removal of allowances from the 2026 to 2030 budget

ARB's proposed regulation contemplates removing allowances from the 2026 to 2030 period and placing them into the second Tier as a response to the quantitative offset usage limit increasing from 4 percent to 6 percent in 2026. Doing this simply adds cost and uncertainty to compliance entities. ARB has always viewed offsets as a cost-effective means of delivering real emission reductions. Provided AB 398's requirement that 50 percent of the offsets used for compliance must meet the Direct Environmental Benefits (DEBS) definition, shifting allowances from the annual auction budget into the second price containment Tier does little but increase the cost of compliance. Because of uncertainty in the quantity of projects that will meet the DEBS definition, lack of information on the cost to implement a DEBS project, CCEEB feels constraining the annual allowance budget based on ARB rational starting in 2026 is hurried. Therefore, CCEEB recommends ARB keep the 22.7 million allowances in the 2026 to 2030 allowance budget. (CCEEB)

Comment:

Proposed Removal of Allowances Is Unnecessary and Adds Programmatic Costs.

CARB's proposed regulation contemplates removing allowances from the 2026 to 2030 period and placing them into the second speed bump as a response to the quantitative offset usage limit increasing from 4 percent to 6 percent in 2026. Doing this simply adds cost and uncertainty to the program. Provided AB398's requirement that 50 percent of the offsets used for compliance must meet the Direct Environmental Benefits (DEBs) definition, shifting allowances from the annual auction budget into the second speed bump does little for cost containment. Because of uncertainty in the quantity of projects that will meet the DEBs definition and lack of information on the cost to implement a DEBs project, constraining the annual allowance budget starting in 2026 is premature. WSPA recommends CARB keep the 22.7 million allowances in the 2026 to 2030 allowance budget. (WSPA)

Comment:

Removing Unused Allowances is Unnecessary to Reach Carbon Reduction Goal

The current availability of unused allowances is an indication that the Cap-and-Trade program is working as currently designed. Maintaining the current allowance budget provides additional protection against the prospect of greater artificial scarcity beyond what is already built into the program. As a result, keeping those allowances in the market limits artificial price spikes and supports compliance with carbon reduction goals.

Further any attempt to shave allowances from the 2026-2030 allowance budgets to reflect the change in the offset limits would represent a mostly punitive measure that only serves to increase the allowance price for obligated parties and does not support a sustainable program. It is particularly onerous because the cap (annual allowance

budget) is already extremely low in this period such that there may be an allowance supply shortage under the current cap budgets. (CMTA2)

Comment:

PG&E does not support ARB's proposal to remove an additional 23 million allowances because of changes to the quantitative usage limit and disagree with ARB's contention that the proposal is consistent with the original rationale for funding the Reserve. In this case, ARB adopted post- 2020 allowance budgets in 2017, while leaving the quantitative usage limit unchanged at 8%.

Therefore, we believe AB 398's changes to the quantitative usage limit from 8% to 4% and from 8% to 6% are both in the direction of tightening the program. We do not believe it is consistent with ARB's original rationale for funding the Reserve to respond to the Legislature's tightening of the program with further action to tighten the program via removing allowances from the market. We encourage ARB to leave the 23 million allowances in the regular market rather than putting them into the second post-2020 Reserve tier. (PG&E)

Response: The comments on the existing regulation are outside the scope of these amendments. CARB disagrees with the assertion contained in the comments that diversion of post-2020 allowances to the Reserve is unnecessary or "outdated." The placement in the Reserve continues the role of offsets in the Program as a cost containment measure that does not result in increased emissions.

As noted in the Initial Statement of Reasons,³²⁰ an increased number of allowances from within the 2021-2030 annual allowance budgets have been placed into the Reserve to reflect the AB 398 directive that raises the quantitative offset usage limit from four percent for data years 2021-2025 to six percent in 2026-2030. When CARB initially created the Reserve, CARB funded it through an increase in the quantitative offset usage limit from four to eight percent. This freed up allowances that could be placed in the Reserve equal to four percent of the annual allowance budgets through 2020. CARB employed the same rationale to reflect the increase in the quantitative offset usage limit in 2026, the latter of which is required by AB 398. To avoid a discontinuous reduction in allowance budgets in 2026, CARB took a uniform number of allowances from all budget years 2021 through 2030. See also Response to 45-Day Comments B-2.9.

See Response to 45-Day Comments B-2.1 for a further discussion of CARB's rationale for the adopted Regulation's allocation of allowances to different components of the Program (i.e., the number of allowances to be auctioned, placed in the tiers, and placed in the Price Ceiling). As stated in that response,

³²⁰ <https://www.arb.ca.gov/regact/2018/capandtrade18/ct18isor.pdf>

the adopted Regulation contains a number of provisions that will have the effect of strengthening the Program's ability to meet the SB 32 target. The adopted Regulation retains the 2016 amendments' withdrawal of allowances from within the post-2020 caps to align post-2020 allowance supply with updated estimates of pre-2021 emissions. As noted above, CARB placed 22.7 million additional allowances from within the cap to reflect the change from a four percent to six percent offset limit in 2026. AB 398 also clarified that the mechanism for removing unsold allowances following undersubscribed auctions will be made a permanent feature of the post-2020 Program.

One commenter expresses concern that the removal of these allowances from the post-2020 Program may affect the stability of the Program. See Response to 45-Day Comments B-3.15 for a description of how CARB assessed all AB 398 factors in setting the price ceiling, including "the need to avoid adverse impacts on resident households, businesses, and the state's economy, [and] the potential for environmental and economic leakage."³²¹

See Response to 45-Day Comments B-3.14 for a discussion specific to emissions leakage. As described there, the price ceiling is not the sole factor to consider when assessing how the program minimizes leakage. The new post-2020 Reserve and price ceiling work in coordination with other features of the Program that provide compliance flexibility to meet the 2030 target reliably and cost effectively. The new post-2020 Reserve introduces 156 million allowances for cost containment at prices below the current post-2020 Reserve and below the price ceiling. The Program also includes limited banking, use of a limited number of offsets, multi-year compliance periods, and a broad scope that identifies a diverse set of sources with a range of emission reduction opportunities.

Additionally, the Program includes industrial allocation and some allowance value goes back to households via residential Climate Credits, which work to reduce the cost burden of allowance prices to covered entities and residents of the state. See Response to 45-Day Comments C-1.5 for a further discussion of industrial allocation for the 2018 through 2020 timeframe, and post-2020 Program. See Response to 45-Day Comments H-1.2 for additional discussion of residential and other Climate Credits.

Moving Unsold Allowances to Price Ceiling Tier

B-4.3. Comment:

In further developing its Proposed Amendments, ARB should:...

³²¹ Health & Safety Code § 38562(c)(2)(A)(i)(I-V)

- Preferentially allocate unsold allowances to price tiers that fully account for the marginal damage caused by each ton of carbon dioxide;...

ARB Should Preferentially Allocate Unsold Allowances to the Price Ceiling, In Order to Increase the Likelihood That They Will Fully Internalize the Cost of Greenhouse Gas Damages

As we explained in our March 16, 2018, comments on ARB's Concept Paper, if the program's primary goal is to internalize the external cost of carbon dioxide emissions, it would be best served by allocating all allowances that go unsold for 24 months between 2021 and 2030 to the price ceiling.³²² Instead, ARB has proposed to divide such unsold allowances among the two price reserve tiers. Allowances in those tiers will be priced at \$39.01 and \$50.13,³²³ *below* the IWG's central \$50.65 estimate for the external cost of carbon dioxide emitted in 2020.³²⁴ In other words, none of the unsold allowances that go unsold between 2021 and 2030 will be allocated to prices that fully internalize the SC-CO₂.³²⁵

That said, the pricing of unsold allowances may take into consideration several factors other than the external cost of carbon dioxide emissions.³²⁶ These include the cost to consumers, the potential for price volatility, and other factors affected by the allocation of these reserves. If ARB finds that the potential for volatility or other adverse effects outweigh the benefit of certainty that the market will fully internalize carbon dioxide-related externalities, it could justifiably price at least some unsold allowances at levels below the price ceiling.³²⁷ In determining whether this is the case, however, ARB should use analytical tools that can account for uncertainty through stochastic modeling.

Ultimately, ARB should—to the furthest extent reasonable given costs to consumers, potential price volatility, and other relevant factors—allocate unsold allowances to price tiers that fully account for the marginal damage caused by each ton of carbon dioxide.³²⁸ (POLICYINTEGRITY)

Response: CARB disagrees with the first half of the comment that insists all Reserve allowances should be offered only at prices that are above the social cost of carbon (SCC). The Reserve is one of the Program's many features such that if the market tightens there is a gradual increase in allowance prices over a longer period of time, giving time for new reduction opportunities to be identified and implemented along the way and potentially avoiding prices at the price ceiling itself. Thus, the Reserve tiers are conceived as methods of introducing additional allowance supply to temporarily restrain market price increases. They

³²² See March Comments, *supra* note 15.

³²³ STATEMENT OF REASONS, *supra* note 17, at 30.

³²⁴ *Id.* at 37.

³²⁵ *Id.* at 34.

³²⁶ See generally Cal. Health & Safety Code § 38562.

³²⁷ *Id.* at 4.

³²⁸ See March Comments, *supra* note 15, at 5.

are designed to slow price increases to give covered entities time to find other ways to reduce emissions.

The comment proceeds to acknowledge CARB's reasoning for placing additional allowances in the Reserve, including AB 398 requirements. See Responses to 45-Day Comments B-3.11 and B-3.15 for a further discussion of the post-2020 Reserve tiers. See Response to 45-Day Comments B-3.15 for a discussion of how CARB has considered the SCC pursuant to AB 398 in setting the price ceiling values. See Response to 45-Day Comments B-3.7 for additional discussions of the SCC and the adopted Regulation's cost containment structure.

With regards to the commenter's request that ARB conduct modeling to support the adopted Program, see also Response to 45-Day Comment B-1.3 for a discussion of the modeling supporting the adopted Scoping Plan including Cap-and-Trade. Response to 45-Day Comment B-1.3 includes a short discussion of the uncertainty analysis, a Monte Carlo analysis, conducted as part of the 2017 Scoping Plan. The uncertainty analysis is discussed in greater detail in Appendix E of the 2017 Scoping Plan.³²⁹ See also Response to 45-Day Comment B-3.14 for a discussion of the SRIA modeling conducted in support of the amended Regulation.

Retiring Unsold Allowances

B-4.4. Comment:

Under the existing rule, there was also the possibility of these unsold allowances being fully retired from the program to account for Energy Imbalance Market Outstanding Emissions. While adjustments to EIM's compliance are understandable and discussed further below, we do regret the elimination of the possibility of full allowance retirement. In an effort to continuously drive greater climate ambition, we would encourage CARB to leave open the possibility, either in conjunction with or separate from the 24 Month Rule, of developing a mechanism to automatically tighten the cap by full retirement of allowances under conditions that could be considered in more detail during a future rulemaking. (EDF)

Comment:

b. CARB Should Retire Oversupplied Allowances, Rather Than Move Them to Reserve Tiers

CARB has, at several points, moved permits from the Auction Account, or other agency accounts, into the Price Containment Reserve. Staff indicated plans to move an additional amount of allowances out of the Auction Account to reflect the additional Compliance Offsets AB 398 authorized to be used after 2025. We recognize and support Staff's desire to reduce the supply of allowances in the Auction account, which

³²⁹ https://www.arb.ca.gov/cc/scopingplan/2030sp_app_econ_final.pdf

would help bring prices off the floor. Independent analysis, however, suggests that the Auction Account will remain oversupplied by 100 - 200 million allowances unless additional action is taken.³³⁰

If the market were operating from a position of approximately balanced supply and demand, moving allowances to the APCR would be a prudent course of action to preserve future flexibility by keeping those allowances nominally within the Cap and Trade program. As discussed in the previous section, however, the market is not operating under a balance of allowance supply and demand. There is consensus among independent experts and most stakeholders that allowance supply exceeds demand and will continue to do so for several years, at least. Under these conditions, moving permits to the APCR does not address the fundamental problem; APCR permits return to the market at certain price points and can be used to satisfy compliance obligations. If permits from a Price Tier or the APCR are used for compliance, real emissions from covered entities can be significantly in excess of levels needed to maintain a trajectory towards attainment of SB 32 and mid-century decarbonization goals.

We agree with Staff that it is better to have excess allowances in the APCR or Price Tiers than in the Auction account or entity holding accounts and recognize that actions to move permits out of the Auction Account in the past were a step in the right direction. Moving allowances to the APCR or Price Tiers is not sufficient, however, to address the critical long-term problem of oversupply potentially causing California to miss its emission targets.

Accordingly, we strongly recommend that excess allowances be retired from the program, rather than moved to the APCR or Price Tiers. We also recommend that Price Containment Reserve allowances that would be released at the level of the price ceiling be retired, instead. The presence of an explicit price ceiling mechanism obviates the need to have a separate reserve of allowances at the price ceiling and the statutory requirement to reduce emissions from permits sold at the price ceiling on a ton-for-ton basis means that ceiling price transactions which occur through the price ceiling mechanism have an additional safeguard for environmental integrity. (NEXTGEN)

Comment:

(4) CARB should retire additional allowances, rather than include them reserve tiers.

CEJA recommends that no additional allowances should be put into reserve tiers or the Allowance Containment Price Reserve. In the Discussion Draft and the Staff's March 2,

³³⁰ See <http://energyinnovation.org/wp-content/uploads/2018/02/WCI-oversupply-grows-February-update.pdf>, which estimates that oversupply in the combined WCI market will be 200 - 340 million tons at the end of 2020. California's share of that total is approximately 100-200 million allowances, after subtracting the staff proposal to remove 23 million allowance to account for offset credits.

2018 presentation, staff requests additional comments on whether it would be appropriate to distribute additional allowances.³³¹ With the already existing overallocation, adding new allowances would only exacerbate the challenges to achieving annual emission targets. Therefore we recommend that no additional allowances be put on the market. (CEJA)

Response: See Responses to 45-Day Comments B-1.2 and B-2.1 for a discussion of staff's position that the Program's ambition and allowance supply are appropriate at this time. See also Response to 45-Day Comment B-1.3 and Response to 45-Day Comment B-2.1, which detail the modeling conducted to support the adopted Regulation and discuss Appendix D to the ISOR. As noted in Appendix D, at this time, staff is not proposing to change existing banking rules, remove unused allowances, or change post-2020 annual caps as part of this rulemaking. See also Response to 45-Day Comments B-1.3 for a discussion of long term ambition beyond SB 32's 2030 goal.

In addition, and as noted in Response to 45-Day Comment B-1.3, in adopting the amendments, Board Resolution 18-51 directs staff to continue monitoring allowance supply, and to quantify and report to the Board, by no later than December 31, 2021, the volume of unused allowances from 2013 to 2020, including volumes held in private accounts, and the potential for unused allowances to hinder the ability of the Program to help achieve the SB 32 target. The Board further directed that CARB staff will hold a workshop in 2019 to discuss potential methodologies to evaluate this topic.

See Response to 45-Day Comments B-2.6 for a discussion of adjustments to the cap based on predefined metrics. As stated in Response to 45-Day Comments B-2.1, based on staff and third-party analyses, it is expected that allowance prices will continue to steadily increase in the next decade with corresponding reductions in GHG emissions. Any metrics that would result in removing allowances from the system would need to acknowledge that one of the effects of removing allowances is higher allowance prices, reached sooner, than would result from the adopted amendments to the Regulation.

See Response to 45-Day Comments B-2.5 for an existing predefined rule-based metric. The 2016 regulatory amendments included a provision that moves any allowances that remain unsold for eight consecutive auctions to the Reserve. This amendment was approved by the Board in July 2017. Additionally, AB 398 includes legislative direction on the treatment of unsold allowances, which is consistent with the regulatory amendments adopted in 2017. This mechanism has already proven to be effective. Due to low demand for allowances through 2017, at least 39 million allowances will be transferred to the Reserve and

³³¹ See March 1, 2018 Presentation, Slides 20-21.

removed from general circulation. These removals are visible in the quarterly instruments reports noted above.

As discussed in Response to 45-Day Comments 2.1, if it appears statewide emissions are not declining as needed, CARB staff plans to evaluate which sectors are not responding as anticipated, review all programs that cover those sectors, and ascertain why, as well as assessing the best path forward to ensure California stays on track to meet its legislatively established GHG targets. Periodic reviews of progress toward achieving the 2030 target and the performance of specific policies will also provide opportunities for the State to consider any changes to ensure we remain on course to achieve the 2030 target.

Moving More Allowances to Reserve Tiers

B-4.5. Comment:

Additionally, in our comments to the Independent Emission Advisory Committee ("IEMAC") we provided a recommendation to maintain more allowances in the "speed bumps" and "price ceiling" reserves to reduce allowance supply in the active market and safely test how this effects the market and prices (see Attachment A)...

SUBCOMMITTEE REPORTS ON MANAGING ALLOWANCE SUPPLY & ALLOWANCE OVERALLOCATION...

2. We support IEMAC's recommendation to reduce the post-2020 active market allowance supply by moving allowances into the post-2020 "Reserve Tiers" and "Price Ceiling" (Section 4(4)(a) of the Subcommittee Report on Managing Allowance Supply).
3. Some additional thoughts on why the market seems overallocated:
 - a. A clear sign indicating that there has been a historical and current oversupply of allowances in the market is that allowances have continually traded at or near the auction price floor.
 - b. Prior to 2013, allowance prices were much more volatile and traded based on industry and regulatory news. However, since program implementation, the allowance price has traded near the auction price floor and any industry or regulatory news has had very little effect on allowance prices.
 - c. The market has become complacent and seems comfortable that there is an adequate allowance supply now, and in the future, and has very little concern that allowance prices will rise to any significance above the auction price floor.
4. By reducing allowance supply post-2020 and forcing allowance prices to trade based on the true supply and demand in the market, as opposed to just trading around the auction floor price, this should provide CARB with a better indication of the actual state of over or under-supply in the market at any given time.

5. An increased and more volatile allowance price will incentivize compliance entities and market participants to participate more actively in the market and strongly consider offsets and investing in offset projects as a path towards compliance. The majority of compliance entities do not use offsets for compliance due to the complications associated with contracting and guarantees with the project developer. Additionally, because offsets trade at such a small discount to allowances, there is not an incentive for buyers to take the risks associated with offsets. (DENTONS)

Response: CARB disagrees with the comment that claims the market is complacent and expecting low prices. Moreover, CARB disagrees that increased price volatility by itself would incentivize market participants and covered entities to participate in the market. There is no evidence provided that price volatility would be a desirable scenario for the future Program.

CARB disagrees with the comment's assertion that the market is oversupplied. See Responses to 45-Day Comments B-1.2 and B-2.1 for a discussion of staff's position that the Program's ambition and allowance supply are appropriate at this time. See also Response to 45-Day Comment B-1.3 and Response to 45-Day Comment B-2.1, that detail the modeling conducted to support the adopted Regulation, and discuss Appendix D to the ISOR. As noted in Appendix D, at this time, staff is not proposing to change existing banking rules, remove unused allowances, or change post-2020 annual caps as part of this rulemaking.

In addition, and as noted in Response to 45-Day Comment B-1.3, in adopting the amendments, Board Resolution 18-51 directs staff to continue monitoring allowance supply, and to quantify and report to the Board, by no later than December 31, 2021, the volume of unused allowances from 2013 to 2020, including volumes held in private accounts, and the potential for unused allowances to hinder the ability of the Program to help achieve the SB 32 target. The Board further directed that CARB staff will hold a workshop in 2019 to discuss potential methodologies to evaluate this topic. The commenters' proposal to remove allowances from the system, would need to acknowledge that one of the effects of removing allowances is higher allowance prices, reached sooner, than would result from the adopted amendments to the Regulation.

See Response to 45-Day Comments B-1.11 for a discussion of the role of offsets in the post-2020 Program. As stated there, while prices have historically been near the ARP, this has not prevented the operation of a significant number of offset projects. To date, CARB has issued over 143 million compliance offset credits.³³² For the second full compliance period, which ran from 2015 through 2017, California compliance entities surrendered just over 62.7 million offsets, equal to 6.36% of their combined compliance obligations. The primary role of the

³³² Available at CARB offsets web page: <https://www.arb.ca.gov/cc/capandtrade/offsets/offsets.htm>

Program is to result in cost-effective reductions in the covered sectors. The offset program is a limited opportunity for the Program to help fund reductions in non-covered sectors and support cost containment in the overall Program.

See Response to 45-Day Comment B-1.3 for how design features of the Cap-and-Trade Program will support a smooth increase in the carbon price signal, including the escalation of the Auction Reserve Price itself, that may incent additional offset projects.

B-5. Price Ceiling Units

Support for Price Ceiling Unit Provisions

B-5.1. Comment:

Price Containment Units

We support the approach taken in proposed §95915 with respect to the use of Price Containment Units (PCUs) should prices exceed the price ceiling. (DENTONS)

Comment:

VERA is supportive of the following staff proposals:

Response: Definition of Direct Environmental Benefit and Ceiling Price Unit... (VERA, 3DEGREES) Thank you for the support. CARB notes that by setting the price ceiling units and allowance price at the same level within the price ceiling, compliance entities would not have a reason to purchase allowances at prices greater than the price ceiling price.

Lower Price Ceiling, Higher Price Ceiling Unit Price

B-5.2. Comment:

Another potential way to partially bifurcate allowances under the cap from the price ceiling units would be to direct more allowances to the second reserve tier as opposed to the price ceiling tier. (SDG&E)

Comment

AB 398 SEC. 4. Section 38562 (c)(2)(A)(ii)(II) states that “If the allowances from the allowance price containment reserve are exhausted, the state board shall offer covered entities additional metric tons at the price ceiling if needed for compliance.” These instruments are called the “price ceiling units” in the 45-day proposed regulation. It is unfortunate that these units, which are necessarily above the state’s emissions cap share the same price as allowances that are under the cap. Bifurcating the allowances from the price containment units, setting a lower “price ceiling” for allowances under the cap and a higher “price ceiling” for the price ceiling units may help to achieve the lower prices mandated in AB 398, while still maintaining a higher price that would act as a

signal to invest in clean technologies via a somewhat higher price ceiling from price ceiling units. (SDG&E)

Response: The proposal in the comments would not meet AB 398 requirements. AB 398 included Health and Safety Code section 38562(c)(2)(A)(ii), which requires CARB to offer both allowances (i.e., those allowances remaining in the APCR as of December 31, 2020) and, if such allowances are exhausted, Price Ceiling Units (PCU) at the price ceiling. It does not authorize CARB to implement the bifurcated structure recommended by the comment. For this reason CARB has not modified the adopted amendments. Please see Response to 45-Day Comment B-5.4 for further details on approaches to obtaining PCU. See Response to 45-Day Comment B-3.15 for the means by which CARB balanced the legislative direction contained in AB 398 to design the price ceiling.

Use of Offsets as Price Ceiling Units

B-5.3. Comment:

Ceiling Price Units

Offsets are also a key component in the concept of a Ceiling Price Unit (CPU). These CPUs need to be real, quantifiable, enforceable, and additional GHG reductions to ensure the environmental integrity of the Program. Such requirements are the definition of offsets. VERA supports the use of offsets as CPU currency. We also support efforts by CARB to initiate processes to secure CPU in advance to the ceiling price being hit in the marketplace. Failure to provide sufficient lead-time could lead to a delayed supply of issued offsets to mitigate prices from rising to and above the ceiling. The stated goal of the CPU construct is fully satisfied with the use of CARB-approved offsets. (VERA, 3DEGREES)

Comment:

To preserve the integrity of the GHG reductions used for PCUs [Price Containment Units], we recommend the use of verified offsets created under approved compliance or voluntary protocols/methodologies.

Design the program to invest in a reserve PCUs through the purchasing of compliance and voluntary offsets sooner than later. This advance investment would have the benefit of providing funding to incentivize more in-state offset project development from existing CARB protocols and other voluntary protocols.

We recommend the minimum price CARB may purchase offsets to meet this obligation be set at the auction price floor. We recommend CARB consider using an offset purchase ratio greater than one offset to one PCU to provide additional environmental benefits to the program...

SUBCOMMITTEE REPORT ON PRICE CEILING CONSIDERATIONS

1. We support the recommendation that offsets to be used for price containment units (PCUs) should the price ceiling be reached and allowances available at that price are exhausted.
2. We recommend the use offsets from the voluntary registries (ACR, CAR, & Verra) be used to meet this obligation.
3. We support the recommendation for CARB to "design the program so that investments in a reserve of emissions to account for the possible use of price ceiling units occurs before they might be brought into the program. This advance investment would have the indirect benefit of identifying new protocols for out of market emissions reduction opportunities."
4. We recommend the minimum price CARB may purchase offsets to meet this obligation be set at the auction price floor.
5. We support the recommendation of using "... a ratio greater than ton per ton..." of offsets (DENTONS)

Comment:

If California exceeds the ceiling price, AB 398 directs the state to procure ton-for-ton emissions reductions to address the issue. Therefore, we call on the Air Resources Board to create a registry for projects that qualify as real, permanent, quantifiable, verifiable, enforceable and additional emissions cuts for the purpose of obtaining the ton-for-ton emissions reductions... Further, registered C&T offsets should automatically be added to this list. (SILICONVALLEADERGROUP)

Comment:

Price Ceiling Units

With regard to Price Ceiling Units (PCUs), ACR fully concurs with the requirements that emissions reductions be real, permanent, quantifiable, verifiable, enforceable, and additional, as described in Section 95915(h)(2) and specified by AB 398. Considering that these requirements are the criteria for offsets, ACR recommends that offsets be incorporated as PCUs. Doing so would streamline the program and ensure that each PCU achieves the requisite emissions reduction.

Should CARB opt for an approach of selling PCUs and, in turn, using the revenue to pay for emissions reductions, ACR recommends the purchase of offsets. Again, offsets would offer the most compatible overlay with the statutory requirements. Furthermore, AB 398 directs CARB to achieve emissions reductions "on at least a metric ton for metric ton basis." If price ceiling revenue is sufficient to purchase more offsets than the number of allowances sold, the legislature has clearly indicated CARB should do so. Indeed, excess offsets could compensate for the additional warming that will occur during the time lag likely between hitting the price ceiling and purchasing offsets.

Regardless of whether offsets are the currency of PCUs or whether price ceiling revenue is used to purchase offsets, CARB should create a framework that helps to ensure offsets are available should the price ceiling be reached. While any offsets produced under the compliance protocols should be automatically eligible, the volume of offsets needed may well necessitate reliance on offsets produced under the voluntary protocols of the OPRs. CARB should pre-qualify the OPR protocols eligible to produce acceptable offsets and should, if necessary, delineate additional criteria for project eligibility (e.g. vintage, location). Going still further, ACR suggests that CARB should approve individual projects that are PCU- eligible, along with a transparent system that creates a queue for the approved projects to deliver offsets. Under such a framework, a project developer that believes the price ceiling will be reached would have the clarity needed to execute an approved emissions reduction project. (ACR)

Comment:

PRICE CEILING UNITS

Offsets are also a key component in the concept of a Ceiling Price Unit (CPU). These CPUs need to be real, quantifiable, enforceable, and additional GHG reductions to ensure the environmental integrity of the Program. Such requirements are the definition of offsets. IETA supports the use of offsets as CPU currency. We also support efforts by CARB to initiate processes to secure CPU in advance to the ceiling price being hit in the marketplace. Failure to provide sufficient lead-time could lead to a delayed supply of issued offsets to mitigate prices from rising to and above the ceiling. The stated goal of the CPU construct is fully satisfied with the use of CARB-approved offsets. (IETA)

Response: As noted in the ISOR (p. 48), the adopted amendments describe the process through which covered entities would purchase these PCUs, at the same price ceiling sales as any allowances offered at the price ceiling, and further specifies that any moneys generated from the sale of PCUs will be expended to achieve emissions reductions on at least a metric ton for metric ton basis that are real, permanent, quantifiable, verifiable, enforceable by the state board and in addition to any greenhouse gas emission reduction otherwise required by law or regulation and any other greenhouse gas emission reduction that otherwise would occur. Future regulatory amendments will likely be necessary to identify eligible emissions reductions achieved using price ceiling unit sales proceeds. Possible sources could be sector-based offset credits from future approved programs that reduce emissions from tropical forests and other uncapped sectors.

CARB staff further agrees with the commenters that offset credits, by definition, must also be real, permanent, quantifiable, verifiable, enforceable, and additional.

See Response to 45-Day Comments B-5.4 for a discussion of the timing of price ceiling sales of PCUs, versus the timing of eligible emissions reductions achieved using price ceiling unit sales proceeds.

Price Ceiling Unit Considerations

B-5.4. Comment:

SMUD supports:

- Going beyond one-to-one reductions where feasible to insure integrity... (SMUD)

Comment:

3. Project Registry: Creating a registry for greenhouse gas (GHG) reduction projects that qualify as real, permanent, quantifiable, verifiable, enforceable and additional emissions cuts for the purpose of obtaining the ton-for-ton emissions reductions specified in AB 398, if the price ceiling is reached...

Project Registry

If California exceeds the ceiling price, AB 398 directs the state to procure ton-for-ton emissions reductions to address the issue. Therefore, we call on the Air Resources Board to create a registry for projects that qualify as real, permanent, quantifiable, verifiable, enforceable and additional emissions cuts for the purpose of obtaining the ton-for-ton emissions reductions. If the state ever hits the emissions cap, this list of pre-approved and audited projects would be waiting. (SILICONVALLEADERGROUP)

Comment:

Stakeholders have suggested that abatement opportunities exist that cannot be taken directly by sources covered by the program, and that many of these options offer emissions reductions at costs far lower than the price ceiling. Examples might include offsets including international forest offsets, innovative investments on natural and working lands, and purchasing emissions allowances from other trading programs.

These alternatives would yield emissions reductions that could be used to account for the emissions increases embodied in price ceiling units. Because the cost per ton of these alternatives is likely less than the price ceiling, a ratio greater than ton per ton should be achievable. Coupled with the increased revenue that would be available from the sale of price ceiling units, high quality reductions could be secured outside of the market at greater than ton per ton, leading to greater environmental ambition...

The state should consider the development of out-of-market emissions reduction opportunities in advance of when they might be needed in the program to provide compliance instruments if the price ceiling is triggered. New protocols that might apply can generate global environmental benefits...

2. Accounting for Emissions Enabled by a Price Ceiling

If the price ceiling is reached and allowances available at that price are exhausted, and price ceiling units are introduced, then emissions from sources covered by the cap-and-trade program will be greater than the number of emissions allowances issued under

the emissions cap. An important question for the environmental integrity of the trading program is what the source of the price ceiling units will be, and how the state's overall emissions goal will be achieved...

CARB may want to design the program so that investments in a reserve of emissions to account for the possible use of price ceiling units occurs before they might be brought into the program. This advance investment would have the indirect benefit of identifying new protocols for out of market emissions reduction opportunities, which might be useful in other jurisdictions. However, it could shift the location of emissions reductions to outside California. CARB may have limited opportunity to maximize reductions in California via the price ceiling, however, given that a price ceiling with instruments backed up on a ton-for-ton basis is required by statute. This dynamic could warrant further consideration...

2) The state should anticipate potential sources of emissions reductions outside the market that can be realized if price ceiling units are made available...

4) Potential out-of-market emissions reductions to account for the potential use of price ceiling units are likely to be less expensive per ton than the price ceiling. The state should consider a ratio greater than ton per ton to account for the use of price ceiling units.

5) The state should consider the development of out-of-market emission reduction opportunities in advance of when they might be needed in the program. Initial investments in these opportunities and efforts to develop new protocols that might apply to account for price ceiling units can propagate methods that generate global environmental benefits. Having reductions available before they are needed can also help protect the environmental integrity of the program. CARB could make recommendations to the Legislature or work with the Legislature to explore the role of each body in considering these opportunities...

While these recommendations [IEMAC comments on price ceiling and price ceiling units] are purely for consideration and not for adoption, we believe that the aforementioned criteria will ensure that the state's cap-and-trade program continues to function as the backstop for California's suite of climate policies. At the same time, the program can drive further climate ambition, deliver cleaner air for all Californians, and remain a viable market that attracts the technological innovation and investments that are good for the economy and good for the environment.

[The original comment, which includes a reference list, is available at <https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=ct2018>.] (IEMAC)

Comment:

Use of Revenue from Sale of Price Ceiling Units. SMUD would not have supported the hard price ceiling concept without the environmental integrity provisions included in AB 398, which require ARB to use the revenues from selling "additional" allowances in

the market to achieve at least one-to-one reductions in GHG emissions. SMUD supports:...

- Inclusion of ready to implement offset projects such as REDD projects;
- Procuring and retiring compliance instruments from other jurisdictions where appropriate and feasible; and
- Early consideration of policies to develop and establish options and projects, so that emission reductions can be readily and quickly accessed if the price ceiling is reached. (SMUD)

Comment:

Additionally, WPTF remains concerned that CARB has not proposed a mechanism for ensuring additional emissions reductions if Price Ceiling Units must be issued. We encourage CARB to initiate a new rule-making as soon as possible to develop options for achieving additional emission reductions if price ceiling breached. (WPTF)

Comment:

Price Ceiling Units

CARB should begin working now to identify high-integrity reductions to back PCUs and work with the Legislature to consider a “rainy day” fund for reductions in advance of reaching the price ceiling.

A critical aspect of the new price ceiling is the requirement that if the price ceiling is met and reductions are sold above the cap, CARB is required to use the resulting revenue to secure reductions on at least a ton-for-ton basis. This is essential to maintain the environmental integrity of the program and make sure the atmosphere remains whole.

We encourage CARB to begin developing the pathway for these PCU reductions now, even if models indicate that hitting the price ceiling is possibly several years away. Establishing what kind of reductions would be eligible and where they could be sourced in sufficient quantity will take some time. In order to do this important advance work following the current regulatory process, CARB should develop a plan and where necessary make specific recommendations to the Legislature regarding how to prepare for the inclusion of PCUs in the market. These recommendations could include establishing a “rainy day” fund to ensure reductions are available as soon as the price ceiling is triggered, perhaps using some revenue from allowances sold at one of the other price containment tiers. To guarantee the continued integrity of the cap-and-trade program and maintain it as a global model for emission reductions, the best option would be not to wait until there is revenue from PCUs to begin purchasing reductions to fulfill the ton-for-ton reduction requirement.

Most modeling and projections seem to show higher demand for offsets from within California than supply due to the new Direct Environmental Benefits (DEBs)

requirement. As such, we would anticipate that most PCUs would need to come from outside of California, including from protocols that have not yet been approved. Therefore, we urge CARB to continue the effort to identify appropriate reductions particularly in areas where there could be sufficient supply if California does need to sell PCUs.

As EDF has commented previously, one potential source of PCU reductions are international sector-based offsets, such as those that could come through the proposed California Tropical Forest Standard.³³³ As CARB has made clear, a future rule-making would be a necessary next step to allow these credits into California's market, and EDF is extremely supportive of that regulatory process moving forward. With California's standard in place and subsequent rule-making and linkage findings, international sector-based offset credits would provide a significant supply of high-quality emission reductions that could be available to purchase with revenue from the sale of PCUs. EDF commends CARB for taking the critical first step of introducing the California Tropical Forest Standard, and encourages CARB to adopt that standard and continue on the rule-making process in the next year. (EDF)

Comment:

Attachment 2: March 2, 2018 Workshop Comments

2. Several Interacting Factors Affect the Market's Ability to Drive Cumulative Reductions Expected by the Scoping Plan and Achieve the 2030 Target, Given Current Oversupply

c. Effective Procedures are Needed to Ensure Environmental Integrity at the Price Ceiling

AB 398 requires emissions reductions on a ton-for-ton basis to counteract any emissions above the program's emission budget associated with allowances sold at the price ceiling. Accordingly, CARB should design the price ceiling mechanism to ensure environmental integrity in the event of high allowance prices. The price ceiling mechanism should prioritize the procurement of real, quantifiable, verifiable and permanent emissions reductions beyond what would have happened in absence of the ceiling mechanism and these reductions should be procured as quickly as is practicable.

We laid out principles for effective ceiling mechanism design in our January 16th blog post on the subject.³³⁴ In brief:

- Ton-for-ton reductions must be real, quantifiable, verifiable and permanent reductions in emissions which are additional to those which would have otherwise occurred in the status quo.

³³³ EDF comments on this standard are forthcoming.

³³⁴ <https://nextgenpolicy.org/blog/california-cap-trade-price-ceiling-design/>

- CARB should compile a registry of projects eligible to qualify as ton-for-ton reductions well in advance of any need for such projects, in order to ensure that when timely reductions are needed, the necessary procedural steps have already been taken. Project developers would submit their project to this registry and go through the certification process as projects came on-line. This ensures that if the ceiling is reached, there are projects ready to go in a timely fashion.
- If the price ceiling is reached, CARB should, as soon as possible, purchase half of the required emissions cuts from projects which have been certified and added to the registry. CARB should use a reverse-auction or similar blinded procedures to allocate purchases equitably between eligible, cost-effective projects with the intent to engage as many registered projects as possible and procure emissions cuts as rapidly as possible. The intent is to reward as many project developers as possible for participating in the registry system.
- The other half of the required emissions cuts should be allocated by a conventional grantmaking process, administered by CARB, through which CARB should seek to maximize co-benefits to California. CARB could draw projects from the registry described above or make other investments designed to compensate for the excess emissions and advance California's climate, clean air, and equity goals.
- CARB should allocate three-quarters of any remaining revenue from the sale of permits at the price ceiling to projects which reduce emissions under capped sectors, in order to take pressure off the market and reduce the chance that prices will remain at or near the cap level. These projects should prioritize areas where market failures or other economic conditions prevent existing policies from effectively reducing emissions.
- The final quarter of remaining revenue should be used to replenish the stock of qualified emissions-reducing projects in the registry, to ensure that timely emissions cuts are available if prices return to the level of the cap.

By building an effective cap-preserving mechanism at the price ceiling, CARB can ensure that the environmental integrity of the cap-and-trade program is preserved under even extreme and unusual market conditions. (NEXTGEN)

Comment:

First, we strongly encourage CARB to begin working now to identify high integrity reductions to back the price ceiling units.

It's important that CARB consult with the legislature to consider a rainy-day type fund to start the pipeline of reductions well in advance of potentially reaching the price ceiling. To guarantee the continued integrity of the Cap-and-Trade Program and maintain its position as a global model for emission reductions, the best option would be not to wait

until there is revenue from the price ceiling to begin purchasing reductions to fulfill that ton-for-ton requirement. (EDF2)

Response: The adopted Regulation contain procedures that would govern sales of price ceiling units (PCU) from the price ceiling mechanism. As noted in the ISOR, the adopted Regulation describes the process through which covered entities would purchase these price ceiling units, at the same price ceiling sales as any allowances offered at the price ceiling, and further specifies that any moneys generated from the sale of price ceiling units will be expended to achieve emissions reductions on at least a metric ton for metric ton basis that are real, permanent, quantifiable, verifiable, enforceable by the state board and in addition to any greenhouse gas emission reduction otherwise required by law or regulation and any other greenhouse gas emission reduction that otherwise would occur.

Future regulatory amendments will likely be necessary to identify eligible emissions reductions achieved using price ceiling unit sales proceeds. Possible sources could be sector-based offset credits from future approved programs that reduce emissions from tropical forests and other uncapped sectors. These provisions would have to be added to a future rulemaking. The comments address provisions that would have to be added in the future, and are thus outside the scope of this rulemaking. See also Response to 45-Day Comment B-5.3.

Some of the recommendations made in the comments reflect the directives that AB 398 provided to CARB. First, AB 398 requires that PCU must

“...achieve emissions reductions, on at least a metric ton per metric ton basis, that are real, permanent, quantifiable, verifiable, enforceable by the state board and in addition to any greenhouse gas emission reduction that would otherwise occur.” (Health and Safety Code 38562(c)(2)(A)(ii)(II).

Some of the comments requested that CARB consider creating PCU that represent a reduction on more than a ton-for-ton basis as a method of increasing the Program’s ambition. These comments address provisions that would be contained in a future rulemaking that sets the rules governing the creation of PCUs, and are thus outside the scope of this rulemaking.

Several comments make specific suggestions that CARB consider reductions from other jurisdictions, including international sector-based reductions such as REDD. These reductions were included as a potential source in the ISOR (p. 48) for this rulemaking, but that would be subject to future rulemaking as CARB currently has no regulatory provisions allowing it access to reductions generated through any of these sources.

Several comments suggest that CARB begin to develop policies, regulations, and actual projects to ensure that PCU would be available if needed at price ceiling sales. CARB has adopted amendments that govern the sales procedures, but would have to undertake a future rulemaking to determine what projects would be eligible, as well as how PCU would be created and approved.

One comment suggest the creation of a “rainy day fund” to ensure PCU could be obtained when needed. AB 398 provides for a similar funding mechanism. First, approximately 79.6 allowances in the Reserve will be held for sale at the price ceiling as outlined in Table 8 of the ISOR.³³⁵ CARB can only sell PCU when these allowances are already depleted. AB 398 then requires that CARB use the proceeds to acquire reductions for sale from the price ceiling.

Other comments suggest that CARB produce a registry for projects deemed eligible for use as PCU. Another comment suggests that CARB engage as many projects as possible on the registry, to ensure an adequate supply of PCU. Finally, another comment suggests that CARB purchase reductions from projects in the registry based on sales bids submitted by project operators. CARB has not proposed such a registry, so the comments are outside the scope of the this rulemaking. It is also unclear what projects would participate in this advance registry. Registered projects would wait for an uncertain number of years based on the potential to exhaust the Price Ceiling allowances in order to receive revenue. Project developers would be required to invest upfront with no information on the timing and rate of return on their investment.

Further, CARB also notes that it is not possible at this time to conduct an assessment of which projects will ultimately qualify for purchase for use as PCUs, especially as CARB does not know which projects may be submitted in the future.

C. ALLOWANCE ALLOCATION

C-1. Industrial Allocation

Lower Allowance Allocation

C-1.1. Comment:

The proposed allocations (under AB398) to climate polluters are too large in many instances to be effective. In some cases the allocations would actually allow more emissions than the polluters are currently emitting.

³³⁵ Table 8. Distribution of Allowances in Current and AB 398 Reserve Mechanisms. (p44)
<https://www.arb.ca.gov/regact/2018/capandtrade18/ct18isor.pdf>

As a society we have waited to long to take the appropriate actions. As the recent IPCC report states we must begin immediately to cut emissions wherever possible. These allocations are not going to achieve this objective.

So I plead with you for my pre-school grandchildren to do the right thing.--

Fight for Renewable Energies! Save the global ecology; create jobs; eliminate dependence on foreign oil; reduce military requirements
(CUPERTINOSUSTAINCOMM)

Response: The commenter appears to request that CARB decrease allowance allocation to emitting facilities below what is required by AB 398. AB 32 requires the Program to minimize the risk of emissions leakage (a reduction in GHG emissions within the State that is offset by an increase in GHG emissions outside the State). The purpose of industrial allowance allocation is to minimize emission leakage risk and to ensure a smooth transition to a lower carbon economy for industrial covered entities. AB 398 specifically requires 2021-2030 industrial assistance factors to be set at 100 percent for all industrial sectors, which builds on the underlying requirement of AB 32 (Health and Safety Code section 39562(b)) to minimize leakage.

The methods CARB uses to calculate allowance allocation to industrial entities—using a product-based approach when possible, and using an energy-based approach as a fall-back method—provide the appropriate incentives to reduce GHG emissions while encouraging industrial production to remain in the State. The 100 percent industrial assistance factors mandated by AB 398 do not result in allowance allocation to covered entities that exceeds their covered emissions. A 100 percent AF does not mean businesses are freely allocated all the allowances needed to comply with the Program. Allocated allowance levels drop every year according to the cap adjustment factor, and businesses still need to reduce emissions onsite or acquire additional allowances to comply with the Program. By 2030, allowance allocation to industrial covered entities is forecasted to be about half of what it is today, and on average free allocation will provide less than half of the allowances needed for compliance in 2030. CARB will continue to evaluate industrial leakage risk and assess allowance allocation methodologies to ensure that the economic competitiveness of California industry is preserved while the overall Program goals are met.

Support for 2018-2020 and Post-2020 Industrial Assistance Factors of 100 Percent

C-1.2. Comment

NAIMA's comments strongly support the proposed amendments that revise Table 8-1 to set assistance factors for all sectors at 100 percent for the period 2021 to 2030 in order to comply with AB 398's direction to "[s]et industry assistance factors for allowance allocation commencing in 2021 at the levels applicable in the compliance period of 2015

to 2017 i.e., 100 percent inclusive.” NAIMA also supports the regulatory amendments to provide a quantity of allocation, for the purposes of minimizing emissions leakage, to industrial entities for 2018 through 2020 by using the same assistance factors in place for 2013 through 2017 [100 percent].” NAIMA does not provide comments on the specific amendments that are described in detail in Chapter II of the “Staff Report: Initial Statement of Reasons for Rulemaking – Proposed Amendments to the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation.” These other amendments do not impact directly NAIMA’s members ability to manufacture products in the State of California.

Making fiber glass insulation takes energy. That energy, however, produces products that are designed to save energy and, by so doing, to also reduce greenhouse gas emissions. These industry assistance factors then actually help to achieve the long-term goal of CARB’s Cap & Trade Program. Furthermore, sustainability is also about economic prosperity, too. Preserving the manufacturing base in California is good business, and when the products being produced help to reduce greenhouse gas emissions, that is even wiser to protect and preserve that capacity. These assistance factors are enabling fiber glass plants to remain in California. An important part of this is to encourage the use of energy efficiency-based carbon offsets, which would not only help businesses in the cap-and-trade system reduce their compliance costs, such efficiency-based offsets would also, as explained in more detail below, have many sought-after co-benefits such as improvements in public health, increased health and safety of building and home occupants, increased home value, and reductions in other pollutants beyond greenhouse gas emissions. In short, NAIMA requests that CARB make NAIMA members’ California plants part of the solution and not unfairly chase fiber glass insulation production to nearby out-of-state plants employing out-of-state workers.

CAP-AND-TRADE WILL IMPACT FIBER GLASS INDUSTRY

This Proposal is particularly relevant to NAIMA and its members because NAIMA’s members have four (4) manufacturing plants located in California:

- CertainTeed – Chowchilla, California
- Johns Manville – Willows, California
- Knauf Insulation – Shasta Lake, California
- Owens Corning – Santa Clara, California

In addition, virtually all of NAIMA’s members’ products are used or sold in California. More importantly, NAIMA’s members provide important manufacturing jobs to the California economy. Specifically, Owens Corning operates a fiber glass building materials manufacturing facility in Santa Clara. According to public sources, Owens Corning’s Santa Clara facility employs an estimated 250 – 499 employees (www.manta.com/c/mmcntlv/owens-corning-sales-inc). Johns Manville operates a fiber glass manufacturing facility in Willows, California. According to public sources, Johns

Manville's Willows facility employs between 250 and 499 employees and generates annual revenue of \$100 to \$500 million (www.manta.com/c/mmckzn/johns-manville-corp). CertainTeed Corporation operates a fiber glass manufacturing facility in Chowchilla, California. According to public sources, CertainTeed's Chowchilla facility employs between 250 and 499 employees and generates annual revenue of \$50 to \$100 million (www.manta.com/c/mmjhsbb/certain-teed-corp). Knauf Insulation operates a fiber glass manufacturing facility in Shasta Lake, California. According to public sources, Knauf's Shasta Lake facility employs between 100 and 249 employees and generates annual revenue of \$50 to \$100 million (www.manta.com/c/mm0tt3b/knauf-fiberglass).

California is losing manufacturing jobs – in both traditional and high-tech industries – to other states and nations. One of the key reasons for this exodus from California is the State's existing regulatory requirements and concerns about the future regulatory climate.³³⁶ California's regulatory environment is challenging, time-consuming, complex, duplicative, and costly.

CARB's Cap-and-Trade Program seeks to prevent industry from leaving the State of California by creating assistance factors and allowances. This approach is prudent because the production of fiber glass insulation in California can be shifted to other manufacturing facilities in other states near California borders, Canada, and Mexico.

Fiber glass insulation is an important contributor to the California economy, through direct manufacturing, shipment of finished product to markets within California and other western states, and export of product to foreign markets. It also supports the insulation industry and installers, is a critical material for the construction industry, and a much-used material for do-it-yourself consumers. In addition, fiber glass insulation promotes energy efficiency, environmental preservation, and reduces pollutants, including greenhouse gases. Fiber glass is also the most thoroughly tested and researched insulation product on the market. It is the preferred product for more than 80 percent of the insulation market. If fiber glass insulation would not be available, the supplies of alternative insulating materials would not be sufficient to supply the demands of the market. Raising the cost of insulation products by raising the costs of doing business for fiber glass insulation manufacturers or by artificially reducing the supply of available insulating materials will reduce the ability of the State to meet its greenhouse gas emission reduction goals.

In previous comments, NAIMA has effectively illustrated this ability to shift manufacturing from California to other nearby locations by referencing the configuration of fiber glass manufacturing plants.

NAIMA respectfully requests CARB recognize that if the California fiber glass operations are not economically viable as a result of AB 32 and the Proposed Amendments, some

³³⁶ Ross C. Devol, Perry Wong, Armen Bedroussian, Candice Flor Hynek, and David Rice, "Manufacturing 2.0: A More Prosperous California," Milken Institute, June 2009, p. 9.

of NAIMA's California members might close their plants or significantly reduce capacity. The fiber glass insulation production capacity in other jurisdictions will be able to adequately supply the California market, thereby increasing emissions in those jurisdictions and overall greenhouse gas concentrations, including in California.

Any demand previously fulfilled by a California plant can be easily and economically supplied from other U.S. plants where production costs to change significantly. This industry does not have to look to offshore facilities to supply the California market. In addition to the increase in greenhouse gas emissions per ton of fiber glass insulation produced at these plants located outside California, the transportation needed to get that material to California markets would have a further negative impact on greenhouse gas emissions.

NAIMA again points out two manufacturing plants right at California's border in Arizona. An additional plant in Utah also could relatively easily take up the work of supplying the California market. There are also four insulation manufacturing plants in Western Canada.

The fiber glass insulation plants in the states bordering California are far more relevant to assessing the potential for leakage in this industry than 20 plants in Europe or 10 plants in Asia. If CARB is serious about preventing leakage from the State of California, it must carefully weigh the manufacturing potential of U.S. fiber glass and mineral wool insulation manufacturers. The presence of those 40-plus plants is the most effective argument for giving fiber glass plants 100 percent assistance factors for the third compliance period and beyond 2020.³³⁷

CONCLUSION

NAIMA strongly supports CARB's proposed amendments to retain the original 100 percent assistance factor for the third phase of CARB's Cap-and-Trade Program and to assign a 100 percent assistance factor for 2020 and beyond. (NAIMA)

Comment:

CMTA's members and the manufacturing and technology sectors carry a strong interest in the implementation of the changes ordered under AB 398 along with additional direction provided by the CARB board members in Resolution 17-21.

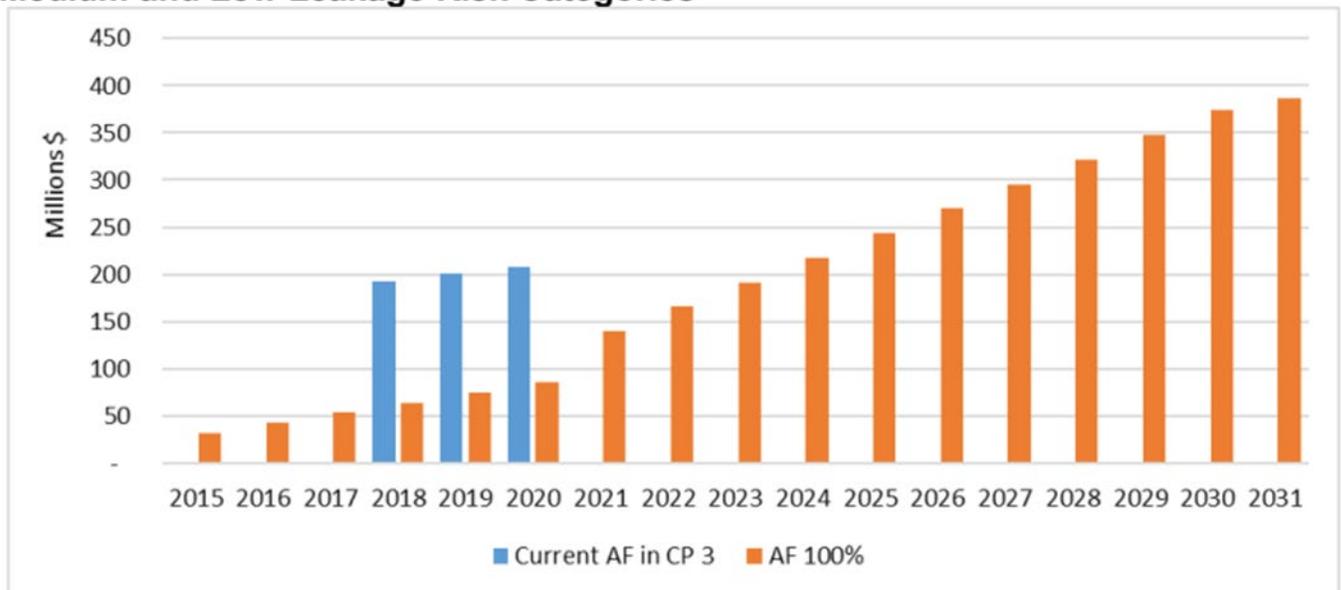
The central message of these comments, as with our comments at several earlier workshops on this regulation, remains "cost containment". Cost containment includes continuation of assistance factors (AFs) at 100 percent during Compliance Period 3 (CP3) and post-2020 period, a reasonable price ceiling paired with appropriately placed 'speed bumps' and maintenance of available allowances in the market.

CMTA Supports Proposed Industry Assistance Factor (AF) Changes

³³⁷ It is acknowledged that not all of these plants could produce the specific products being currently manufactured in the California plants.

In order to minimize emissions leakage, it is important that the AFs continue at 100 percent through the Third Compliance Period (CP3) and the post-2020 period, as directed by Resolution 17-21 and AB 398 respectively. ARB staff analysis shows that failure to continue the AFs at this level will lead to an unnecessary increase in allowance prices that drive up industry compliance costs as shown in Figure H from the Staff Report (below).

Figure H. Estimated Total Compliance Cost for Industrial Covered Entities in Medium and Low Leakage Risk Categories*



* Compliance costs

- Two fundamental points also argue for maintaining AFs at 100 percent for all sectors in CP3: 100 percent AFs do not translate to 100 percent compliance relief. Under current and proposed regulations California industry will continue to see a reduction in allowances annually to the point that most sectors will receive only 50 percent of their compliance obligation in 2030.
- California remains an outlier. While many have made commitments to reduce carbon emissions, this state remains one of few jurisdictions to impose a program to reduce carbon on industry.

Clear Board direction, CARB staff analysis of compliance costs and the lack of broader carbon market participation in competitive jurisdictions constitute sufficient evidence for the continuation of 100 percent AFs in CP3. Additionally, the smooth transition into the post-2020 period, as mandated by AB 398 argues for maintaining AFs in CP3.

Therefore, we respectfully request that CARB approve the continuation of the CP3 AFs at 100 percent in order to protect against greater emissions leakage related to unnecessarily high compliance costs. (CMTA2)

Comment:

I. CSCME SUPPORTS CARB'S PROPOSED ASSISTANCE FACTOR FOR THE CEMENT INDUSTRY

CARB proposes to maintain the cement industry's assistance factor at 1.0 through 2030. CARB's proposal is consistent with AB 32 and AB 398, which require that measures to reduce greenhouse gas ("GHG") emissions are implemented in a manner that minimizes leakage. It also complies with the requirement under AB 398 to "set assistance factors for allowance allocations commencing in 2021 at the levels applicable in the compliance period 2015 to 2017, inclusive."

CSCME supports CARB's proposal to maintain the cement industry's assistance factor at 1.0 through 2030. As CSCME has extensively documented in prior comment letters, the California cement industry has an exceptionally high risk of leakage due to a unique combination of factors. This exceptionally high risk of leakage will persist in the absence of a mechanism (e.g., an incremental border carbon adjustment) that treats domestically-produced cement and imported cement similarly with respect to carbon compliance obligations and costs. Unless and until such a mechanism is put into place, an assistance factor of 1.0 for highly leakage exposed industries, such as cement, is one of the elements of the allowance allocation framework that is necessary to meet CARB's statutory requirement to minimize leakage. (CSCME)

Comment:

Industrial Trade Assistance and Cap Adjustment Factors

Phillips 66 supports the CARB proposal of an industrial assistance factor of 1.0 for 2018-2030 recognizing the highly energy-intensive and trade-exposed operations of California refineries. (PHILLIPS66)

Comment:

Our comments today, as with those that we've made in the past, center on cost containment and focus on the continuation of industry assistance factors... First, CMTA supports the proposed industry assistance factor changes.

And we would request that ARB approve maintaining assistance factors at 100 percent for all sectors during compliance period three, and post-2020 in order to protect against greater emission leakage related to high compliance costs. (CMTA3)

Response: Thank you for the support. Both AB 32 and AB 398 require that CARB minimize leakage. Setting 2021-2030 industry assistance factors to 100 percent ensures the Cap-and-Trade Program conforms with AB 398 requirements and will help prevent industrial emissions leakage in the post-2020 decade. Moreover, as indicated in the Staff Report (see pages 60-63), setting industry assistance factors to 100 percent for the period 2018 to 2020 follows Board direction, minimizes industrial emissions leakage, and prevents a temporary increase in compliance costs during the third compliance period that

could inhibit some covered entities' ability to invest in GHG reductions and energy efficiency.

With respect to NAIMA's comment seeking energy-efficiency carbon offset credits, CARB notes that this rulemaking did not modify existing or propose new types of offset credits, and therefore the comment is outside the scope of the rulemaking. Notwithstanding, the design of the offset credit component of the Cap-and-Trade Program requires that offset credits occur outside of sectors covered by the cap, in order to comport with the requirement of AB 32 that offsets be additional to regulatory requirements. Since electricity is a covered sector, energy-efficiency carbon offsets would not be an eligible source of carbon offsets. Finally, with respect to one commenter's statements regarding a "reasonable price ceiling with appropriately placed 'speed bumps'," see Response to 45-Day Comment B-3.11.

Support for 2018-2020 Industrial Assistance Factors of 100 Percent

C-1.3. Comment:

Third Compliance Period IAF Necessary to Reduce Leakage Risk. AB 32 directs CARB to minimize leakage risk as it develops and implements California's climate policies. In order to guard against leakage, academics and economists have advised the state to consider, as part of the design of the cap-and-trade program, a system of allowance allocation that includes industry assistance.

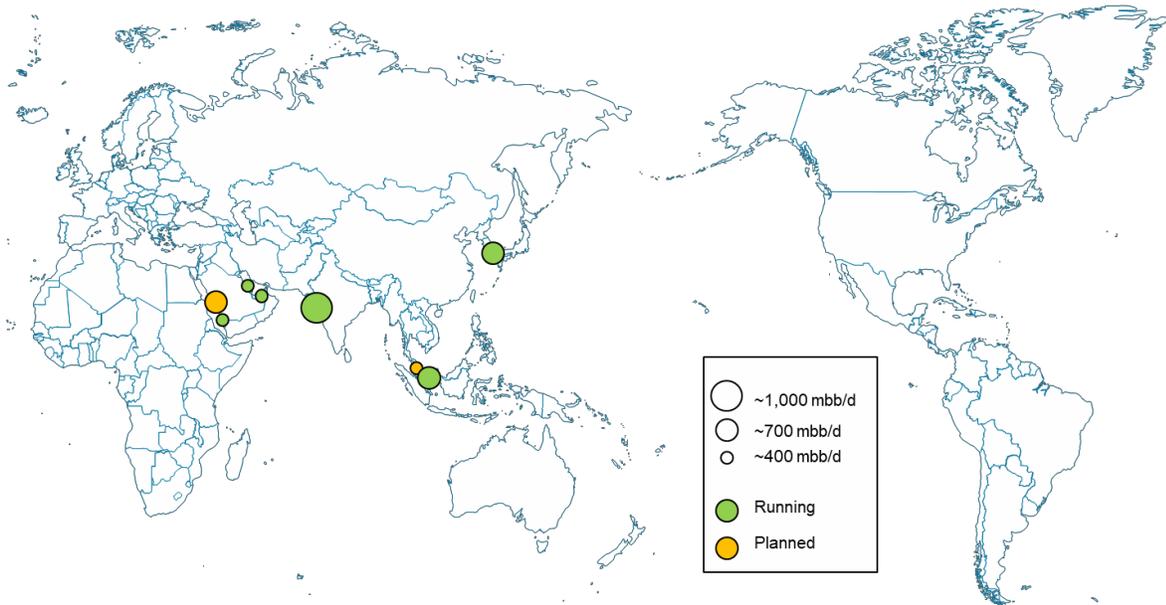
As the cap continues to decline and opportunities for additional emission reductions become increasingly scarce and expensive, there is a greater need for industry assistance in emissions allocations to insulate in-state companies from the competitive disadvantage that would be created relative to out-of-state competitors who do not incur the same level of carbon pricing. From a global perspective, the need for industry assistance in California diminishes only when other jurisdictions implement carbon reduction programs equivalent in cost and scope that level the playing field within regulated sectors. As CARB is aware, the response from other jurisdictions has been slow and limited in scope. Furthermore, competition is changing.

The below graphic illustrates additional CARBOB production capacity added in refinery projects in Asia and East Africa since 2005. These refineries have the capability to

supply Pacific Rim countries and states including California. This continues to demonstrate that the California refining sector is trade exposed.³³⁸

Refinery competitive landscape changes

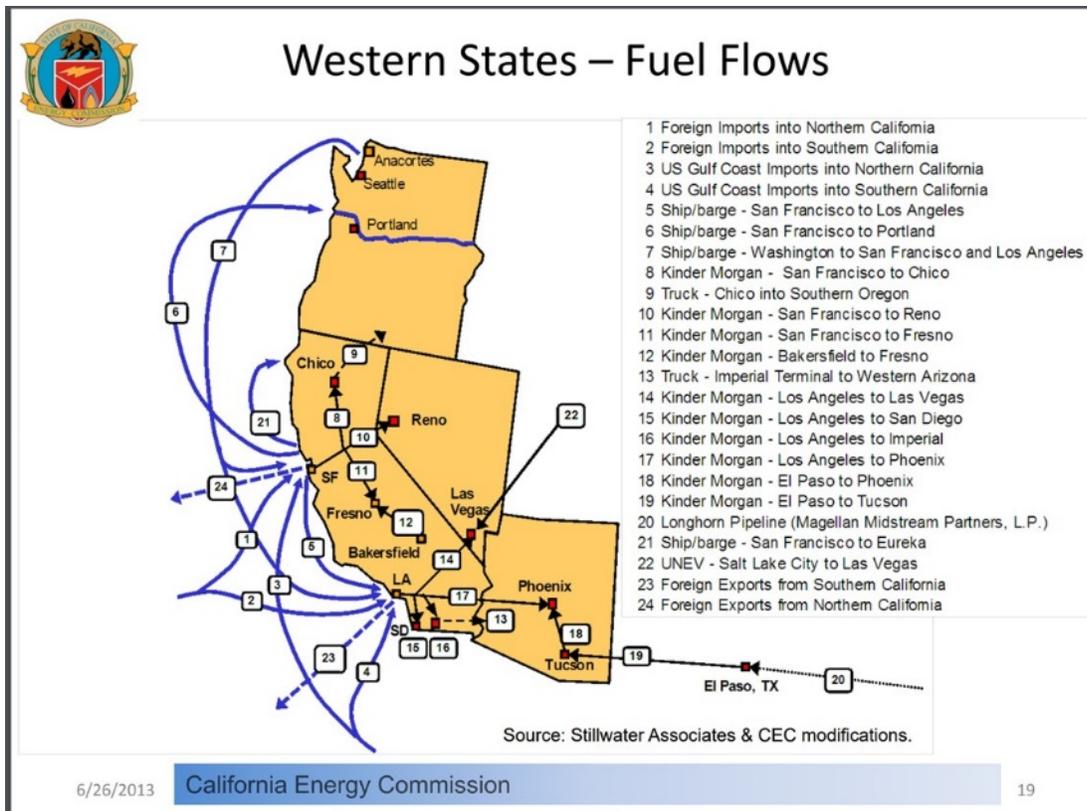
CARBOB Capable Refinery Capacity added after 2005



Additionally, the below graphic from the California Energy Commission (CEC) demonstrates the complexity and interdependence of petroleum product movements in the western United States. As shown in a presentation titled “The Transportation Fuel Supply/Demand Balances” for the CEC’s 2013 Transportation Energy Demand Forecast, CEC has illustrated how product moves between California and other countries, and between California and other states. California refineries compete with refineries in these other regions.

³³⁸ References:

<https://www.wsj.com/articles/saudi-plans-to-be-second-largest-exporter-of-refined-oil-products-1424879035> <http://www.ogj.com/articles/2016/06/petronas-updates-progress-on-malaysian-rapid-project.html> <http://www.marketwatch.com/story/jazan-gas-projects-company-breaks-ground-on-worlds-largest-industrial-gas-facility-2016-07-14>



As these graphics demonstrate, California refiners still face competition from outside of the state. An indicator of this growing competition is the more than tenfold increase in gasoline exports from the PADD5 refineries between 2007 and 2017, indicating significantly increasing international market exposure.

In recognition of the need to address potential leakage that can occur as a result of the implementation of the state’s cap-and-trade program, the CARB Board issued Board Resolution 17-21³³⁹ at its July 2017 Board meeting. The resolution directed staff to “propose subsequent regulatory amendments to provide a quantity of allocation, for the purposes of minimizing emissions leakage, to industrial entities for 2018 through 2020 by using the same assistance factors in place for 2013 through 2017.” During past workshops, CARB staff has discussed the extension of the previously adopted industry assistance factors, making the important point that such an extension would not mean that entities are allocated all allowances they need to comply with the state’s cap-and-trade program. CARB staff correctly highlighted that by 2030 most industrial sectors will receive less than 50% of the allowances needed to cover their compliance obligations.

WSPA and its member companies recognize the important role that third compliance period industry assistance factors play in helping to reduce leakage risk in the sector. As such, we continue to support the CARB Board direction and staff proposal to extend

³³⁹ <https://www.arb.ca.gov/board/res/2017/res17-21.pdf>

second compliance period industry assistance factors to the third compliance period, thus creating a smooth path to the fourth compliance period. (WSPA2)

Comment:

CLFP is pleased that the primary focus of many of the proposed amendments is cost containment as instructed by AB 398. This issue is paramount for food processors both in the third compliance period as well as post-2020 where compliance costs will effectively double for cap-and-trade entities. Coupled with the enormous cost increases expected due to such events as wildfire recovery, new groundwater regulations, federal clean air act requirements, and energy rate increases, leakage risk should remain the major concern for CARB going forward and the watchword for post-2020 implementation of the cap-and-trade over the remainder of the third compliance period.

INDUSTRY ASSISTANCE

100% Industry Assistance in Third Compliance Period

The passage of SB 32 significantly changed the dynamic of the cap-and-trade for many companies. In AB 398, the Legislature recognized leakage risk threatens job growth, the competitiveness of California industries, the state's economy, and undermines continued GHG emissions reductions under California's program. However, lawmakers also noted that industry not only met the reduction goals prescribed by AB 32 but will exceed the total emissions reductions required under the current program. In acknowledgment of this achievement, and in noting the increased leakage risks posed by SB 32, the Governor Brown and the Legislature responded by ensuring companies would receive 100% assistance factors beyond 2020.

The CARB Board's recognition of the critical need to ensure program consistency as evinced in Board Resolution 17-21 which directed staff to "propose subsequent regulatory amendments to provide a quantity of allocation, for the purposes of minimizing emissions leakage, to industrial entities for 2018 through 2020 by using the same assistance factors in place for 2013 through 2017" highlights the need for a consistent transition between 2018 and 2020.

CLFP fully supports the proposed adjustment to the assistance factors for the third compliance period. CARB staff's recommendation in the proposed regulation package to level up the assistance factors in the third compliance period acknowledges both the seriousness of the post-2020 leakage threat under SB 32, and the Legislative objective in looking to minimize that leakage. Given CARB's acknowledgment that other jurisdictions are failing to adopt carbon pricing policies, CLFP supports CARB's effort to guard against the continuing economic and environmental leakage risk by setting assistance factors for all sectors at 100 percent for the 3rd compliance period of 2018-2020.

As noted by CARB staff:

AB 32 [and] AB 398 both speak to the need to minimize leakage. Free allocation of allowances is the primary mechanism in the Cap-and-Trade Program to respond to this mandate. AB 398 sets the post-2020 assistance factors to 100 percent. It is reasonable to set the post-2020 assistance factors for the baseline scenario to at least those in the third compliance period as CARB would continue to be required to minimize leakage under AB 32. The existing 50%, 75%, and 100% baseline further reflects that in the previous regulatory revisions approved by the Board in 2017, staff was continuing to consider whether to maintain these three assistance factor levels based on leakage studies and Board direction in the 2018-2030 timeframe, or to modify them based on additional leakage assessments.

Overall, CLFP believes that this change is necessary as a failure to align CP3 assistance factors with the rest of the program going forward frustrates the need for certainty necessary for business planning, threatens program stability, and is likely to have unforeseen consequences that may not manifest until late in the compliance period, especially for food processors.

Because the impacts associated with the third compliance period are ongoing, (the loss of industry assistance is affecting companies now) CLFP respectfully recommends that the Board consider the issue of industry assistance in the third compliance period be taken up separately from the regulatory package, possibly returned to the October 25 agenda...

Delay Increasing Uncertainty for Obligated Entities in Third Compliance Period

What is frustrating for CLFP is that continued argument over this single issue, which may or may not occur, has jeopardized the efforts of the rest of the stakeholders and CARB to amend the regulation in a timely matter. Much needed amendments, such as leveling the third compliance period, are held hostage as well.

The increased costs of the third compliance period are affecting companies now; the loss of twenty- five percent of industrial assistance is happening now; the uncertainty that exists now continues to plague companies with compliance obligations from any reasonable future fiscal planning...

CONCLUSION

CLFP urges CARB to move the regulatory package as proposed as expeditiously as possible. The amendments contained in the proposed regulatory package are needed in order to provide the certainty that obligated entities require in order to plan for operations. CLFP members have invested substantial amounts of capital in compliance costs and new technologies in an effort to comply with the state's ambitious environmental goals. This regulatory package will provide the necessary certainty and balance going forward. (CLFP)

Comment:

That said, our main issue is the third compliance period. This -- we are in the middle of this now. Whereas 398 and all the issues associated with that are post-2020, we are now feeling the effects of the third compliance period as a medium leak -- leakage risk industry. It is interfering with our ability to be able to contract and to forecast going out. It creates uncertainty going forward, so we are in full sort of the Board's -- or the staff's position that we should level out the third compliance period and provide for a smooth transition going into 2020.

In terms of what we think is going to happen on that is that if you do that, we think it will -- one, it will immediately lessen the risk of leakage because that is always a factor for us no matter what, because of the other business factors that impact our ability to be able to maintain our competitiveness. We also think it will contribute to the overall stability of the program going forward.

We need to have some sense that this is a stable program, and 2020 is going to put a lot of burdens on us, and it's going to be much difficult -- more difficult to meet. And so we want to see, you know, that we're able to prepare in this early issue.

Finally, it will eliminate, like I said, the uncertainty associate with this and provide for more forecasting. (CLFP2)

Comment:

We just wanted to talk today, try not to be repetitious because there are a lot of speakers today, is that we really would like to focus on the third compliance period today, and that that smooth transition is really a big deal for us. We have a lot of other headwinds facing us right now, including the steel tariff. And so your consideration would be much appreciated and we fully support staff comments today. (PACCOASTPRODUCERS)

Comment:

I won't echo what John stated, other than we do support John's comments.

We all work together. There are a few of us here, but there are many more behind us who could not attend, and I wanted to make that point. As a producer, I'm here to tell you that I'm in the trenches, so to speak.

I know how the calculations work. I know the impact. I know the burdens.

And for the most part, I want to tell you that I do appreciate staff's assistance all the way in the past few years in addressing the cap-and-trade reporting and the program. Specifically, I wanted to congratulate the staff on the fact that on November 1st, you had 100 percent compliance with the surrender, which is quite an achievement. As a regulated entity, I can tell you that there's a great deal of anxiety until after that November 1st date passed, as you're watching it.

But having -- you know, we all have a sense of humor about it, so -- but I am here before you because our main concern is with CP3, the third compliance period.

As our marketing team and our company attempts to get a handle on the cost as we go forward, this third compliance period is critical to us. And it's for the transition in the post-2020. We support the regulation being adopted here today.

We support that provision of 100 percent leakage assistance.

And we want to remind the Board that 100 percent leakage assistance is in no way an abrogation of the responsibility that we have, or that the regulation puts upon us for reductions. You know, our goal is always to achieve our better from our benchmark from the competitiveness aspect of it. As we look at the benchmark, that's what we strive to exceed, so that we can do better as we go forward. And then from the cap adjustment factor, we realize that there are adjustments being made and we constantly have to improve our process...

We made the trip up here, specifically because this means a lot to us. (BOSWELL)

Comment:

CCEEB urges the ARB to:

- Maintain 100 percent Industry Assistance Factors for the 3rd Compliance Period

Protect California Jobs – Industry Assistance Factors (IAF)

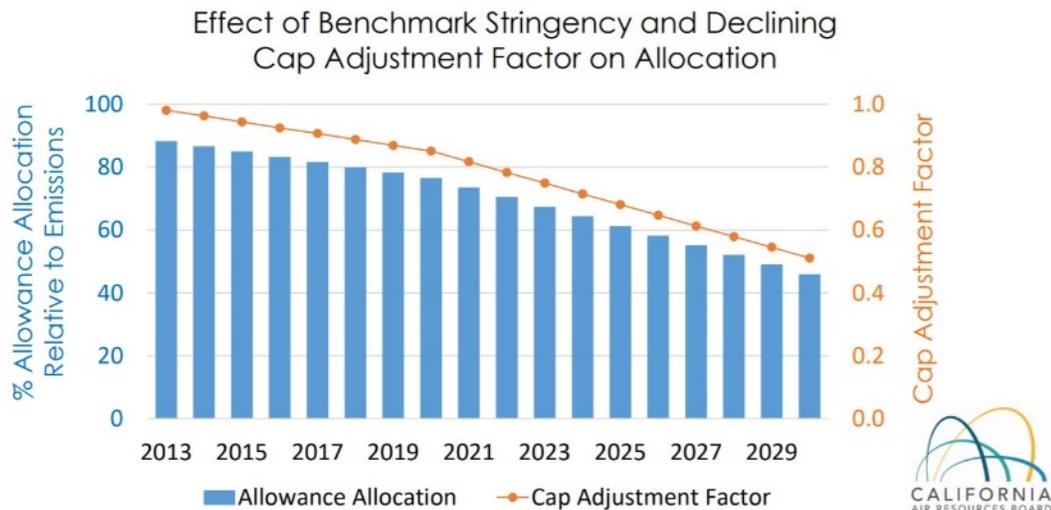
CCEEB agrees with the ARB's decision to maintain the industry assistance factors across the 3rd compliance period (CP3), required and imperative because;

- Providing a just transition – removal of industrial assistance for CP3 will shock the market and there is not enough time for compliance entities to plan for this change;
- Unnecessarily removing IAF that was negotiated as part of AB 398 is punitive;
- Trade protection is a part of most national, regional, and sub-regional programs;
- Carbon mitigation policies are not wide spread with major industrial competitors;
- Ease Transition into low carbon economy requires a steady and consistent price signal;
- CA's program covers more sectors than most and as such is undertaking a greater task;
- Trade exposed by all competitors not under an equally stringent program.

Industry assistance for trade-exposed companies is a simple method of protection to avoid losing the jobs, economic benefits, and environmental benefits of operations within California.

Avoiding environmental and economic leakage by supporting a just transition for compliance entities into a low-carbon economy is crucial, as facilities in California must comply with the most rigorous environmental standards from criteria pollutants, air toxics, greenhouse gases, and water quality while competing in increasingly global commerce. California businesses are trade exposed to any competitor that is not subject to a carbon price or is subject to a less stringent carbon policy. AB 398 set the industrial assistance factors in years 2021 to 2030 to that already existing for the 2015-2017 compliance period with this understanding, and Board Resolution 17-21 instructed staff to propose additional regulatory amendments to minimize emission leakage during CP3 in 2018-2020. The cap decline results in fewer allowances being distributed to covered entities year-on-year as the program progresses. As ARB’s workshop presentation³⁴⁰ shows, industries in California will increasingly be competitively disadvantaged as they must cover both the 10 percent “haircut,” which was an initial removal of industry assistance allowances, and because of the steep decline factor of the cap escalating down from 3 percent to 6 percent by the end of the 2030 period.

- By 2030, most industrial sectors will receive <50% of allowances needed to cover compliance obligations



The AB 398 intent and public debate that took place prior to its passage recognized the vulnerability of California industry in a global marketplace with competitors not subject to a carbon price. Furthermore, it creates an unnecessary disruption to the market without environmental benefits. The ARB and stakeholders have a responsibility to ensure that the market is stable year-to-year and not unnecessarily disrupted. The current IAFs for CP3 and through 2030 represent a smooth and steady decline that bridge the initial program with AB 398 and the increased stringency required to achieve the SB 32 goal.

³⁴⁰ https://www.arb.ca.gov/cc/capandtrade/meetings/20180426/ct_workshop_4-26-18.pdf

- Allowance budget and CAF decline faster in 2021 – 2030
 - 2013 - 2020: About 2% per year (15% cumulative)
 - 2021 - 2030: About 4% per year (36% cumulative)



In the absence of broad-based linkage, national, or international programs comparable to what exists in California, CCEEB supports the ARB recommendation to maintain industrial assistance factors as mandated in AB 398 during the 3rd compliance period. (CCEEB)

Comment:

We were urge the Board to follow the staff recommendations for the third compliance period assistance factors. We think that that's really going to be a really cost effective and a good program going forward. (CCPC2)

Comment:

California is a great place to grow tomatoes. The combination of warm dry summers, fertile soil, and available water make it one of only a few regions worldwide where this is true. Add to that farm transportation and processing infrastructure, plus the knowledge base in our university seed companies and technology industries, and you have the perfect mix. Farmers that are able to grow a huge quantity of tomatoes and pick them at the peak of ripeness and flavor. Processors take this bounty and turn it into tomato paste, diced tomatoes, and other products that allow so many worldwide to enjoy salsa, spaghetti sauce, ketchup, and let's not forget tomato soup. Processes in California have been working for decades to improve and optimize their operations, modifying processes, and modernizing equipment to maximize efficiency. Tomato processors here are world class and will continue to innovate into the future. But the processes that evaporate water to create tomato paste, along with the cooking and sterilization require large quantities of heat provided by burning natural gas to create steam. These processes are time-tested, safe, and ensure the can of tomato soup can be enjoyed and taste just as good on a cold winter night as a warm summer evening. In order to continue to supply products to all our customers, it is vital that we keep prices under control. Things like the rising cost raw materials for packaging, transportation, and labor are challenges we constantly work to overcome, so that these customers can continue to enjoy a safe, nutritious, and affordable food. Our industry is in the forefront of the effort to deliver delicious meals from California's farm to forks around the world. The

Cap-and-Trade Program puts the cost on emissions to carbon to incentivize the technologies that will lead to a low-carbon future, but that transition will be difficult. Cities, states, and countries around the world are watching to see if California efforts to reduce GHGs can be achieved while still allowing our economy to prosper, and our way of life to endure. The stakes are incredibly high. And we must succeed to serve as an example to those who would follow, otherwise those efforts will be in vain. California cannot solve this problem alone. Some transitions to a cleaner future will be made more easily than others, and some sectors will be subject to more pressures along the way from competitors and areas that don't have the same commitment to GHG reduction. It is critical that those managing the program recognize the fact, and work to ensure the process is smooth and orderly as possible. That is why we believe it is important to extend the industry assistance levels for the third compliance period. That provides a buffer for our industry from international competitive pressures, and some areas where leakage could result in actually higher emissions. The Governor and legislature have now begun to implement programs with guidance and collaboration from food processors and State agencies to provide the funding to make our industry more efficient. And we're looking forward to a cleaner energy future.
(CAMPBELLSSOUP)

Comment:

In my testimony, I'd like to highlight some positive aspects of the draft package before you. And I'd also like to highlight a couple of areas where additional work needs to be done. So first, the positives. ARB staff has done really good work in analyzing the need to extend the second compliance period industry assistance factor to the third compliance period. Since 2005, CARBOB production capacity has been added in Asia and East Africa, increasingly demonstrating that California's refining sector is trade exposed. Extension of second compliance period industry assistance factors can help mitigate some of that trade exposure. We support CARB staff's proposal on this issue.
(WSPA4)

Comment:

First, I simply want to echo the comments by several industry folks regarding the excellent work that's been done on the... third compliance period. (CHEVRON)

Response: Thank you for the support. AB 32 and AB 398 require that CARB minimize leakage. As indicated in the Staff Report (see pages 60-63), setting industry assistance factors to 100 percent during the period 2018 to 2020 follows Board direction in Board Resolution 17-21, minimizes industrial emissions leakage, and prevents a temporary increase in compliance costs during the third compliance period that could inhibit some covered entities' ability to invest in GHG reductions and energy efficiency.

With respect to some commenters request that CARB set industry assistance factors to 100 percent for the period 2018 to 2020 as a separate, faster

rulemaking, CARB staff notes that this rulemaking was conducted in a thorough but timely manner. CARB publicly released the initial 45-day proposal on September 4, 2018, and the Board adopted the final proposal on December 13, 2018. The proposed amendments were adopted in an expeditious manner that conforms to all requirements of the Administrative Procedure Act.

Opposition to 2018-2020 Assistance Factors of 100 Percent

C-1.4. Comment:

(5) The IAF Should Not Be Adjusted to a Higher Level from 2018-2020.

CARB proposes to adjust the industrial assistance factor from 2018-2020. CEJA is strongly opposed to this recommendation, and requests that CARB does not adjust the 2018-2020 emission factors for several reasons.

AB 398 does not require this adjustment. In fact, AB 398 only provides direction to assistance factors commencing in 2021. Specifically, AB 398 requires CARB to:

Set industry assistance factors for allowance allocation commencing in 2021 at the levels applicable in the compliance period of 2015 to 2017, inclusive. The state board shall apply a declining cap adjustment factor to the industry allocation equivalent to the overall statewide emissions declining cap using the methodology from the compliance period of 2015 to 2017, inclusive.³⁴¹

Resetting the 2018-2020 assistance factors is not required by this statutory language, and it is inconsistent with previous CARB determinations that the assistance factors could be decreased. Industry has been aware of decreasing industrial assistance factors for the 2018-2020 compliance period for years. CARB has provided no concrete or substantive rationale for why the proposed IAF increase is needed, citing only the need for a “smooth market,” with no supporting analysis.

In addition, reducing the industrial assistance is an important way to ensure greater compliance with AB 197 and ensuring that the cap and trade program does not exacerbate environmental justice issues. In recent years, the total amount of free allowances has been nearly half of all the allowances.³⁴² If CARB continues to give away the majority of allowances under this program, it will undermine the state’s ability to prioritize direct emission reductions as mandated in AB 197. Furthermore, since a majority of facilities covered by cap and trade are located in disadvantaged communities,³⁴³ the allocation of IAF’s has a direct impact on disproportionately burdened communities. By increasing IAFs, it is contrary to the mandate of AB 197,

³⁴¹ Cal. Health & Safety Code § 38562(c)(2)(G).

³⁴² For example, in 2016, the total free allowances was 192,960,667 with a 4,781,633 true-up value, while the total allowances in 2016 was 382.4 million.

³⁴³ L. Cushing, et. al, A Preliminary Environmental Equity Assessment of California’s Cap-and-Trade Program (2016).

which directs CARB to prioritize direct emission reductions in overburdened communities. (CEJA)

Comment:

This comment letter calls attention to the following points... (4) CARB has not provided justification for raising the level of industrial assistance for the 2018-2020 period...

(4) CARB has not provided justification for a higher level of industrial assistance for the 2018-2020 period.

As we stated in our previous comments in March, CEJA is strongly opposed to raising the industrial assistance factor for the 2018-2020 period because AB 398 does not require it, it hinders AB 197 compliance, and CARB has not provided any substantive reason why it is necessary. As the Draft IEMAC report points out, CARB’s proposed change “does not explicitly provide [...] justification” and “the benefits of conferring subsidies in the form of free allowance allocation should be weighed against the potentially significant costs.”³⁴⁴ If CARB continues to give away the majority of allowances for free, as it has in the past, it will undermine the state’s ability to prioritize and result in actual direct emission reductions. We are disappointed that CARB has not reconsidered the allowance allocation issue. (CEJA)

Comment:

Industrial Assistance Factors

We refer the Board to our previous comments’ discussion of the proposed retroactive allocation of an additional approximately \$365,000,000 worth of allowances to some of the states’ largest polluters in many of the state’s most disadvantaged communities.³⁴⁵ Staff has provided no evidence that this change is needed to prevent leakage. Nor is there evidence that existing flexibility mechanisms within the program and these corporations’ world-historical profits are insufficient to ensure that they can reasonably be expected to comply with existing rules, for which the companies have had nearly a decade to prepare, and which have been through a full public process.

We strongly urge the Board to reject this harmful change to existing regulations, as the Legislature did when it chose not to adopt this requirement for the third compliance period in enacting AB 398, despite having the clear opportunity to do so. This recommendation is also directly contrary to the spirit of AB 197’s requirement that this Board prioritize “rules and regulations that result in direct emission reductions at large stationary sources” so that the cap-and-trade program would not result in a concentrating emissions at sources located in disadvantaged communities – sources

³⁴⁴ https://calepa.ca.gov/wp-content/uploads/sites/6/2018/10/Draft_Chapter_IEMAC_Annual_Report_Leakage_10-2018.pdf, p. 12.

³⁴⁵ See also the comments from nearly 1200 individual California residents opposing the proposal: https://www.arb.ca.gov/lispub/comm2/bcformltrlog.php?listname=ct-4-26-18-wkshp-ws&comment_num=3&virt_num=1.

like those that would benefit from this proposed retroactive rule change and additional subsidy.

The Board should reject this recommendation as wholly unjustified, demonstrably contrary to the basic concept of the cap-and-trade program's incentive structure, injurious to the state's ability to invest in pollution reduction measures.

Attachment 1: October 12, 2017 Workshop Comments

1. CARB should adopt market rules that will help to ensure that the ambitious level of emissions reductions reflected in the scoping plan are actually achieved and that the State achieves both cumulative and annual emissions reductions in a manner that complies with SB 32 and AB 197

C. CARB Should Fully Utilize Available Authority to Ensure Emissions Reductions Occur at Major Stationary Sources and from Mobile Sources to Ensure Consistency with AB 197 Requirements.

As the demands on the cap and trade market increase, it is vital the CARB use the full range of tools available to it to ensure that the market functions effectively and efficiently. This includes basing policies designed to reduce leakage, to the extent possible on sound scientific and economic bases, and maximizing the benefits of complementary policies such as the Low Carbon Fuel Standard.

a. CARB should provide a sound and transparent basis for evaluating changes to policies to prevent leakage

While AB 398 requires CARB to provide high Industrial Assistance Factors (IAF's) for certain industries, to the maximum extent possible, CARB should, to the extent it continues to provide free allowances as a means of reducing leakage, based these allocations on actual leakage risk. To the extent that CARB provides free allowance in excess of this level, both under current final regulations and in the post-2020 period, vital funds are diverted from emissions reduction programs supported by the GGRF, and directed instead to industrial emitters, who will have less incentive to invest in pollution reduction technologies in the near term. Polluters who receive excess free allowances may redirect those funds into banking additional allowances, further undermining the efficacy of the cap and trade market.

While CARB staff is required, under Board Resolution 17-21 to propose regulatory amendments to provide free allowances to industrial polluters "by using the same assistance factors in place for 2013 through 2017,"³⁴⁶ the Board should be provided with sufficient context and information to evaluate the effects of and any need for this change to current final regulations, which were developed on the basis of significant research and public comment. If the change will provide preferential treatment for certain industries and divert needed funds from the GGRF, the Board should have a

³⁴⁶ <https://arb.ca.gov/board/res/2017/res17-21.pdf>, p. 14.

robust basis for weighing these tradeoffs against the potential leakage risk, if any, that is mitigated by this change to current regulations.

There is, as yet, no evidence in economic literature to support the idea that preventing leakage requires a 100% IAF in every at-risk industry. When presenting this potential regulatory amendment to the Board, CARB should:

- Evaluate actual leakage risk from maintaining current regulation setting third compliance period IAFs
- Evaluate what, if any leakage is mitigated by changing the existing regulation
- Recommend a research plan, to be carried out over the next few years, to better characterize and quantify leakage risk under the cap and trade program.
- Quantify the costs to California from lost GGRF revenues and the corresponding financial value of the additional allocation to industrial polluters that will benefit from the regulatory change
- Report these costs and changes, if any, to leakage risk to Board when responding to requirements of board resolution 17-21.

Attachment 2: March 2, 2018 Workshop Comments

4. CARB Should Maintain Current Industrial Assistance Factors Until 2021 and Re-examine Benchmark Factors for 2021-2030

CARB has not yet identified any rational basis for changing the industrial assistance factors (IAFs) for the current compliance period. The Discussion Draft and Presentation assert, without support, that altering current regulations represents a “conservative” approach and provides polluters with a “smooth path” to their post-2020 allocation levels. Neither document provides any evidence or even conjecture that this change is needed or useful to counter emissions leakage. In the absence of strong evidence of need to ensure the environmental integrity of the cap and trade program, CARB should not allocate additional free allowances to these polluters, many of which operate in some of California’s most polluted and most-disadvantaged communities. This action therefore runs directly contrary to the intent of AB 197, which directs CARB to prioritize pollution reductions in these communities, not give these polluters additional leeway at the expense of other market participants.

Polluters that would benefit financially from the proposed change in existing final regulations are currently operating under the existing IAFs, which are already higher than CARB’s analysis shows is needed to prevent leakage, and they have the expectation of the post-2020 IAFs required by AB 398. Neither the statute nor market conditions indicate any need for a change to current regulations. The legislature had every opportunity to require this change, and chose instead to maintain existing regulation for the current period, and to implement changes only after 2021.

It is unconscionable for CARB to consider an action so clearly contrary to the intent of both AB 398 and AB 197 to adjust the current rules merely for the sake of being able to

draw a straight line on a graph to provide a “smooth path,” as is done in Staff’s presentation on this topic.

Staff’s repeated reminders that the IAFs do not relieve covered entities of their entire compliance obligation and that the proposed increase in free allowances is relatively small proportion of the entire allowance market are irrelevant to the question as to whether the current regulations should be changed to provide these polluters with additional free allowances. The same rationale could equally justify giving free allowances to any entity for any reason. Unless Staff can provide strong evidence that current factors are resulting in leakage that would be mitigated by increasing the free allowances polluters receive, there is no basis for changing the current allocation.

Staff has also indicated that with additional free allowances, these sources will have more capital on hand which may be invested in pollution reductions, but has provided no evidence that capital availability is a constraint on pollution reduction investments or that these source intend to use the value of additional free allowances to make these investments. These sources have not made any binding commitments to invest the value of additional free allowances in pollution reduction projects and nothing in the staff proposal would compel them to do so. It is just as likely that the additional free allowances will be spent on shareholder profits, lobbying, executive compensation, or any other unspecified corporate expenditures.

If the proposed change takes place, there is no evidence they will do anything to prevent leakage or incentivize pollution reductions. With current market prices at or near the auction reserve price, they also do little to nothing to shield California consumers from any price impacts. Rather, they will only serve to divert over \$300 million worth of allowances and the associated revenue they would raise at auction away from investments in pollution reductions and other community resilience investments. This money would instead go directly into the hands of the very polluting industries whose impacts that money should go towards abating.

The Board has directed Staff to propose this change, and Staff has no choice but to follow the Board’s direction. Nevertheless, Staff should fully inform the Board that the change to the current regulations is unnecessary, not required by statute, and counter to the intent of the cap and trade program so that the Board may make an informed decision to reject the change. (NEXTGEN)

Comment:

Second, the proposed revision to the current regulations to provide an additional subsidy of \$365 million primarily to oil refineries through the change of the industrial assistance factors from current levels at 75 percent to 100 percent for the third compliance period. It's not based really on any assessment of leakage risk. There's virtually no risk of -- to -- of leakage from oil refineries.

And that change would come at the expense of GGRF revenue that's badly needed to actually provide emissions reductions and undermine the effectiveness of the Cap-and-Trade Program to incentivize reductions at those direct sources. We ask that that proposal be rejected, and that would be in greater conformity to AB 398, where the legislature had the opportunity to consider this change and rejected it, as well as AB 197, which directs the Board to prioritize direct emission reductions at major sources. (NEXTGEN2)

Response: The commenters propose that CARB not revise industry assistance factors for low- and medium-risk sectors to 100 percent for the third compliance period (CP3), 2018 through 2020.

AB 32 and AB 398 require that CARB minimize leakage, and free allowances are allocated to industry to mitigate against emissions leakage. Leakage risk is captured in the allowance allocation calculation as an assistance factor (AF), which scales allowance allocation with the level of leakage risk for each industrial sector. When the Program was initially designed, AFs were set at 100 percent and were proposed to drop each compliance period to reflect the expectation that the phasing in of carbon pricing or carbon regulations in other regions would lessen leakage risk. For all industries, the risk of emissions leakage declines when trading partners adopt programs with similar stringencies such that companies in other jurisdictions incur comparable GHG emissions costs. Thus, when trading partners adopt GHG programs, allowance allocation to minimize leakage risk should be correspondingly reduced to reflect the reduced leakage risk.

AFs were 100 percent for all sectors for the first two compliance periods of the program (2013-2017). The current Regulation's 2018-2020 assistance factors are 100% for high leakage risk sectors, 75% for medium, and 50% for low. AB 398 has mandated AFs at 100 percent 2021-2030. Therefore, retaining the current 2018-2020 AFs would lead to a three-year drop in AFs for many facilities, temporarily lowering allowance allocation to these facilities and more than doubling their compliance costs before 100 percent AFs for all facilities are restored in 2021. This could disrupt markets and increase compliance costs in a way that could inhibit some covered entities' ability to invest in GHG reductions and energy efficiency. This increase in compliance costs would come at a time when the cap adjustment factor rate of decline is accelerating from about two percent per year from 2013 to 2020 to about four percent per year from 2021 to 2030.

Setting AFs at 100 percent for all industrial entities in the first five years of the Program reduced leakage pressures and preserved the business competitiveness of California industry while achieving California's 2020 GHG emissions reduction goal. In addition, contrary to assertions by the commenters, AB 398 did not restrict CARB's ability to modify provisions related to the third

compliance period. Rather, AB 398 addresses only Cap-and-Trade Program features in the post-2020 period. In approving AB 398, the Legislature re-emphasized the importance of protecting against emissions leakage by setting AFs at 100 percent for all years 2021 to 2030. For budget years 2018 to 2020, Board Resolution 17-21 directs staff to "... propose subsequent regulatory amendments to provide a quantity of allocation, for the purposes of minimizing emissions leakage, to industrial entities for 2018 through 2020 by using the same assistance factors in place for 2013 through 2017."

Given AB 398's requirement that CARB set AFs at 100 percent post-2020, the critical importance of California's economic health as the State seeks to achieve SB 32's GHG emissions reduction targets, the much deeper reductions needed in the next decade, and the fact that carbon pricing policies are not yet widely adopted in other jurisdictions, a conservative approach to minimizing leakage is warranted. Raising CP3 AFs to 100 percent is the best approach to protect against emissions leakage and enable earlier investments to achieve onsite emissions reductions at industrial facilities. Therefore, CARB is setting 2018-2020 AF values for all industrial sectors to 100 percent in Table 8-1.

A 100 percent AF does not mean businesses are freely allocated all the allowances needed to comply with the Program. Allocated allowance levels drop every year according to the cap adjustment factor, and businesses still need to reduce emissions onsite or acquire additional allowances to comply with the Program. By 2030, allowance allocation to industrial covered entities is forecasted to be about half of what it is today, and on average free allocation will provide less than half of the allowances needed for compliance in 2030. Contrary to assertions by the commenters, CARB does not give away the majority of allowances for free. Currently, about 15 percent of the total annual allowance budget is provided to industrial facilities for emissions leakage prevention and transition assistance. Approximately 35 percent of allowances are allocated each year to electrical distribution utilities and natural gas suppliers for the purpose of benefitting their ratepayers.

Finally, with respect to commenters' assertions that increasing the AF to 100 percent for 2018-2030 will impact CARB's ability to comport with AB 197, CARB staff disagrees that the proposed amendments conflict with AB 197. As indicated in Chapter VII of the Staff Report, AB 197 (AB 197, Garcia, Chapter 250, Statutes of 2016) provides that, when adopting rules and regulations pursuant to Division 25.5 of the Health and Safety Code to achieve emissions reductions beyond the 2020 statewide greenhouse gas limit, CARB shall follow the requirements in Health and Safety Code section 38562(b), consider the social costs of the emissions of greenhouse gases, and prioritize emissions reduction rules and regulations that result in direct emission reductions from various

sources. The proposed amendments are wholly consistent with these considerations pursuant to AB 197.

CARB designed the Cap-and-Trade Regulation taking into account section 38562(b).³⁴⁷ The amendments retain and modify the major elements of the Regulation, including those features bearing on section 38562(b) considerations.

CARB also considered the social costs of GHG emissions and prioritized emissions reduction rules and regulations that result in direct emission reductions from various sources when it proposed the present regulatory amendments and promulgated amendments in 2017 to extend the Cap-and-Trade Program post-2020. In particular, the post-2020 declining cap acts to constrain and reduce emissions across approximately 80 percent of California's GHG emissions sources to help achieve the 40 percent below 1990 level target in 2030. The adopted amendments also reduce the quantitative usage limit. As designed, the Regulation will ensure GHG emission reductions occur within California that may also reduce criteria pollutants and toxic air contaminants.

The industrial AFs for the 2018-2030 period are also consistent with these AB 197 considerations. As such, ARB staff declines to incorporate the commenters' views that the amendments should not move forward.

Benefits vs. Costs of Lower Assistance Factors for 2018-2020

C-1.5. Comment:

4. CARB should include potential reductions and associated benefits in its analysis of 2018- 2020 Industry Assistance Factors, rather than focusing solely on costs to polluters, and lower the Industry Assistance Factors, in particular, for refineries.

CARB proposes to maintain Industry Assistance Factors of 100% for all industries through 2020, given that AB 398 mandates 100% Industry Assistance Factors beginning in 2021. CARB submits that this will facilitate a smooth transition to a post-2020 regulatory structure, and that it protects against emissions leakage, enables earlier investments in onsite equipment upgrades, allows for economic growth, and will not increase compliance costs to polluters over that period.³⁴⁸ CARB also indicates that lower Industry Assistance Factors would not be necessary to achieve the reductions currently expected from those sectors over the 2018-2020 period. However, CARB still failed to assess the implications for increased reductions and associated benefits.

We urge CARB to analyze the potential for lower Industry Assistance Factors for the 2018-2020 period to increase real reductions and associated benefits during that period

³⁴⁷ See Proposed Regulation to Implement the California Cap-and-Trade Program, Staff Report: Initial Statement of Reasons, at II-50 - II-53 (2010), *available at*: <https://www.arb.ca.gov/regact/2010/capandtrade10/capisor.pdf>.

³⁴⁸ ISOR, p. 62.

and in the years after 2020. For example, a lower Industry Assistance Factor would raise the cost of emissions in the refinery sector for the next two years, providing an incentive for on-site reductions over that period, including equipment upgrades that would continue to provide real reductions in GHG emissions and co-pollutants on an ongoing basis after 2020. We recommend that the Industry Assistance Factors decline for the 2018-2020 period.

We single out refineries here because AB 398 prohibits CARB from adopting any GHG regulation other than cap-and-trade for petroleum refineries and oil and gas production facilities through 2030. In addition, AB 398 prohibits local air districts through 2030 from “adopting or implementing an emission reduction rule for carbon dioxide from stationary sources that are also subject to a specified market-based compliance mechanism.” Thus, refineries present a special situation in which options for inducing GHG emission reductions are extremely limited, making it necessary to optimize the reductions achieved through cap-and-trade.

A lower Industry Assistance Factor would raise the cost of emissions in the refinery sector for the next two years, providing an incentive for on-site reductions over that period, including equipment upgrades that would continue to provide real reductions in GHG emissions and co-pollutants on an ongoing basis after 2020. (CENTERBIODIV)

Comment:

3. Increase in Industry Assistance Factors in third compliance period

AB 32 and AB 398 require that CARB act to reduce GHG emissions while minimizing emissions leakage. To this end, free allowances are allocated to industrial emitters on the basis of their industrial output and leakage risk. As we note above, emissions-leakage-mitigating subsidy levels should ideally reflect the GHG emissions in external jurisdictions that are avoided when production activities remain within California.

CARB categorizes covered industrial sectors operating under specific NAICS codes as either high, medium, or low leakage risk. To calibrate the output-based subsidy, CARB uses the product of an industry-specific emissions benchmark and an “industry assistance factor” (IAF) to determine the number of allowances allocated to industries per unit of production. The IAF assigned to high, medium, and low risk industries has changed over time (see Table 1).

Table 1: Industry assistance factors in CARB regulations

Leakage risk	First Period (2013-2014)	Second Period (2015-2017)	Third Period (2018-2020)	Fourth Period (2021-2023)
2010 Regulation (Original rules) (CARB, 2011: Table 8-1)				
High	100%	100%	100%	N/A
Medium	100%	75%	50%	N/A

Low	100%	50%	30%	N/A
2013 Regulation (Current rules) (CARB, 2014: Table 8-1)				
High	100%	100%	100%	N/A
Medium	100%	100%	75%	N/A
Low	100%	100%	50%	N/A
2018 Regulation (Proposed rules) (CARB, 2018b: 59-64)				
High	100%	100%	100%	100%
Medium	100%	100%	100%	100%
Low	100%	100%	100%	100%
Legal authority:	CARB determines how to minimize leakage risks pursuant to AB 32			AB 398 requirement

As we note above, output-based permit allocation to targeted industries shifts abatement cost burdens to unsubsidized sectors and increases the costs incurred within California to meet California’s GHG reduction goals. Given these side effects, production subsidies should be judiciously targeted. If the legal requirement is to mitigate varying degrees of emissions leakage risk, changes to the calibration of IAFs should be justified on the basis of analysis and empirical evidence on foreign emissions intensities and trade responsiveness within targeted sectors (see Section Assessing Leakage Risk of this report). In our judgment, the analysis offered in the proposed regulations does not explicitly provide such a justification. If instead the proposed change in free allocation is also intended to serve broader re-distributional purposes, a broader set of considerations may guide the targeting of production subsidies, including policy judgments that lie outside of this subcommittee’s scope. In either case, the subcommittee believes that the benefits of conferring subsidies in the form of free allowance allocation should be weighed against the potentially significant costs. (IEMAC)

Response: The commenters propose that CARB undertake additional analyses to determine the potential emissions reductions and other impacts associated with maintaining third compliance period (CP3) assistance factors (AFs) for low- and medium-risk sectors at levels in the current Regulation versus the proposal to raise to 100 percent CP3 AFs.

Board Resolution 17-21 directs staff to “... propose subsequent regulatory amendments to provide a quantity of allocation, for the purposes of minimizing emissions leakage, to industrial entities for 2018 through 2020 by using the same assistance factors in place for 2013 through 2017.”

The methodology that CARB used to evaluate leakage risk for covered industrial sectors is described in Appendix K to the 2010 Cap-and-Trade Regulation Staff

Report,³⁴⁹ which has been incorporated by reference as part of the Staff Report to this rulemaking. CARB combined independent assessments of trade exposure and emissions intensity to classify sectors into leakage risk categories, and through past rulemakings has continued evaluating improvements to the metric to better incorporate interstate trade exposure. Further, CARB has evaluated leakage risk extensively, including through multiple research contracts to develop analytical tools and assess available data to monitor for leakage and further assess leakage risks.

In the April 25, 2018 public workshop, CARB presented an allowance allocation example for a medium risk sector and chose refineries because they represent the largest sector in the medium leakage risk category. Refineries are also fuel suppliers that face compliance obligations for the carbon contained in the fuels they sell. Fuel suppliers receive no free allocation. Considering the direct onsite emissions plus the emissions associated with supplied fuel, the average refinery faces a 10.8 million MTCO_{2e} compliance obligation annually, and allocation with 100 percent AF covers approximately 15 percent of that obligation. This translates to hundreds of millions of dollars for compliance costs each year for the refining sector.

There are other sectors within the medium- and low-leakage risk categories, such as food processors and steel producers, that will also receive added protection from leakage from an increase in CP3 AFs. It is important to remember that these sectors not only face direct compliance costs, but also have some increases in their shipping and energy costs due to those sectors being under the cap.

The objective of industrial allowance allocation is to minimize emissions leakage in industrial sectors. CP3 is an especially important period to ensure that covered entities have sufficient means to prepare for GHG reductions needed under the post-2020 Program, which has a more aggressive target. In 2013-2020, the overall allowance budget reduces by about two percent annually, and in 2021 to 2030, the rate of decline doubles to about four percent annually and 40 percent cumulatively by 2030. The cap adjustment factor used to calculate allocation declines in proportion to the caps, meaning that allocation to covered industrial entities will decline more rapidly after 2020.

Following precedent of CARB taking a conservative approach with respect to minimizing emissions leakage, keeping in mind the Legislature's direction to use 100 percent AFs for the decade 2021-2030, and per Board direction, CARB is setting 2018-2020 AFs to 100 percent for all industrial sectors. See also Responses to 45-Day Comments C-1.3 and C-1.4. CARB also notes that AB

³⁴⁹ California Air Resources Board. 2010 Proposed Regulation to Implement the California Cap-and-Trade Program, Staff Report: Initial Statement of Reasons, Part I, Volume IV, Appendix K: Leakage Analysis. <http://www.arb.ca.gov/regact/2010/capandtrade10/capv4appk.pdf>

398 requires CARB to report to the Legislature, by December 31, 2025, on the progress toward meeting the greenhouse gas emissions reduction targets established pursuant to AB 32 and SB 32 and the leakage risk posed by the Regulation. In making this report, AB 398 requires CARB to include recommendations to the Legislature on necessary statutory changes to the Program to reduce leakage, including the potential for a border carbon adjustment, while maintaining the state's ability to reach its targets.

Further, staff believes the IEMAC is in a unique position to also evaluate and recommend alternative metrics to track leakage in industrial sectors or alternative methods to assess changes in leakage risk. Staff looks forward to any additional suggestions the IEMAC can provide on this topic as the issue falls within the general scope of evaluating the economic and environmental performance of the Program.

Early True-Up Allocation for 2018 and 2019 with Change in Assistance Factors

C-1.6. Comment:

Upon approval of the second period industry assistance factors to the third compliance period, there will be a need for CARB to make a true-up correction to allocation for calendar years 2018 and 2019. The current regulation already has provisions to accomplish this. WSPA appreciates the flexibility already built into the Regulation. Section 95870(e)(1) – Disposition of Vintage 2013-2020 Allowances, Allocation to Industrial Covered Entities – states “The Executive Officer will allocate allowances to each eligible covered entity by October 24 of each calendar year 2014-2019 for allocations from 2015-2020 annual allowance budgets.” There is nothing in the regulation that prohibits this action earlier in the year. This is a special circumstance that justifies such an early action by CARB. WSPA requests that CARB use the flexibility already built into the regulation and provide a true-up allocation to correct for 2018 and 2019 vintages by June 1, 2019. WSPA believes this can be done without regulation change and asks that CARB build this into 2019 plans and provide appropriate guidance. (WSPA2)

Comment:

Allocation True-Up

Third Compliance Period Industrial Allocation True-Up Correction: Upon approval of extending the second period industry assistance factors to 2018-2020, there will be a need for CARB to make a true-up correction to allocation for calendar years 2018 and 2019. The current regulation already has provisions to accomplish this feat. We appreciate the flexibility already built into the Regulation.

Section 95870(e)(l)-Disposition of Vintage 2013-2020 Allowances, Allocation to Industrial Covered Entities - states "The Executive Officer will allocate allowances to each eligible covered entity by October 24 of each calendar year 2014-2019 for allocations from 2015-2020 annual allowance budgets." {emphasis added} There is nothing in the regulation that prohibits this action earlier in the year. This is a special circumstance that justifies such an early action by CARB.

It is important that CARB provide this one-time early true-up correction for 2018 and 2019 allocation as soon as possible because 1) it provides earlier certainty for planning, 2) it eliminates the need for qualifying statements on Cap-and-Trade program financial obligations in corporate financial statements and 3) it potentially frees up funds for earlier investment in GHG reduction.

Recommendation: Phillips 66 requests that CARB use the flexibility already built into the Regulation and provide the Industrial Allocation Factor correction for 2018 and 2019 vintages by June 1, 2019. We believe this can be done without regulation change and ask that CARB plan on this action and provide corresponding guidance. (PHILLIPS66)

Response: The commenters request an early true-up allocation for vintage 2018 and 2019 allowance allocation but do not request any change to the Regulation. Pursuant to the adopted amendments, CARB intends to maintain the existing schedule for initial allocation and true-up allocation. Pursuant to the adopted amendments, initial vintage 2018 allowance allocation will be trueed up with vintage 2020 allowance allocation in fall of 2019, in time for the 2018 annual compliance obligation (i.e., 30 percent of 2018 covered emissions) due on November 1, 2019. Similarly, initial vintage 2019 allowance allocation will be trueed up with vintage 2021 allowance allocation in fall of 2020, in time for the 2019 annual compliance obligation due (i.e., 30 percent of 2019 covered emissions) on November 1, 2020.

The vintage 2018 and 2019 initial allowance allocations, which have already been distributed using assistance factors in the current Regulation, enable entities to adequately plan for the annual surrender deadlines in 2019 and 2020, which require retirement of only 30 percent of covered emissions from the prior year. Further, the current standard schedule to provide true-up allocation is already timely for meeting these annual surrender deadlines.

Moreover, staff disagrees that a partial true-up allocation based on updated assistance factors, and not updated product data, is clearly allowable under the Regulation. Staff would not have the verified product data needed to provide true-up allocation pursuant to the equations in the Regulation. Even if such an additional early true-up allocation were allowable, conducting an additional true-up allocation early and outside of the normal schedule would be administratively burdensome and disruptive to CARB's accounting and record-keeping.

infrastructure for allowance allocation. As such, CARB has not made any changes to the timing of the true-up allocation provisions.

Adjusting Post-2020 Benchmarks

C-1.7. Comment:

Attachment 2: March 2, 2018 Workshop Comments

4. CARB Should Maintain Current Industrial Assistance Factors Until 2021 and Re-examine Benchmark Factors for 2021-2030

In addition to maintaining the existing IAFs in current regulation, Staff should examine potential adjustments to industrial allocations in the 2021 to 2030 period. The current benchmark factors, for example, were set based on data that reflected industry practice that may no longer be current. CARB should fully examine current practice and recent technological advancements, and if appropriate, adjust the benchmark factors accordingly. (NEXTGEN)

Response: The commentor recommends updates to product-based benchmarks for calculating industrial allowance allocation in the 2021 to 2030 period. This comment is outside the scope of the current rulemaking because no benchmarks in Table 9-1 of the Regulation have been proposed for amendment as part of this rulemaking. CARB expects to reconsider benchmarks in a future rulemaking to reflect the most recent efficiency data for industrial sectors. As emissions have been subject to a compliance obligation since 2013, it is reasonable to expect industries will become more efficient in response to this Program and other energy-related policies in the State.

Any staff efforts to reevaluate benchmarks will be part of a public process. Additionally, CARB expects to develop a methodology to provide additional allowance allocation to industrial covered entities to minimize potential leakage resulting from increased energy costs. CARB did not calculate initial benchmarks to include the emissions associated with purchased electricity because it was not clear how electrical distribution utilities (EDUs)—especially investor-owned utilities (IOUs), which are regulated by the California Public Utilities Commission (CPUC)—would set industrial electricity rates under the Program. Instead, CARB has allocated allowances to EDUs for the emissions associated with electricity purchased by industrial covered entities. After the calculation of initial energy- and product-based benchmarks in 2011, CPUC has since required all IOUs to pass through carbon costs to all ratepayers, including industrial entities.

SB 1018 requires CPUC and the IOUs to return IOU-allocated allowance value (from their allocated allowance auction proceeds) to industrial entities. CPUC has chosen to require that IOUs return this value to industrial entities using product- and energy-based benchmarks comparable to ARB's benchmarks. This

process has been slow to implement, and CPUC has requested that CARB directly allocate allowances to industrial covered entities to cover the carbon cost associated with their purchased electricity. CARB staff supports this request. Having a single agency distribute this value will ensure that allocation is done in a manner that is timely and consistent with the Regulation, and it will ensure that industrial covered entities that are customers of publicly owned utilities (POUs) and electrical cooperatives (co-ops) are provided the same leakage protection as IOU customers (as SB 1018 does not apply to POU and co-op industrial customers).

Support for Additional Allocation

C-1.8. Comment:

Lastly, CMTA supports the discussion of additional industry assistance to protect against emission leakage related to high-energy costs. This will help protect cleaner, more efficient California manufacturers. (CMTA3)

Response: Thank you for the support.

Request for Alternate Cap Adjustment Factors for Certain Sectors

C-1.9. Comment:

Cap Adjustment Factors (CAF)

CLFP continues to urge CARB to ensure that flexibility is a prominent part in the application of the cap adjustment factor analysis. The cap decline, beginning in 2021, is severe enough in and of itself to justify eliminating the both the CAF and the 10% stringency factor. Many food processors will see their actual allowance allocations drop below 50% by 2030 despite an assistance factor of 100%. The loss of allowances to this degree will likely increase the risk of leakage, the very harm that the cap-and-trade is designed to mitigate.

Coupled with increasing compliance and operational costs attributable to other market and supply factors, the CAF will nullify the effectiveness of cost containment goals and continue to threaten California's food processing industry well into the next decade.

In the proposed amendments CARB has provided some covered facilities the opportunity to address their current CAF. However, CARB continues to limit the CAF adjustment consideration to only process emissions. While that may have been acceptable under the current cap-and-trade regulation, the doubling of the cap decline factor after 2020 demands a reassessment of the impact of SB 32 on existing industries, possibly on a subsector basis, in order to get a better understanding of the impact on industries such as food processors.

When considering the food processing sector in California, it is important that CARB recognize and acknowledge that the greenhouse gas emissions from this sector

represent less than one-half of one percent of the total state-wide greenhouse gas emissions. Left as is, the imposition of the current CAF will impose an unnecessary economic burden on the food processing sector and, through them, the communities in which they operate. Communities, that for the most part, have been identified as disadvantaged under the CalEnviro Screen.

Clearly, legitimate cost containment efforts will require some form of detailed economic assessment of the impact of the CAF on the food processing sector that will occur as the result of the loss of allowances engendered through the application of the CAF. This impact needs to be determined in order to inform the development of the evaluation criteria that will determine eligibility for an alternate CAF. CLFP continues to support the development of a CAF economic analysis aimed at determining the impacts of the CAF on specific sectors by 6-digit NAICS designation. (CLFP)

Comment:

I will be brief and just align our comments with our colleagues from the food processing industry and our colleagues from the dairy industry that will speak later. We are comfortable with many of the cost-containment provisions in this amendment, but we continue to be concerned with the cap and the level and expense of that cap. And as our members are vulnerable to leakage and out-of-state competition, this is a very important issue for us. (AECA)

Response: The comments recommend broadening the sectors eligible for the alternate cap adjustment factors in Table 9-1. Board Resolution 17-21 directs staff to "...evaluate and propose, as necessary, post-2020 cap adjustment factors consistent with the methodology used in 2015-2017 allocation calculations for sectors that have been determined to be highly trade exposed with highly emissions intensive products that have greater than 50 percent process emissions." CARB evaluated eligibility for post-2020 alternate cap adjustment factors (CAF) for covered sectors using the same criteria as used for the period 2015-2017: high leakage risk classification, high emissions intensity, and process emissions greater than 50 percent of total emissions. Covered sectors that meet these criteria are at an especially high leakage risk and have more limited options for reducing the emissions intensity of their processes. The reduced rate of decline in the alternate cap adjustment factors for these sectors as compared to the standard cap adjustment factors effectively accounts for the process emissions from these industries. CARB calculated the post-2020 alternate CAFs using the same method as applied for the period 2015-2017, which was setting the rate of decline equal to half the rate of decline for standard CAFs.

The purpose of industrial allowance allocation is to provide transition assistance and leakage prevention to energy-intensive, trade-exposed industry. For most industrial entities, three factors are used in conjunction with an entity's reported

annual output to calculate the amount of allowance allocation: a product-based benchmark, an assistance factor, and a cap adjustment factor. The comments support the Board's decision to increase assistance factors to 100 percent in the third compliance period (45-Day Comment C-1.3), but also request eliminating the cap adjustment factor and changing benchmarks. As indicated in Response to 45-Day Comment C-1.7, updating benchmarks is outside the scope of the current rulemaking.

The cap adjustment factor and the stringency used to develop benchmarks are necessary to carry out a program that protects industry from leakage and maintains incentives to continue GHG emissions reductions. The benchmark stringency rewards entities that have undergone early actions to reduce emissions. CARB developed this approach to benchmark stringency after careful analysis of California emissions intensity data and approaches used in other climate programs. In selecting the 90 percent benchmark stringency, CARB balanced the need to provide adequate transition assistance and to minimize leakage with meeting the emission reduction goals of AB 32 and SB 32 and preventing windfall profits through excessive free allocation.

The cap adjustment factor rate of decline aligns with the allowance budget rate of decline to ensure that emission reductions are equally incentivized amongst all sectors.

Leakage risk classification alone does not qualify an industry for alternate cap adjustment factors. In accordance with Board Resolution 17-21, CARB re-evaluated all industrial activities against the criteria of high leakage risk classification, high emissions intensity, and greater than 50 percent of total emissions from process emissions and made appropriate updates to the cap adjustment factors in Table 9-2 of the Regulation for entities that meet these criteria. As such, CARB declines to eliminate the cap adjustment factor as requested by the commenter. However, see Response to 45-Day Comment C-1.5 indicating that CARB will continue to monitor leakage and submit a report to the Legislature pursuant to AB 398.

Additional Industrial Sectors in Table 8-1

C-1.10. Comment:

Finally, the ARB should consider (in the context of this rulemaking) additional NAICS codes that may be eligible for free allocation as Emissions Intensive Trade Exposed ("EITE") industries...

2. The ARB Should Commit to a Comprehensive EITE Study And Confirm The Availability of True Allocations Because The Proposed Regulations Arbitrarily Designate Companies As Trade Exposed.

During the pre-rulemaking phase of this proceeding, Qualcomm submitted confidential business information demonstrating that it faces at least a medium leakage risk under the same standard as applied to other industries that have been designated as EITE since the inception of the Cap-and-Trade program. By not including a new EITE designation including Qualcomm's industry as EITE, Qualcomm remains concerned that the Regulations do not fully account for industries that face trade exposure risks under the Program. In other words, the ARB has arbitrarily designated some companies as being eligible for free allocations based on their status as manufacturing facilities, but has arbitrarily not included other industries that may be trade exposed, solely because they are not primarily engaged in manufacturing. Whether a company is primarily engaged in manufacturing is not dispositive of the trade exposure risks that company or sector may face.

As a matter of consistency, the ARB should evaluate new EITE designations for entities it may have overlooked in the initial EITE studies it prepared early in the Cap-and-Trade Rulemaking process. California's industrial sector is dynamic and ever-changing. It is also exposed to competition and trade exposure because other states do not place expensive GHG emissions controls on industrial activities. Many industries with emissions starting after 2012 were not studied for inclusion as EITE industries. In addition, companies that are trade exposed solely due to their electricity usage (and that have no direct emissions), may also face leakage risks due to the indirect GHG costs in electricity rates. The ARB should update its list of EITE entities to ensure that similarly situated companies within the industrial sector are treated comparably and the ARB achieves the statutory direction in AB 32 to minimize leakage risks. (QUALCOMM)

Response: The commenter requests that CARB provide allowance allocation to certain non-industrial research and development facilities. Since the inception of the Program, allowance allocation has been provided to emissions-intensive, trade exposed industrial sectors to minimize leakage and provide transition assistance. As discussed in the FSOR for the 2016 Regulation amendments,³⁵⁰ a key aspect of emissions intensive industries eligible for allocation is that they emit carbon as part of their core business process, as is the case for mining and manufacturing facilities. Facilities that operate in commercial sectors, such as technology and R&D facilities, do not typically emit carbon as part of a core business process.

Based on the information provided to CARB staff to date, the primary activity that generates GHG emissions at Qualcomm campuses covered by the Program is electricity generation. CARB also does not allocate allowances to electricity generators.

³⁵⁰ See Final Statement of Reasons, August, 2017, p. 192, available at <https://www.arb.ca.gov/regact/2016/capandtrade16/ctfinsor.pdf>

Since the inception of the Program, CARB has worked diligently with Qualcomm to assess various options to address leakage risk for Qualcomm campuses within the framework of the Program. In 2012, Qualcomm approached CARB to request adding a “but for” combined heat and power (CHP) exemption to the Program to provide transition assistance to facilities with emissions that would fall below the Program inclusion threshold “but for” their installation of CHP systems. CARB worked with Qualcomm to include this provision in the Program as part of the 2013 Cap-and-Trade Regulation amendments. Qualcomm’s Morehouse facility meets the requirements for the “but for” CHP exemption, and consequently emissions from the Morehouse facility are exempt from the Program; however, Qualcomm’s Pacific Center facility does not meet the eligibility requirements for the exemption. For more on the application of the “but for” CHP exemption to Qualcomm facilities, see Response to 45-Day Comment D-1.2.

CARB assessed whether the activities conducted at Qualcomm campuses may qualify for existing industrial allocation, but based on the data provided by Qualcomm to date, determined their activities were not compatible with the industrial allowance allocation provisions of the Program.

CARB has also worked with Qualcomm to better understand the economics of meeting their electricity needs by operating CHP units versus purchasing grid electricity. Qualcomm provided data to CARB suggesting that operating the CHP units is more expensive due to Program compliance costs. However, CARB staff’s analysis of the same data found that operating the CHP units is actually less expensive than purchasing electricity because Qualcomm’s analysis did not account for the savings associated with avoided electricity purchases, which results in large overall savings despite any direct Program compliance costs.

When determining the emissions intensity of a sector for determining leakage risk, CARB considers costs associated with both direct onsite emissions and indirect emissions from purchased energy like steam and electricity. CARB will continue to assess updated data related to allowance allocation, including for assessing leakage risk, in future regulatory amendments and CARB anticipates that more detailed reviews of this data and engagement with covered sectors will commence in 2019.

Leakage Prevention and Additional Analysis

C-1.11. Comment:

- Additional data collection and analysis is needed to refine and improve the current approach to calibrating and conferring output-based leakage mitigation compensation. As California’s GHG policies increase in stringency and ambition, the efficiency and distributional implications of any miscalibration of these subsidies become more significant...

Chapter 4: Emissions Leakage and Resource Shuffling Authors: Meredith Fowlie and Danny Cullenward

A. Leakage

The global nature of climate change creates challenges for California climate policy, which covers only a small subset of the sources contributing to the problem. This creates the potential for “leakage,” a concept that is most easily illustrated by example. Consider an industrial producer operating in California that is required to purchase GHG allowances to cover its emissions. As a consequence, suppose this producer becomes relatively less competitive in the global market and thus loses market share to its out-of-state competitors. This induces a shift or “leakage” of production—and associated emissions—from the California firm to its out-of-state competitors.

For the purposes of this report, it is useful to distinguish between different forms of leakage:

- 1) “**Emissions leakage**” refers to any change in emissions from sources not covered by the GHG policy or program that is caused by the GHG emissions policy or program. It is worth noting that leakage is a potential issue under any state climate change policy that increases operating costs of regulated entities, not just cap-and-trade. Leakage can also happen within California if there is excess capacity at in-state facilities that are exempt from the GHG regulations (e.g. industrial facilities that emit less than 25,000 tCO_{2e} of GHGs per year are not covered by the GHG emissions trading program).
- 2) “**Rent leakage**” refers to the transfer of profits from California entities to out-of-state producers that is induced by GHG regulations.

Minimizing emissions leakage caused by California’s climate change policies is a statutory requirement of AB 32 and an important design objective of the cap-and-trade program. Economists have thought carefully about the various channels through which emissions leakage can occur. For the purposes of this report, it is useful to distinguish between two related but conceptually distinct leakage channels.³⁵¹

- 1) **Trade-competitiveness channel:** Policy-induced increases in operating costs can cause industrial production (and associated emissions) to move to jurisdictions outside the reach of the regulation via trade flows.
- 2) **Fuel price channel:** If emissions regulations in a large open economy reduces demand for carbon-intensive inputs (e.g., fossil fuels), global input prices will fall and stimulate demand for these inputs in unregulated regions.

³⁵¹ The economics literature has also identified additional leakage channels via income effects and technology spillovers from induced innovation that can potentially induce “negative leakage” (see, for example, Gerlagh and Kuik 2014).

The conceptual distinction between these two channels is important for the assessment of leakage mitigation alternatives. Measures such as output-based permit allocations and border adjustments are designed to counteract the first channel. The second channel is much more difficult to mitigate or address.

Concerns about leakage loom large, so it is essential that California's cap-and-trade program incorporate a meaningful response to this problem. It is important to acknowledge California Air Resources Board's (CARB) pioneering work in this area. The output-based approach developed by CARB, which involves allocating production subsidies in the form of free permit allocation to those sectors deemed to be at leakage risk, has set a policy design example that other jurisdictions are studying and following. That said, the approach to determining the subsidy levels is increasingly set by political arrangement, rather than evidence-based analysis. In what follows, we acknowledge some of the formidable challenges that complicate leakage mitigation in practice, and point to critical knowledge gaps that could be usefully narrowed with additional data collection and analysis.

1. Assessing leakage risk

Correctly identifying the kinds of economic activities most at risk of carbon leakage is a critical first step in the design of effective risk mitigation (Fowlie and Reguant, 2018).

Here, we will focus on emissions leakage as this, along with "transition assistance", rationalizes free permit allocations to emissions-intensive industries.

There is a growing body of research in economics that assesses the potential for leakage risk across a range of sectors and contexts. One methodological approach uses multi-sector and multi-region computable general equilibrium (CGE) models calibrated to represent global trade linkages and energy flows. CGE models can, in principle, capture multiple leakage channels. A limitation is that results can be very sensitive to assumptions about key parameters, such as trade elasticities.³⁵²

An alternative method, called partial equilibrium analysis, involves empirically estimating parameters that determine the extent of leakage potential via the trade/competitiveness channel (see, for example, Fowlie et al., 2016). Intuitively, emissions leakage in a particular industry via the trade/competitiveness channel can be defined as the change in out-of-state production that is induced by California GHG policies multiplied by the emissions intensity of that foreign production:

$$\text{Emissions leakage} = \text{GHG}_{\text{out}} \times \Delta Q_{\text{out}}$$

³⁵² An "elasticity" refers to the change in a given parameter in response to the change in an input cost. For example, as used here, a trade elasticity refers to the change in the value of traded goods and services in response to an increase in energy prices attributable to California's GHG policies. Elasticities measure the proportional change in one term relative to another. For example, if the trade elasticity is – 0.5, this means that for any given increase in energy costs, the value of traded goods and services decreases by half as much.

GHG_{out} units: GHG emissions per unit of value of production) is the marginal emissions intensity of the out-of-state production that responds to a change in relative operating costs. As we explain in Fowlie and Reguant (2018), these marginal emissions intensity parameters are difficult to estimate empirically for several reasons:

- 1) Reliable data measuring the carbon intensity of out-of-state production can be very difficult to obtain.
- 2) Even if researchers can obtain a reasonable estimate of the average emissions intensity for a given industry and trading partner, this average could significantly over or under-estimate the marginal rate. Past work has documented tremendous variation in emissions intensities across producers in the same industry (Lyubich et al, 2018).
- 3) Marginal emissions rates in a given sector/jurisdiction can change over time as out-of-state producers respond to changing terms of trade and factor prices. A marginal emissions intensity estimate constructed prior to the introduction of a policy need not apply once the policy takes effect.

A more concerted effort to gather data on the emissions intensity of industrial production in various jurisdictions outside would help inform leakage risk assessment efforts in California and beyond.

ΔQ_{out} (units: value of production) captures the responsiveness of out-of-state production to the introduction of GHG regulations in California. These industry-specific measures of supply responsiveness will in turn be determined by a number of factors, including the elasticity of the supply of imports to California, the elasticity of demand for exports from California, and the elasticity of production within California to policy-induced increases in operating costs. These elasticities are difficult to estimate empirically.

- 1) One limiting factor pertains to data availability. For example, data on intra-national, interstate trade is very limited, making it next-to-impossible to assess how these trade flows might be impacted by changes in relative operating costs.
- 2) A second complication concerns the identification of underlying elasticity parameters. It can be very difficult to disentangle the impacts of California climate change policies from the effects of other exogenous, time-varying factors.

These complications notwithstanding, careful work that seeks to evaluate how in-state production, imports, and exports are responding to policy-induced increases in operating costs can help inform our understanding of leakage potential across affected sectors.

2. Emissions leakage mitigation

California, along with other jurisdictions implementing GHG cap-and-trade programs, has been experimenting with using production subsidies to mitigate leakage in sectors deemed to be exposed to leakage risk. Under this approach, emitters are required to

purchase cap-and-trade allowances to cover their emissions. But these same firms are freely allocated allowances based on output levels. Thus, the economic effect of this approach is that the producer sees both an emissions tax (via the market-based value for allowances, which provides an incentive to reduce emissions) and a production incentive (which helps to “level the carbon playing field” with respect to unregulated out-of-state producers).

This output-based free allowance allocation approach used in California can be used to strike a balance between incentivizing emissions abatement and mitigating leakage.

However, it is important to stress that this strategy comes with side effects. First, an opportunity cost is incurred when allowances are freely allocated. If allowances were not freely allocated to industry to protect against leakage risks, they could be sold at auction and their revenue used to fund climate mitigation expenditures, cut taxes, or provide direct rebates to consumers. Second, output-based rebating dilutes the carbon price signal in those industries that receive implicit subsidies. This shifts more of the overall abatement cost burden onto producers who are subject to the cap-and-trade program, but ineligible for these subsidies. Thus, the use of output-based subsidies to mitigate leakage will generally increase the total abatement costs incurred within California to achieve a given level of abatement.

In sum, because output-based free allocation has potentially significant implications for both the costs of abatement and the distribution of who bears these costs, these interventions should be judiciously calibrated and targeted. To efficiently mitigate leakage, subsidy levels should ideally reflect the GHG emissions in external jurisdictions that are avoided when production activities remain within California.

Allocating valuable subsidies is an inherently political process, so there is a pragmatic need for a systematic approach that can be applied consistently and transparently across sectors. The current approach to calibrating output-based subsidies is ad hoc. In particular, there is no attempt to rationalize the recent increase in industry-specific allocation factors in terms of factors that determine emissions leakage risk (namely foreign emissions intensity and the responsiveness of out-of-state production to changes in relative operating costs). As we acknowledge above, estimating these parameters is a challenging and imprecise exercise. These complications notwithstanding, more could be done to ensure that production-based subsidies conferred to industry reflect true leakage risk.

As California’s GHG policies increase in stringency and ambition, the efficiency and distributional implications of any mis-calibration of subsidies will become more significant. Additional data collection (e.g., on intra-national, inter-state trade flows) and analysis is needed to refine and improve the current approach to calibrating and conferring leakage mitigation compensation...

We make several recommendations with regard to the monitoring and mitigation of emissions leakage in the context of its cap-and-trade program:

1) **Intra-national trade data.** In order to estimate emissions leakage potential for specific sectors in California, one needs data on intra-national, interstate trade transactions over time. Research to date has not fully leveraged the available data. Additional data sources could be used to construct a more complete picture of interstate trade in EITE industries. CARB could leverage the ongoing efforts of academic researchers to collect and analyze these data.

2) **Emissions intensity of out-of-state suppliers.** A critical determinant of emissions leakage is the marginal emissions intensity of out-of-state suppliers. Researchers are actively collecting data on the emissions intensity of industrial production in various jurisdictions outside California. A concerted effort to collect these data and assess their credibility would substantively inform leakage risk assessment efforts in California and other jurisdictions...

[The original comment, which includes a reference list, is available at <https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=ct2018>.] (IEMAC)

Response: The commentor requests that CARB continues to quantify and mitigate leakage and identifies possible methodologies to how this effort could be accomplished going forward. As stated in the comment, CARB is required by statute to minimize leakage to the extent possible and will continue to monitor and address leakage using the most appropriate data and methods, as well as submitting a report to the Legislature by December 31, 2025 pursuant to AB 398. See Response to 45-Day Comment C-1.5. The comment does not appear to recommend specific changes to the proposed amendments, and no further response is needed.

Cement Under Cap-and-Trade Program

C-1.12. Comment:

ARB must do better with CAP and TRADE - especially with cement.

Did you know that Heidelberg Cement, Germany runs 3 cement plants in California?

This company is one of the largest, if not the largest, building material suppliers in the world.

They operate three cement plants in California: Shasta, Cupertino, and Tehachapi.

They have habitually flouted our labor safety rules (among other regulatory institutions) and have landed on MSHA's (Mining Safety and Health Administration's) impact list which is intended to reduce the number of companies that rely on an egregious list of violations as a cost of doing business. If they don't treat their employees well, what will they do for the rest of us?

Did you know that they're bragging in their annual reports that California is being so kind to them when it comes to cap and trade? I do not have time to send you this documentation, but if you contact me, I shall. Don't you think that's shameful?

I have read the letters that the cement industry has written to the ARB. Their letters are weak and contain no compelling data (I apologize, to not write more now, my kid has been chronically ill for a month and don't have time). And the information they have provided is misleading. It would take a couple of hours for me to pull the data together and I understand that you have a 4pm deadline.

Among other things, the cement group lamented that if there is cap and trade for cement, then other materials, such as wood, will displace cement. But isn't that the idea? Let's use cement as a last resort.

Long story short, it appears that when it comes to cap and trade that the State of California is behind China. That is horrific. Please stop kowtowing to these polluters and start doing the right thing for the citizens of California and planet earth. (FRY)

Response: This comment does not provide input that is specific to the amendments under consideration. Rather, the commenter appears to take issue with use of cement and allowance allocation to the cement sector, while specifically acknowledging that the comment does not provide documentation related to labor and other concerns.

Both AB 32 and AB 398 require that CARB minimize leakage, and CARB accomplishes this through allowance allocation to energy-intensive, trade-exposed industry. CARB applies a consistent methodology for all industrial sectors—including the cement manufacturing sector—when assessing leakage and calculating allowance allocation. CARB believes this consistent approach is fair and equitable to all industrial sectors and minimizes leakage consistent with AB 32 and AB 398. Future allowance allocation to cement facilities are also discussed in Responses to 45-Day Comments C-1.13 and C-1.19.

Alternate Cap Adjustment Factor for Cement Production

C-1.13. Comment:

II. CSCME PROVISIONALLY SUPPORTS CARB'S PROPOSAL TO APPLY AN ALTERNATE CAP ADJUSTMENT FACTOR TO THE CEMENT INDUSTRY

2.1 An alternate cap adjustment factor is necessary to minimize leakage in industries with a high proportion of process emissions

CARB proposes to apply an alternate cap adjustment factor ("CAF") to industries that are highly exposed to the risk of leakage. The primary rationale for an alternative CAF is that certain industries are vulnerable due to a combination of factors, including a high exposure to carbon prices, a limited ability to avoid those costs through abatement, and an inability to pass those costs on to customers without shifting market share (and GHG

emissions) toward out-of-state competitors. Consistent with this rationale, CARB developed an eligibility test based on the following three factors: an industry's emissions intensity (i.e., carbon price exposure), process emissions share (i.e., limited abatement potential), and level of leakage risk (i.e., the risk that passing costs on to customers will result in undesirable environmental consequences). The application of an alternate CAF to such industries is consistent with both current practice and Board Resolution 17-21, which directs staff to, "...evaluate and propose, as necessary, post- 2020 cap adjustment factors consistent with the methodology used in the 2015-2017 allocation."

CSCME strongly supports the general practice of applying an alternate CAF to leakage exposed industries and CARB's proposed approach for determining industry eligibility. In the case of the cement industry, process emissions represent the majority of the industry's total GHG emissions. Given that process emissions are a consequence of the chemical process required to produce cement, they cannot be reduced by improving energy efficiency or switching to lower carbon fuels. As a result, the cement industry's ability to reduce its GHG intensity is severely limited, especially in comparison to other industries. An alternate CAF acknowledges these unique constraints and addresses them in a targeted and equitable fashion.

2.2 To achieve its intended purpose, the alternate CAF should be set individually for each industry based on its unique process emissions profile

CSCME believes that CARB's proposed approach to setting and applying the alternate CAF trajectory to individual industries could be substantially improved from both a technical and policy perspective. Specifically, CARB proposes to apply a uniform alternate CAF to all industries who meet the eligibility test, regardless of the degree of leakage exposure or specific proportion of process emissions. This one-size-fits-all approach may have been unavoidable when CARB initially implemented alternate CAFs at the beginning of the cap-and-trade program, because it lacked sufficient data at the time to determine the proportion of process emissions in each industry. However, as demonstrated by the methodology used in the ISOR to determine an industry's eligibility, CARB now has several years of verified emissions data that allows it to calculate the share of process emissions across all industries subject to the mandatory reporting requirement. CARB should use this data to develop a more precise and appropriate alternate CAF for each industry that meets the eligibility criteria.

The process of establishing industry-specific alternate CAFs is straightforward – CARB should simply scale the annual decline in the standard CAF based on each industry's actual share of process emissions. Specifically, the alternate CAF for each qualifying industry would be calculated by multiplying the annual rate of decline in the standard CAF (3.4 percentage points) by the share of combustion emissions (i.e., 1 minus the share of process emissions) in a given industry. Under this approach, an industry with 90% process emissions would receive a CAF that declines at a lower rate (0.34 percentage points per year) than an industry with 70% process emissions (1.02 percentage points per year), which in turn would receive an alternative CAF that

declines at a lower rate than an industry with 50% process emissions (1.70 percentage points per year). This approach is both logical and intuitive because it only applies the CAF decline to the proportion of combustion-related emissions.³⁵³

Finally, CSCME respectfully requests that CARB calculate an industry's share of process emissions and alternate CAF on an annual basis, using the most recent three years of verified emissions data available. This will ensure that short-term fluctuations in an industry's emissions profile do not have undue influence on its alternate CAF and that industries are not unfairly penalized for making meaningful reductions in their combustion emissions over time, which will necessarily result in a higher share of process emissions.

This approach to calculating alternate CAFs for eligible industries has several notable advantages. First, it is more consistent with CARB's underlying policy rationale for establishing alternate CAFs: that an industry with a relatively higher share of process emissions will have relatively fewer technologically feasible (or cost-effective) opportunities to reduce their GHG emissions intensity in response to carbon price signals. Second, it would further demonstrate that CARB is taking actions to minimize the risk of leakage, particularly as this risk escalates with the decline in allowance allocations to high risk industries. Finally, it would further demonstrate that CARB is adapting the program to incorporate new and more precise data as it becomes available. (CSCME)

Response: The commenter supports CARB's general approach to extend alternate cap adjustment factors (CAF) for post-2020 compliance periods, and requests that CARB develop sector-specific alternate CAFs that reflect the ratio of process emissions to total emissions in each sector. Board Resolution 17-21 directs staff to "...evaluate and propose, as necessary, post-2020 cap adjustment factors consistent with the methodology used in 2015-2017 allocation calculations for sectors that have been determined to be highly trade exposed with highly emissions intensive products that have greater than 50 percent process emissions." CARB evaluated eligibility for post-2020 alternate CAF for covered sectors using the same criteria as used for the period 2015-2017: high leakage risk classification, high emissions intensity, and process emissions greater than 50 percent of total emissions. Covered sectors that meet these criteria are at an especially high leakage risk and have more limited options for reducing the emissions intensity of their processes. The reduced rate of decline in the alternate cap adjustment factors for these sectors as compared to the standard cap adjustment factors effectively accounts for the process emissions from these industries. CARB calculated the post-2020 alternate CAFs using the

³⁵³ Although this approach would exempt process emissions from the CAF component of the allowance allocation framework – reflecting the significant barriers to reducing process emissions in industries like cement with technically mature production processes – companies' overall compliance obligation would still cover process emissions, thereby preserving the incentive to find innovative ways to reduce them.

same method as applied for the period 2015-2017, which was setting the rate of decline equal to half the rate of decline for standard CAFs.

The adopted amendments are responsive to Board direction given in Resolution 17-21, reasonable, and comply with AB 32 direction to minimize leakage. Therefore, staff declines to apply the data and sector-specific calculation method requested by this comment.

Alternate Cap Adjustment Factor for Coke Calcining

C-1.14. Comment:

We support the proposal for a different cap reduction factor for coke calcining recognizing the nature of its process emissions. (PHILLIPS66)

Response: Thank you for the support. See also Response to 45-Day Comment C-1.13.

Alternate Cap Adjustment Factor for Hydrogen Production

C-1.15. Comment:

Hydrogen Cap Adjustment Factor. CARB staff has indicated it will review manufacturing activity-specific data if stakeholders demonstrate that the NAICS 6-digit classification does not represent the activities conducted at the covered industrial facilities. The NAICS classification for industrial gases represents a broad range of activities, inclusive of hydrogen production. Hydrogen is an important feedstock for refineries that is essential for production of the high- quality, clean fuels that CARB's specifications demand. The preponderance of hydrogen produced in California and globally is supplied to refineries. This link is well-understood in California as well as other jurisdictions such as the EU, which assesses hydrogen alongside its refineries.

CARB has stated three criteria for sectors that should be assessed with a more favorable cap decline factor. These are:

- Process Emissions – CARB's criterion for this metric is that process emissions should be at least 50% of total emissions. For hydrogen manufacturing, this criterion is met. In the 2010 final statement of reasons, CARB did not contest the comments offered by Air Liquide and the Industrial Gases Panel of the American Chemistry Council that hydrogen plants had >50% process emissions. The average emissions intensity for hydrogen production, based on data included in CARB's February 26, 2014 white paper titled, "Proposed Benchmarks for Refineries and Related Industries," is 9.9 tons CO₂e per ton of hydrogen production. Process emissions to produce hydrogen are 5.5 tons based on conversion of methane to hydrogen and consistent with Ontario's benchmark for fixed process emissions. Based on this information, process emissions for California hydrogen producers are over 55% of total emissions.

- Leakage Risk – CARB’s criterion for this metric is that the industry be at high risk of leakage. In 2010, CARB established a position that the leakage risk of hydrogen production was the same as petroleum refining. At the time, the leakage risk of petroleum refining was established as medium. Leakage risk, however, is not constant. Large foreign refineries now have the capacity to produce clean California products, increasing the possibility of imports. California’s goal of reducing the use of fossil fuels for transportation may increase the importance of exporting fuels produced by California’s tightly regulated petroleum refining sector. An analysis of recent trade and production data confirms these trends. Trade intensity at the national and regional levels has increased substantially since staff’s ISOR, published in October 2010, concluded a medium leakage risk. National trade intensity has increased from an average of 20% in 2003-2008 to an intensity of 26% in 2013-2016, when stationary sources came into the program. Similarly, regional level trade intensity has increased even more dramatically, rising from 13% in 2003-2008 to 19% in 2013-2016. Per CARB criteria, refining and associated hydrogen production should be deemed at high risk of leakage. The detailed data that substantiates this is provided in Appendix A. [The attached appendix of one page appears intended to support the arguments and requests stated in the main comment. This document can be viewed in the original comment letter, available in the comment log for Cap and Trade 2018 at <https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=ct2018>.]
- Emissions Intensity – CARB’s criterion for this metric is that the production result in greater than 5000 mt of CO₂e/M\$ value added. A review of hydrogen plant emissions and the fixed and variable costs of hydrogen³⁵⁴ indicates that the emissions intensity of hydrogen production is greater than 10,000 MTCO₂e/M\$.

Based on CARB’s criteria above being met, hydrogen production for refining should be immediately provided a reduced cap decline factor with effect from the third compliance period. (WSPA2)

Response: Board Resolution 17-21 directs staff to “...evaluate and propose, as necessary, post-2020 cap adjustment factors consistent with the methodology used in 2015-2017 allocation calculations for sectors that have been determined to be highly trade exposed with highly emissions intensive products that have greater than 50 percent process emissions.” CARB evaluated eligibility for post-2020 alternate cap adjustment factors (CAF) for covered sectors using the same criteria as used for the period 2015-2017: high leakage risk classification, high emissions intensity, and process emissions greater than 50 percent of total emissions. Covered sectors that meet these criteria are at an especially high leakage risk and have more limited options for reducing the emissions intensity of

³⁵⁴ Ratan, Farnand and Li, Hydrogen perspectives for 21st century refineries, Hydrocarbon Processing, September 2014.

their processes. The reduced rate of decline in the alternate cap adjustment factors for these sectors as compared to the standard cap adjustment factors effectively accounts for the process emissions from these industries. CARB calculated the post-2020 alternate CAFs using the same method as applied for the period 2015-2017, which was setting the rate of decline equal to half the rate of decline for standard CAFs.

The commenter requests that CARB classify petroleum refining as a high trade exposure sector based on 2013 to 2016 data. The commenter posits that this would change the leakage risk for the petroleum refining sector, and consequently for the hydrogen production sector, from medium to high. Hydrogen production would then meet the three criteria (high leakage risk classification, high emissions intensity, and process emissions greater than 50 percent of total emissions) and be eligible for post-2020 alternate cap adjustment factors in Table 9-2.

CARB relied on the 2010 leakage risk assessment,³⁵⁵ which has been incorporated by reference as part of the Staff Report to this rulemaking, to identify industrial activities eligible for post-2020 alternate cap adjustment factors. CARB conducted a new leakage risk assessment only for activities where the NAICS code evaluated in the 2010 leakage risk assessment is not representative of the activity. The NAICS code assessed for the petroleum refining sector (NAICS code 324110) in the 2010 leakage risk assessment remains appropriate to that sector, and therefore CARB did not reevaluate leakage risk for the refinery sector. Updating the leakage risk of the petroleum refining sector based on 2013 to 2016 data is unnecessary and would not be consistent with Resolution 17-21.

CARB will continue to assess updated data related to allowance allocation, including for assessing leakage risk, in future regulatory amendments, and CARB anticipates that more detailed reviews of this data and engagement with covered sectors will commence in 2019. In addition, as noted in Response to 45-Day Comment C-1.5, CARB will continue to monitor leakage and submit a report to the Legislature by December 31, 2025 on leakage risk pursuant to AB 398.

Alternate Cap Adjustment Factor for Flat Glass Production

C-1.16. Comment:

Flat glass manufacturing should be included on the list of industries in Table 9-2 of the Regulations receiving a lower cap adjustment factor for industrial assistance because there are a limited number of facilities in California and they are at significant risk of leakage.

³⁵⁵ California Air Resources Board. 2010 Proposed Regulation to Implement the California Cap-and-Trade Program, Staff Report: Initial Statement of Reasons, Part I, Volume IV, Appendix K: Leakage Analysis. <https://www.arb.ca.gov/regact/2010/capandtrade10/capv4appk.pdf>

California flat glass manufacturers employ state-of-the-art technology to produce glass for buildings and other applications near and far. From the Salesforce Tower in San Francisco to the Burj Khalifa Tower in Dubai, this California manufactured flat glass finds its way onto some of the most iconic buildings around the world. However, these same companies face global competition for the flat glass market from companies that do not face similar carbon emission reduction mandates. Moreover, the compliance burden imposed by the cap-and-trade program falls particularly hard on companies like Guardian because the high temperatures required to produce flat glass limits opportunities for emissions abatement.

With less than 450 employees in the industry, steps should be taken now to ensure the longevity of the industry in California and striving to ensure a smaller environmental footprint of the industry. Adding flat glass manufacturing to the list of industries receiving a lower Cap Adjustment Factor, as in Table 9-2 of the proposed amendments to the Cap-and-Trade regulation helps prevent emissions leakage and maintain a California manufacturing base. (CMTA)

Comment:

On behalf of Guardian Industries Kingsburg Operation ("Guardian"), I write to request that flat glass manufacturing (NAICS code 327211) be added to the list of industries in Table 9-2 of the Regulations receiving slower declining cap adjustment factors ("Special Factors").

The flat glass industry in California has been decimated over the past 20 years with multiple plant closures resulting in the migration of activity and production capacity out of state, despite the growth in flat glass demand in California. Flat glass manufacturing requires higher temperatures than any of the industries currently receiving the Special Factors, and application of the standard declining cap adjustment factors will result in tens to hundreds of millions of dollars in additional compliance costs over the 20-year life of a flat glass plant...

Future Investments. In 2021 or 2022, the Kingsburg plant furnace will be reaching the end of its design life and Guardian will be faced with the decision of whether to rebuild the glass furnace at Kingsburg. One of the factors to be considered will be whether it makes sense to invest in the existing operations vs. an incremental spending increase at a site that may have a lower overall operational cost and compliance structure going forward.

Emission Intensity & Leakage. Several glass plants have left the state of California over the last 15 years, and large manufacturing operations have chosen to locate in Nevada, in part because approximately 80% of the raw materials needed to produce glass are located in Nevada and Wyoming. Currently, the Kingsburg facility must import the raw materials from these jurisdictions for our flat glass production. The additive impact of the cap-and-trade program costs in conjunction with these other factors significantly increase the operational cost structure for Kingsburg.

Manufacturing flat glass requires large volumes of raw materials and inputs of energy in the form of both fuel and electricity. Glass is primarily made from melting very high-purity silica sand, in a mix with limestone, dolomite, soda ash, salt cake, and various minor components.

To melt sand, furnace temperatures must approach 3000°F. This temperature is achieved through the combustion of natural gas in air, resulting in a process that is classified as Energy Intensive and Trade Exposed under the cap-and-trade program. In addition, the CARB acknowledges that cap-and-trade costs could result in the future closure of California glass plants, resulting in the import of glass produced outside the state. For this reason, the CARB has classified flat glass as a High Leakage Risk industry.

Compliance Costs. To illustrate the effect of compliance costs on its operations, Guardian compiled the following estimates for the projected life of a new furnace beginning operation by 2026 under the current cap-and-trade rule structure, assuming that the program extends indefinitely. At the allowance price floor, the projected costs to the facility were approximately \$85 Million over the furnace life. If the price reaches the second programmatic "speed bump", the cost reaches \$186 Million, and at the price ceiling, the cost is almost \$671 Million. These cost projections could reach prohibitive levels for the continuation of flat glass production within the state.

Consideration of addition of Flat Glass Manufacturing. Glass is a key way to control the environment within a building. Heat, cold, and precipitation can all be kept out, while light pours in and views are revealed. Interaction with flat glass happens every day, in our homes, our offices, our transportation systems, and even in our communication devices. Flat glass is an inseparable part of our lives, yet we rarely notice it.

In July 2018, Kingsburg employees were proud to celebrate the plant's 40th year of conducting business in California, with several employees being recognized for continuous employment since the opening of the facility. We hope to continue the legacy of the Kingsburg operation in California.

To mitigate carbon leakage in California, we request that flat glass manufacturing (NAICS code 327211) be added to the list of industries in Table 9-2 of the Regulations receiving a slower declining cap adjustment factors for industrial assistance.
(GUARDIAN)

Comment:

On behalf of Guardian Industries Kingsburg Operation ("Guardian"), we are writing to request that flat glass manufacturing (NAICS code 327211) be added to the list of industries in Table 9-2 of the Regulations receiving a slower declining cap adjustment factor for industrial assistance. As further described in this letter, the record for the Proposed Amendments clearly establishes the flat glass industry is among those most

exposed to environmental and economic leakage risks but has limited options for emissions abatement. AB 32 requires CARB to address leakage through rulemaking on an ongoing basis, and CARB can do so in this case by adding NAICS code 327211 to Table 9-2. This change can be made through a 15-day notice in the current rulemaking because it is not a substantive or material change to any regulatory requirement, but rather merely applies the existing requirements based on new information received through the public comment process and AB 32's statutory directives.

1. The Record Establishes that Guardian and Flat Glass are Among the State's Companies and Industries the Most Exposed to Environmental and Economic Leakage

In previous meetings, and in comments submitted to you including the enclosed letter and PowerPoint presentation communicated to your staff on August 23, 2018 (attached hereto as Exhibit 1) and a second letter dated October 15, 2018, Guardian has established that the flat glass industry faces a significant risk of leakage and has limited options to abate emissions due to the high temperatures required to manufacture flat glass. These points were also made by the California Manufacturers & Technology Association in a letter dated October 16, 2018. Guardian's letters note that "[t]he flat glass industry in California has been decimated over the past 20 years with multiple plant closures and the migration of economic activity and production capacity out of state, despite a growth in demand in California." The Powerpoint Presentation accompanying Guardian's August 23, 2018 letter hereto further illustrates that flat glass manufacturing requires higher temperatures than any of the industries currently receiving the Special Factor, and that application of the Standard Factor (also defined below) will result in tens or potentially hundreds of millions of dollars in additional compliance costs over the 20-year life of a flat glass furnace.

These facts establish that flat glass manufacturing faces a particularly high risk of leakage under the Proposed Regulations. As described in Exhibit 1 hereto and in Guardian's letters, Guardian will need to decide in 2021 or 2022 whether to rebuild its furnace at the Kingsburg facility or to relocate production outside California. The other two flat glass facilities currently operating in California will face the same decision when their current furnaces need to be replaced. If CARB does not address the unique circumstances of the flat glass manufacturing industry, this situation could result in the loss of hundreds of jobs and leakage of hundreds of thousands of tons of emissions outside the program.

2. CARB Has an Ongoing Duty under AB 32 to Minimize Leakage

The Global Warming Solutions Act of 2006, CAL. HEALTH & SAFETY CODE § 38501 et. seq. ("**AB 32**"), which created the authority for CARB to establish the Cap-and-Trade Program, creates ongoing obligations for CARB to update its plans to achieve the maximum feasible and cost-effective emissions reductions, and specifically provides that ARB may amend and revise the Regulations to further the provisions of AB 32.

See Cal. Health & Safety Code §§ 38561(h), 38562(g). In initially adopting the Regulations, and in making amendments, CARB is required to, among other things, “minimize leakage.” See Cal. Health & Safety Code § 38562(b)(8). Together, these provisions of AB 32 create an ongoing duty for CARB to consider the potential for the Cap-and-Trade Program to create or encourage leakage (including on the basis of information received from compliance entities), and to adjust the Regulations as appropriate to minimize such leakage.

3. CARB is Required to Add Flat Glass to Table 9-2

A. The Footnote in Table 9-2 is Descriptive, not Prescriptive

Table 9-2 in the Regulations sets out the cap adjustment factor used in calculating the number of allowances that eligible covered entities receive each year through the program’s industrial assistance provisions. The cap adjustment factor applied to “standard activities” declines by an average of 5.07% per year (the “**Standard Factor**”) between 2020 and 2031, but a separate cap adjustment factor that declines at an average of 1.96% per year between 2020 and 2031 (the “**Special Factor**”) is applied to activities with NAICS codes 325311, 327210 and 327410. A footnote to Table 9-2 notes that these are “activities with over 50 percent of total emissions from process emissions, high emissions intensity and a high leakage risk classification in Table 8-1.”

The regulatory record for the Regulations shows that CARB identified flat glass manufacturing as being at high risk of leakage, but that it decided not to apply the Special Factor because flat glass has process emissions that are less than 50% of total emissions.³⁵⁶ We have carefully reviewed the regulatory record for the Regulations and are unable to find any scientific, economic or ecological basis supporting the adoption of 50% as a hard threshold or cutoff for the application of the Special Factor. The record suggests that CARB merely selected the 50% level as an indicative proxy or short-hand benchmark to suggest a likelihood that the Special Factor would be warranted. But there is no evidence in the record to support the disqualification or ineligibility of industries likewise subject to material leakage risk based on aspects inherent to their manufacturing process that are not be amenable to cost-effective control. It may be, for example, that CARB will automatically (i.e., presumptively) add any industry with process emissions in excess of 50%. The 50% threshold, however, cannot and should not be used to exclude industries with process emissions that the record shows are subject to a high risk of leakage. Arguably, doing so would be contrary to AB 32 because it would not minimize leakage and it would be arbitrary and capricious because it is not supported by the administrative record. Indeed, given AB 32’s unqualified directive for CARB to “minimize leakage,” it is an open question whether CARB has the

³⁵⁶ See Final Statement of Reasons, Oct. 27, 2011, at 1952, available at <https://www.arb.ca.gov/regact/2010/capandtrade10/fsor.pdf>.

authority to establish any threshold for excluding an industry with high leakage risk from application of the Special Factor. See Cal. Health & Safety Code § 38562(b)(8).

This interpretation is fully consistent with the text of the Regulations. Indeed, the footnote to Table 9-2 is descriptive, not prescriptive. It says only that the specified activities have over 50% process emissions, not that 50% process emissions are required or that facilities with material process emissions under the 50% could not likewise be eligible for comparable treatment upon a reasonable demonstration of leakage risk. The footnote to Table 9-2 is thus illustrative of CARB's process in drafting the Regulations, but is not a requirement of the Regulations. This conclusion is supported by the public comment record for the Regulations, which shows that the 50% threshold was never presented to or addressed by the public as a regulatory requirement.

Accordingly, based on information now in the record regarding the flat glass process emissions and the related material leakage risk, CARB should clarify its use of the 50% threshold as merely a presumptive indicator and confirm that other facilities may qualify for similar treatment in appropriate circumstances. We believe such a clarification best reflects the administrative record to date and would best accommodate the directives of AB 32.

B. Adding Flat Glass to Table 9-2 as Part of the Pending Rulemaking

As a result of the multiple submissions identified above, CARB now has information that it previously lacked, which clearly establishes that application of the Standard Factor rather than the Special Factor will likely lead to economic leakage—which AB 32 instructs CARB to minimize. Based on the foregoing, CARB has the duty under AB 32 to apply the Special Factor to flat glass manufacturing, and to make the necessary clarifications to Table 9-2 of the Regulations.

One approach available to CARB is to add NAICS code 327211 to the Special Factor column of Table 9-2 and to make the following clarifications to the footnote to Table 9-2 (new changes shown in double-underline):

~~#These are activities with a material percentage over 50 percent of total emissions (e.g. over 50 percent, or other facts demonstrating materiality) from process emissions, high emissions intensity and a high leakage risk classification in Table 8-1. The activities are coke calcining under the NAICS code 324199, nitric acid production activities under the (NAICS code 325311), cement manufacturing activities under the (NAICS code 327310), activities under the NAICS code 327211 and dolime manufacturing the activities under the (NAICS code 327410).~~

CARB can make this change in the next 15-day notice for the current rulemaking, because it is a change to a footnote for which modifications were already included in the Proposed Amendments, and is therefore “sufficiently related to the original text that the

public was adequately placed on notice that the change could result from the originally proposed regulatory action.” See Cal. Gov. Code § 11346.8(c). Also, and for the reasons described above, it is a change that simply reflects CARB’s application of a requirement already contained in the Regulations based on new information available to CARB in the record rather than a substantive or material change to the requirement itself. [The attached slides provide background on the Kingsburg Float Glass Plant and discusses cost of Program compliance. The presentation appears intended to support the argument for an alternative cap adjustment factor for flat glass production stated in the main comment. This slideshow presentation can be viewed in the original comment letter, available in the comment log for Cap and Trade 2018 at <https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=ct2018>.] (GUARDIAN2)

Response: Board Resolution 17-21 directs staff to “...evaluate and propose, as necessary, post-2020 cap adjustment factors consistent with the methodology used in 2015-2017 allocation calculations for sectors that have been determined to be highly trade exposed with highly emissions intensive products that have greater than 50 percent process emissions.” CARB evaluated eligibility for post-2020 alternate cap adjustment factors (CAF) for covered sectors using the same criteria as used for the period 2015-2017: high leakage risk classification, high emissions intensity, and process emissions greater than 50 percent of total emissions. Covered sectors that meet these criteria are at an especially high leakage risk and have more limited options for reducing the emissions intensity of their processes. The reduced rate of decline in the alternate cap adjustment factors for these sectors as compared to the standard cap adjustment factors effectively accounts for the process emissions from these industries. CARB calculated the post-2020 alternate CAFs using the same method as applied for the period 2015-2017, which was setting the rate of decline equal to half the rate of decline for standard CAFs.

The commenters state that flat glass sector in California is at high leakage risk, the manufacturing process requires high energy to melt feedstock, and that it should be included in Table 9-2 as one of the sectors eligible for alternate CAFs. The commenters suggest that CARB could modify the criteria currently used to determine sector eligibility for alternate CAFs within the scope of the current rulemaking.

When evaluating the flat glass manufacturing sector against the three criteria for alternate CAFs, CARB finds that the sector meets the high leakage risk criterion. However, based on this evaluation, CARB continues to classify the flat glass manufacturing sector as medium emissions intensity with process emissions that are less than 50 percent of total emissions. Because this sector meets only one of the the three eligibilitiy criteria for alternate CAFs, CARB will apply standard CAFs to calculate post-2020 allowance allocation for entities operating in the flat glass manufacturing sector.

Contrary to the commenters suggestion, the three eligibility criteria were established in the initial adoption of the Cap-and-Trade Regulation, are part of the core industrial allocation design structure, and have not been proposed for modifications as part of this rulemaking. Moreover, changing the criteria used to assess sector eligibility for alternate CAFs in this rulemaking would not be consistent with Resolution 17-21, and changing the criteria to accommodate one sector could inappropriately affect the eligibility of other sectors. CARB will continue to assess updated data related to allowance allocation in future regulatory amendments, and CARB anticipates that more detailed reviews of this data and engagement with covered sectors will commence in 2019. In addition, as noted in Response to 45-Day Comment C-1.5, CARB will continue to monitor leakage and submit a report to the Legislature by December 31, 2025 on leakage risk pursuant to AB 398.

Alternate Cap Adjustment Factor for Lime Manufacturing

C-1.17. Comment:

As of 2018, Lhoist remains the only lime manufacturer in California and consistently represents less than 0.025% of the Cap-and-Trade Programs covered emissions.³⁵⁷ CARB has appropriately categorized our operations in the current and proposed Regulations as highly emissions intensive, with a high proportion of process emissions, and exposed to high leakage risk. Still, Lhoist cannot stress enough the ongoing competitiveness and global pressures faced by our business, especially as the standalone dolime manufacturer in the state. (LHOIST)

Response: Thank you for the support. See also Response to 45-Day Comment C-1.13.

Lime Manufacturing Separate Benchmark

C-1.18. Comment:

Allocation benchmarks must continue to be representative of the emissions intensity of each distinct production activity. Lhoist acknowledges that lime manufacturing was added as a general activity to Table 8-1 of the proposed Regulations. For clarity, lime manufacturing refers to production of calcium oxide (high calcium lime), whereas dolime manufacturing refers to a mix of calcium and magnesium oxide production. Lhoist welcomes the addition of lime manufacturing under Table 8-1 for accommodating potential new high calcium (hical) lime production entrants to California and strongly defends CARB's initial rationale³⁵⁸ to have two separate product output metrics for dolime and hical lime production activities under the Lime Manufacturing NAICS 327420. The chemical reaction and calcining processes are

³⁵⁷ Based on 2011-2016 emissions reported under California's Regulation for the Mandatory Reporting of Greenhouse Gas Emissions.

³⁵⁸ Refer to Appendix J of the 2010 Cap and Trade Regulations

different for hical lime and dolime manufacturing and therefore require distinct benchmarks. A new benchmark for hical lime manufacturing will need to be added to Table 9-1, if a hical lime producer enters California. This treatment aligns with other carbon pricing jurisdictions, including Canada's recently proposed draft regulations, which have adopted separate benchmarks for hical lime and dolime products. (LHOIST)

Response: The commenter indicates that a new benchmark for hical lime manufacturing will need to be added to Table 9-1 if a hical lime producer becomes a covered entity. Since this rulemaking did not propose to add any new benchmarks to Table 9-1, this comment is outside the scope of the current rulemaking.

When calculating allowance allocation, CARB's preferred approach is to apply a product-based methodology, which requires a product-based benchmark for each industrial activity. When new industrial activities become covered by the Program, CARB works closely with stakeholders to minimize leakage for that sector. CARB monitors new entrant facilities in all industrial sectors and, when appropriate, works with stakeholders to develop new product-based benchmarks that are equitable and consistent with CARB's overall allowance allocation policies.

Future Cement Benchmarking and Allocation

C-1.19. Comment:

III. CARB MUST DO MORE TO MINIMIZE THE RISK OF EMISSIONS LEAKAGE IN THE CALIFORNIA CEMENT INDUSTRY IN THE LONG TERM

CARB's proposed approach to allowance allocation in the post-2020 program is a step in the right direction with respect to minimizing leakage in the cement industry in the near term. However, CARB must do more to minimize the risk of emissions leakage in the California cement industry in the long term.

3.1 Future changes to the cement industry benchmark should not change the current direct emissions portion of the current benchmark

Allowance allocation remains a critical tool for minimizing the risk of leakage. The overall allocation rate for an industry is a function of three factors: (1) the product benchmark; (2) the assistance factor; and (3) the CAF trajectory. The proposed regulation only addresses two of those factors (i.e., the assistance factor and the CAF). CSCME understands that future rulemakings may incorporate indirect emissions into the allowance allocation framework, which may include a change to industry benchmarks. CSCME urges CARB to ensure that any changes to industry benchmarks do not result in a reduction of the direct portion of the current benchmark, which would effectively devalue any prior emissions-reducing investments and undermine the leakage prevention provided by other components of the allocation framework. The California cement industry looks forward to working with CARB during the upcoming

rulemaking process to ensure that the approach to incorporating indirect emissions into the allowance allocation framework is sound and sustainable and makes use of the best available data.

3.2 The risk of leakage will grow as the allowance allocation rate approaches the cement industry's technically and economically feasible limit on emissions reduction

Other measures that complement the allowance allocation framework will be necessary to minimize leakage in the cement industry. Ultimately, emissions leakage is a function of the difference in obligations between in-state producers and imports. A declining CAF of any magnitude effectively guarantees that such differences will grow over time, particularly in the context of increasing foreign excess cement capacity and the lack of meaningful carbon costs imposed on out-of-state cement producers. The irreducible and unalterable nature of process emissions means that the cement industry's envelope of technically feasible opportunities for reducing overall emissions is limited and will only grow more limited over time.³⁵⁹ For these reasons, the current trajectory of the overall allowance allocation rate for the cement industry will increase the risk of leakage in the cement industry in each year of the program as it moves closer to a level that is both practically and economically unattainable due to the technical and operational limitations associated with process and deep combustion emissions reductions.

Accordingly, CSCME urges CARB to adopt measures that complement the allowance allocation framework to minimize the growing risk of leakage over time. Such measures could include leveling the playing field by applying similar carbon costs to all cement products consumed in California, whether they are produced domestically or are imported (e.g., an incremental border carbon adjustments).³⁶⁰ It could also include measures that limit compliance costs for the cement industry (or other high-risk industries) during carbon price spikes (e.g., industry-specific price ceilings).

In short, CARB's proposed framework guarantees that the overall allowance allocation rate for every industry will continue to decline over time. As a result, the allowance allocation rate for a given industry will approach a level that is not technically or

³⁵⁹ One solution to the challenges posed by process emissions that has occasionally been proposed is to install emissions control technologies – chiefly, carbon capture and storage (“CCS”) technology – on industrial sources of emissions, including cement plants. Although CCS continues to be an important area for exploration and innovation, its technical maturity and commercial viability for application in the cement industry is extremely limited, with deployment forecasts characterized by long time horizons and significant uncertainty. Industry experts predict one or two small-scale demonstration projects for carbon capture in the cement industry by 2020, with full-scale demonstrations not likely until at least 2030. In addition, the application of CCS in the industrial sector faces additional challenges due to the combination of high technology costs and robust international competition in commodities markets, resulting in additional cost pressures and leakage risk for the implementing industry.

³⁶⁰ See, e.g., California Air Resources Board, California's 2017 Climate Change Scoping Plan (November 2017) at 73 (highlighting the following potential additional action: "Evaluate and design additional mechanisms to further minimize emissions leakage in the Cap-and-Trade Program (e.g., border carbon adjustment)").

economically achievable, will increase cost differentials between domestically produced and imported products, and will necessarily exacerbate the risk of emissions leakage. This scenario is likely to occur more quickly for certain industries (i.e., those with substantial process emissions) than others, and the unique nature of the cement industry means that it will be at the highest risk over time. Accordingly, CSCME strongly recommends that CARB begin considering other measures that can effectively complement the allowance allocation framework and expand the agency's toolbox with respect to minimizing emissions leakage. (CSCME)

Response: The commenter suggests that CARB needs to consider additional options in order to mitigate potential risk for emission leakage from covered industrial sectors, such as industry-specific price ceilings and border carbon adjustments. The current rulemaking did not propose either industry-specific price ceilings, which would be inconsistent with the direction in AB 398, or amendments related to a border carbon adjustment. As such, these comments are outside the scope of the current rulemaking. CARB will continue to assess updated data related to allowance allocation, including for assessing leakage risk, in future regulatory amendments, and CARB anticipates that more detailed reviews of this data and engagement with covered sectors will commence in 2019. In addition, as noted in Response to 45-Day Comment C-1.5, CARB will continue to monitor leakage and submit a report to the Legislature by December 31, 2025 on leakage risk pursuant to AB 398.

C-2. Electric and Gas Utility Allocation

Allocation for Transportation Electrification

C-2.1. Comment:

B. Electrification Related Load Growth

The proposed amendments to the Cap and Trade program do not include any provisions to address Board Resolution 17-21. Board Resolution 17-21 directed the Executive Officer to "... evaluate appropriate quantification methodologies for additional electric distribution allocation that would provide ratepayer benefit for **the Cap-and-Trade program cost burden** to EDUs associated with transportation electrification load growth (in recognition of the requirements of SB 350)." The added electrification load beyond that reflected in the load forecasts underlying utility allocations is an *additional* cost burden to ratepayers, not reflected in the administrative allocations. SMUD believes that conservative estimation methods are most appropriate to address the increased cost-burden and are most consistent with the current base electric sector allocation (which reflected estimated load growth, not metered data). Data-informed estimation methods should be just as acceptable to CARB in the Cap and Trade program as they are for the base electric sector allocations and in the Low Carbon Fuel Standard (LCFS) regulation.

The load forecasts used for allowance allocation do not include the level of electrification load currently envisioned and reflected in State policy goals -- recently increased by Governor Brown. SMUD believes that the Board directed staff action on additional allowances for transportation electrification because of the tremendous importance of reducing vehicle and building emissions if California is to meet the State's GHG policy goals of AB 32, SB 32, and AB 398. An "uncovered" additional Cap and Trade cost-burden to EDUs is a practical barrier to additional EDU investment in transportation electrification. EDUs are projecting significant costs for the infrastructure necessary to accommodate electrification, and the LCFS revenues that EDUs need to invest in infrastructure will be reduced because of recent modifications to the LCFS regulation. The Cap and Trade program should recognize this fact and implement the Board's instructions in Resolution 17-21 to relieve the added cost burden by administratively providing allowances to cover the increased emissions from electrification.

During the informal workshops leading up to the 45-day language, CARB staff requested specific proposals regarding "... methods to quantify transportation-related load growth emissions (quantifiable and verifiable to allocation standards)." When asked what was meant by "allocation standards", CARB staff described an evidence standard that mirrored the same level of demonstration as for industrial sector allocations, which are provided retroactively based on tracked and reported historical data (either product or energy). Such a "metered data or its equivalent" requirement for the cost burden from electrification is not feasible or cost-effective for much of the potential transportation electrification load, or for the potential building electrification load, because these loads are typically not or cannot be separately metered. For example, adding a separate meter to measure the load from replacing a natural gas water heater with an electric heat-pump water heater is infeasible and unnecessary.

Unlike the allocations provided in the industrial sector, providing allowances for electrification will reduce the demand for allowances without changing overall supply, since transportation sector emission reductions more than offset the increases in the electric sector. Providing allowances for electrification will act to reduce prices in the Cap and Trade market and free up allowances for use by others. While allocating allowances for electrification would reduce the supply of allowances available to the general Cap and Trade market, it will also cause a greater reduction in the demand for allowances in that general market as transportation sector emissions decrease. Nothing like this happens with the industrial sector allowance allocation structure.

SMUD hopes that CARB staff understands how expensive it would be to require metering or similar documentation of electrification load growth. SMUD believes that the barrier to productive dialogue on this is CARB staff's continued fealty to industrial sector "allocation standards," and there is no clear, cost-effective proposal that can be developed and provided to CARB that meets that strict requirement. SMUD is prepared to develop and provide methods of estimation that take into account baseline

electrification already included in allocations, expectations of emission increases from additional load above baseline as resources change, use of advanced metering data to improve estimation of load, etc.

SMUD remains concerned that the path CARB describes of quantifying the need for additional EDU allowances using industrial sector “allocation standards” is akin to making the perfect the enemy of the good and would cause the State to lose or have delayed vital transportation sector GHG reductions, making achieving the 40% reduction goal in SB 32 and AB 398 more difficult and expensive. (SMUD)

Comment:

We also support removing the barrier of additional cost burden for electrification. This has been a long-standing issue. You must -- you guys must develop a plausible and feasible method to do this. And it should be okay to use estimations like you do in the LCFS program, like the projections that are used already in the electricity system allocations, and are likely to be used when your staff updates the allocations potentially for the 60 percent RPS. That's going to be based on projections. The ability to use projections for electrification should be a part of that. (SMUD2)

Response: These comments are outside the scope of this rulemaking because no changes are proposed to the methodology for calculating post-2020 allowance allocation to electrical distribution utilities (EDUs). Post-2020 EDU allowance allocation in the current Regulation are based on EDUs' load predictions, including transportation-related load, using the best information and data available at the time of calculation. Staff continues to evaluate methods to appropriately quantify EDU allocation to provide ratepayer protection from Program costs associated with transportation electrification per Board Resolution 17-21. In a future rulemaking, CARB plans to reevaluate post-2020 allocation to EDUs, including reevaluating allocation levels to incorporate the increased Renewable Portfolio Standard requirement (60 percent of retail sales in 2030) and the most recent information related to increased load due to electrification of the transportation sector. Additionally, the currently adopted amendments to the Low Carbon Fuel Standard do provide credits for transportation electrification and those credits are substantially higher in value today than the allowances in the Cap-and-Trade Program. CARB will continue to consider how best to align all of its policies to support transportation electrification in the State, while ensuring individual programs still achieve their primary goals. It should also be noted that any allowances that are provided beyond the evaluated need to the covered entities in the Program reduces the amount of allowances made available for auction, where the subsequent proceeds fund important programs, such as rebates to ensure low income households have access to clean technologies, including zero emission vehicles.

Increased Allocation for Natural Gas Suppliers

C-2.2. Comment:

1. Continued Consideration for Natural Gas Allowance Allocation

The GUG appreciates staff's acknowledgement of the need to revisit natural gas allocation if a renewable gas mandate or other changes to the sector occur, as noted in the Initial Statement of Reasons (ISOR)³⁶¹ released on September 4, 2018. The GUG maintains that the natural gas sector in California is already making significant and material steps towards decarbonization, which require substantial investment.

Most notably, Senate Bill (SB) 1440³⁶² was passed by the Legislature and signed by the Governor on September 23, 2018. This law requires the California Public Utilities Commission (CPUC), in consultation with the ARB, to consider adopting specific biomethane procurement targets or goals for California's gas corporations (IOUs). Many of the GUG members actively supported the passage of SB 1440 throughout the legislative session and are in favor of the CPUC setting up a program to foster cost-effective procurement of renewable natural gas (RNG) in California.

In the meantime, GUG members are not waiting for implementation of SB 1440 and have already taken many actions to support decarbonization, as noted below:

- SoCalGas and PG&E received approval from the CPUC to pursue Voluntary RNG Procurement Pilots that seek to purchase RNG to meet the compressed natural gas (CNG) vehicle fuel demand from utility-owned CNG fueling stations^{363, 364}.
- The City of Long Beach's Energy Resources Department supplies RNG to Long Beach Transit (the city's bus system) to power 100% of its compressed natural gas (CNG) vehicle fleet. The City is also increasing the number of City vehicles that run on CNG, all of which will be fueled by RNG.
- The City of Palo Alto approved a Carbon Neutral Natural Gas Plan³⁶⁵, which sets in motion a strategy to achieve carbon neutrality for the gas supply portfolio. All Palo Alto gas customers pay a 4 cent-per-therm surcharge in addition to any Cap-and-Trade compliance charges.

³⁶¹ ARB. Staff Report: Initial Statement of Reasons. Sept. 4 2018, page 67:
<https://www.arb.ca.gov/regact/2018/capandtrade18/ct18isor.pdf>

³⁶² SB 1440 (Hueso). Energy: biomethane: biomethane procurement program:
<https://www.socalgas.com/regulatory/tariffs/tm2/pdf/GO-BCUS.pdf>

³⁶³ SoCalGas Advice Letter #5295: <https://www.socalgas.com/regulatory/tariffs/tm2/pdf/5295.pdf>

³⁶⁴ PG&E Advice Letter 3961-G: https://www.pge.com/tariffs/assets/pdf/adviceletter/GAS_3961-G.pdf

³⁶⁵ City of Palo Alto Carbon Neutral Natural Gas Portfolio Plan:
<https://www.cityofpaloalto.org/civicax/filebank/documents/54160>

- In January 2014, the CPUC approved SoCalGas' application to offer a Biogas Conditioning/Upgrading Services Tariff in response to customer inquiries and requests³⁶⁶. This service is designed to meet the current and future needs of biogas producers seeking to upgrade their biogas for beneficial uses such as pipeline injection, onsite power generation, or compressed natural gas vehicle refueling stations.
- Per SB 1383, the CPUC's dairy pilot biomethane solicitation program is also underway and will approve at least five dairy biomethane projects for pipeline interconnection to investor-owned utilities in California by the end of 2018.³⁶⁷

Staff duly noted in the ISOR that the electric utility sector allocation recognizes the additional cost burden from decarbonization policies, while the natural gas sector does not receive a similar allocation adjustment.

As the natural gas sector continues efforts to decarbonize, RNG will play an important role in achieving the State's climate goals by providing a lower-emission, beneficial use for Short-Lived Climate Pollutants (SLCPs) that are currently being released directly into the atmosphere as methane or flared. As the GUG has noted in prior public comments, an increasingly decarbonized gas supply can:

- Enable near-term GHG reduction of medium and heavy-duty transportation while also improving air quality and supporting successful implementation of the Low Carbon Fuel Standard,
- provide cleaner fuel for ongoing thermal electric generation which supports integration of renewable resources,
- provide cleaner fuel for customer end-uses, especially in difficult to electrify industrial applications, and
- play a critical role in furthering reliable deployment of renewable electricity by utilizing the natural gas pipeline as renewable storage, benefiting from its ability to firm intermittent power, provide storage capacity and scalability compared to other storage options.

The GUG looks forward to working with staff and the ARB Board to recognize the costs of these decarbonization efforts through adjustment to the natural gas sector allocation in future Cap-and-Trade rulemaking...

In conclusion, the GUG believes that the viability and health of the post-2020 Cap-and-Trade program can be strengthened through further consideration of natural gas allocation as noted in Board Resolution 17-21... (JOINTGASUTILS)

³⁶⁶ SoCalGas Biogas Conditioning/Upgrading Services. Schedule No. GO-BCUS: <https://www.socalgas.com/regulatory/tariffs/tm2/pdf/GO-BCUS.pdf>

³⁶⁷ As directed by SB 1383, CPUC instituted R.17-06-015 to implement the dairy biomethane pilot: http://www.cpuc.ca.gov/renewable_natural_gas/

Comment:

VII. Natural Gas Allocation

In ARB's Staff Report, ARB Staff notes they will continue to review and consider adjustments to natural gas supplier allocation if a renewable gas mandate or other changes to the sector occur. PG&E agrees with ARB's continued review of this issue since efforts to decarbonize the natural gas pipeline are already underway, and the current natural gas supplier allowance allocation does not reflect the increased costs of such efforts for utility customers.

With the recent passage of SB 1440, the CPUC will be required to consider setting biomethane procurement targets, in consultation with ARB. PG&E is supportive of this effort to foster cost-effective procurement of RNG through a state-wide program and looks forward to working with ARB and other stakeholders in this proceeding. In the meantime, PG&E has already started programs to foster the decarbonization of the natural gas system.

For example, PG&E recently opened a solicitation through a Voluntary RNG Procurement Pilot that seeks to purchase RNG to meet the compressed natural gas (CNG) vehicle fuel demand from PG&E's 28 CNG stations. Per SB 1383, the CPUC's dairy pilot biomethane solicitation program is also underway and will approve at least five dairy biomethane projects for pipeline interconnection to investor-owned utilities in California by the end of 2018.

RNG will play an important role in helping to achieve the State's climate goals by providing a lower-emission, beneficial use for Short-Lived Climate Pollutants that are otherwise emitted to the atmosphere. PG&E looks forward to continuing to work with ARB to recognize the value of RNG-related and other decarbonization efforts in the natural gas supplier allowance allocation in future Cap-and-Trade rulemaking. (PG&E)

Comment:

We'd also like to urge ARB to continue working with the natural gas utilities on natural gas allowance allocation, so that that allocation helps to foster the decarbonization of the natural gas sector, rather than hindering it in the future. (PG&E2)

Comment:

7. Equitable Treatment for Natural Gas Allowance Allocation

Allowance allocation for natural gas utilities continues to be an important issue for SDG&E, and we support the comments of the Southern California Gas Company and the Gas Utility Group on this issue. Currently, the electric utility sector is recognized for early action and the additional cost burdens of complementary policies such as the Renewable Portfolio Standard and energy efficiency measures. SDG&E acknowledges that this is appropriate and necessary given the required investments and costs associated with reducing GHG emissions in California's electric sector. While natural

gas utilities receive an allocation to ease customers' transition to higher natural gas costs and for prior energy efficiency efforts, the allocation and associated methodology for the gas sector does not go far enough to help reduce the cost burden of decarbonization, even though natural gas ratepayers are incurring these costs. Accounting for these costs holistically through allowance allocation is an efficient way to balance the dual goals of protecting utility customers from rate shock and meeting the state's climate objectives.

Staff highlighted this discrepancy between electric utility and natural gas utility allocation methodology in the Initial Statement of Reasons (ISOR).³⁶⁸ SDG&E appreciates that Staff also acknowledged in the ISOR the need to revisit natural gas allocation if an RNG mandate or other changes to the natural gas sector occur. This is a timely acknowledgement given Senate Bill 1440 (Stats. 2018, Ch. 739), which requires the California Public Utilities Commission, in consultation with CARB, to consider adopting specific biomethane procurement targets or goals for California's gas corporations. RNG will play an important role in achieving the State's climate goals by providing a lower-emission, beneficial use for Short-Lived Climate Pollutants that are currently being released directly into the atmosphere as methane or flared. There are many environmental and economic benefits to employing a decarbonization strategy that includes RNG, and an increasingly decarbonized gas supply will also be critical in achieving the Governor's statewide goal of carbon neutrality by 2045 (Executive Order B-55-18). These efforts do not come without a cost, however, and our concern is protecting utility customers.

In light of current and future efforts to help decarbonize the natural gas system, SDG&E looks forward to working with CARB to recognize the costs of these decarbonization efforts through adjustment to the natural gas sector allocation in future Cap-and-Trade rulemakings, per Board Resolution 17-21...

In conclusion, SDG&E believes that the viability and health of the post-2020 Cap-and-Trade Program can be strengthened by the appropriate application of the modifications directed by AB 398 and Board Resolution 17-21, including further consideration of natural gas allocation. (SDG&E)

Comment:

So kidding aside, we are here in general support of the proposal from staff, but we -- I want to highlight and echo a couple of the comments that my colleague, Fariya Ali, made earlier. We submitted a letter along with other gas utilities. And we appreciate the staff's work with our sector on the question of natural gas allowance allocations. And to date, we've had a conversation that feels like it's gone on for a little bit more than a year now. And we appreciate the time and effort from staff, but we really want to continue that conversation. And we would appreciate Board direction to the staff to

³⁶⁸ California Air Resources Board. Staff Report: Initial Statement of Reasons. Sept. 4 2018, page 67: <https://www.arb.ca.gov/regact/2018/capandtrade18/ct18isor.pdf>

continue working with our sector to continue to address this issue. You know, it's acknowledged in the initial statement of reasons. It's an important issue, and it recognizes that gas utilities are actively working to get -- to decarbonize.

We worked active -- this year actively with Senator Hueso on Senate Bill 1440. We'd hoped that would have resulted in a procurement requirement. We ended up with direction to the PUC and ARB to consider such a program, and we support that. These efforts are absolutely consistent with your Short-Lived Climate Pollutant Plan. We -- you know, we see renewable natural gas, renewable hydrogen as delivering on the -- that very important piece of California's climate strategy. I also want to mention that both PG&E and SoCalGas received permission this year sell renewable -- procure and sell renewable gas at our utility-owned stations. We are actively working on the dairy pilot projects, which are progressing, and hopefully there will be more -- excuse me -- more news on that very soon. (SEMPRA)

Response: These comments are outside the scope of the current rulemaking because no changes are proposed to the methodology for calculating post-2020 allowance allocation to natural gas suppliers. Per Board Resolution 17-21, CARB will continue to track the implementation of SB 1440 (Hueso 2018), SB 1383 (Lara 2016), AB 2195 (Chau 2018), and other biomethane activities, as well as allowance allocations and compliance obligations for natural gas suppliers, to ensure adequate ratepayer protection from Program costs.

Natural gas suppliers currently receive annual allowance allocation for ratepayer protection based on the amount of gas they supplied to customers in 2011, exempting gas supplied to industrial and other covered entities. Allocation to natural gas suppliers declines annually by the cap adjustment factor, which is also applied to industrial allowance allocations. Some natural gas suppliers have expressed concerns regarding whether these allocation amounts reflect changes in demand or costs over time. Electricity sector GHG emissions and allowance allocations currently decrease with the Renewable Portfolio Standard, while natural gas suppliers are not experiencing an analogous decrease in the GHG intensity of their product. In light of the possibility of a renewable gas procurement mandate and other changes that may occur in this sector, staff may consider the need for adjustments to natural gas supplier allowance allocation if and when such a renewable gas procurement mandate is enacted.

C-3. Use of Allowance Value Allocated to Electric and Gas Utilities

Support for Use of Allocated Allowance Value Specifications

C-3.1. Comment:

USE OF ALLOWANCE VALUE

SCPPA appreciates helpful clarifying edits to §95892 on “Allocation to Electrical Distribution Utilities for Protection of Electricity Ratepayers.” These include:

- Adding “primary” to (d)(3) to describe ratepayer benefits as the exclusive beneficiaries of the program. We believe this recognizes that investments in California’s GHG reduction projects and programs (e.g., transportation electrification initiatives) by publicly-owned utilities (POU) can provide secondary benefits to others who may not be POU ratepayers.
- Requiring electrical distribution utilities to “demonstrate GHG emissions reductions” in (d)(5) so as not to preclude actions that may not necessarily be quantifiable. SCPPA notes that not all Program investments to reduce GHG emissions can be fully quantified – particularly given the numerous different types of quality projects, programs, and measures that can achieve GHG emissions reductions or climate benefits. For example, customer education programs and some transportation-related initiatives may not necessarily result in a specific, quantifiable benefit. While we do not believe that a specific quantification methodology is necessary or appropriate, we also believe that it is important that any metric used to measure the quantity of emissions reduction from a program not form the basis for determining the efficacy and overall quality of such a program.
- Qualifying projects or activities that will reduce sulfur hexafluoride (SF6) to the list of actions that can be taken using allocated allowance auction proceeds under “Other GHG Emissions Reduction Activities” in (d)(3)(C).
- Qualifying a more extensive list of projects, programs, or activities under energy efficiency and fuel-switching in (d)(3)(B). As California policy leaders aggressively push towards electrification of the transportation sector in particular, and in order to achieve the aggressive transportation electrification efforts proposed by Governor Brown, SCPPA Member utilities will need to continue their ongoing transportation (including port) electrification efforts and shift to developing an even broader scope of aggressive electrification efforts today (including buildings).
- Allowing for a reasonable 10-year deadline for expenditure of allocated allowances received in (d)(8). (SCPPA)

Comment:

I. Use of Allowance Value

LADWP supports CARB's proposal to clarify and further specify the uses of allowance value by enumerating the types of activities that are consistent with the goals of AB 32. The proposed changes will provide greater certainty on which activities and allowance uses presumptively meet the requirements of the Regulation. LADWP supports the inclusion of a category for "Other GHG Emission Reduction Activities" to capture activities that do not fall into one of the other three listed categories: 1) renewable energy, 2) energy efficiency and fuel-switching, and 3) non-volumetric return of

allowance proceeds to ratepayers. The establishment of this additional catchall category establishes a useful flexible framework for identifying and classifying other activities that may not necessarily fall into one of the other three categories, but still provide GHG emission reductions and ratepayer benefits. In addition, LADWP supports the use of allowance value "for reasonable administrative and outreach costs necessary to implement these uses of allowance value." (LADWP)

Comment:

SMUD appreciates the inclusion of additional flexibility for allowance proceeds use, and in particular the addition of Section 95892(d)(3)(C), allowing use for "Other GHG Emission Reduction Activities" (and the specific example of programs to reduce emissions of sulfur hexafluoride – SF₆). This is the kind of "catch all" language or "including but not limited to" language that SMUD has advocated for in our previous comments. SMUD also appreciates the careful crafting that allows use of proceeds for education and outreach expenditures related to allowed uses but does not require demonstration of GHG reductions for the outreach and education expenditures. (SMUD)

Response: Thank you for the support. Regarding demonstrating GHG emission reductions for each use of allocated allowance proceeds, the quantity of reductions must be estimated pursuant to section 95892(e)(4)(B) of the Regulation, which is further discussed in the Response to 45-Day Comment C-3.19.

Use of Allocated Allowance Value for Non-RPS-Eligible Renewable Energy

C-3.2. Comment:

Renewable Energy: The list of acceptable uses properly includes programs and projects related to "Renewable Energy or Integration of Renewable Energy." However, the list of specific renewable energy-related programs unnecessarily restricts expenditures to a subset of RPS-eligible programs, excluding renewable investments that are not RPS-program eligible, but which are still consistent with meeting the state's renewable energy and GHG reduction targets. This is particularly relevant for electric cooperatives who have made significant investments in non-GHG emitting resources consistent with state renewable energy goals, but are not part of the state's RPS-program mandates because of the cooperatives' unique statutory governance.

Authorized investments of cap-and-trade program allowance proceeds in renewable energy should include investments that go beyond merely meeting currently defined RPS mandates. This will become increasingly important as the state implements Senate Bill 100, and moves towards meeting a goal of carbon neutrality, which includes recognition of zero-carbon hydropower resources.

This section should also specifically recognize out-of-state renewables that play an integral role in meeting current and future emissions reductions targets, especially in cases in which EDUs have all-requirements contracts with out-of-state power providers.

Electric cooperatives have an obligation to provide affordable electric service to their rural consumers and need flexibility to use allowance value in a broad range of renewable energy investments. Broadening this section to authorize the use of allowances for all zero-carbon resources will enable EDUs to meet the challenge of SB 100 in the most cost-effective manner. The cooperatives recommend that the following be added to § 95892(d)(3)(A)(1) “an eligible renewable energy resource includes a renewable energy or zero-carbon facility that is located outside California, if the facility is connected to the WECC transmission system.” (GOLDENSTATEPOWER)

Comment:

Renewables Energy Projects

As the state moves increasing towards greater use of renewable energy, EDUs will be looking beyond projects that are RPS program-eligible. Authorized use of allowance value for renewable energy projects should not be limited to those defined in Public Utilities Code section 399.16(b)(1). This means expanding the definition to acknowledge all currently authorized RPS- eligible resources, as well as renewable resources that will facilitate California’s transition to carbon-neutrality. Beneficial renewable energy projects go far beyond meeting existing RPS mandates, as demonstrated by Senate Bill 100 (Statutes of 2018), and NCPA urges CARB to recognize that EDUs will need to procure and/or develop additional, non-RPS qualifying renewable resources, and to authorize the use of allowance value for that purpose. (NCPA)

Response: CARB supports efforts by electrical distribution utilities to meet the state’s Renewable Portfolio Standard and zero emissions goals in 2045. Pursuant to the requirements of AB 32 and now SB 100 (De Leon 2018), CARB must ensure California’s GHG emissions are reduced and do not lead to resource shuffling or result in higher GHG emissions elsewhere in the Western grid. Use of allocated allowance proceeds must not conflict with these efforts and requirements. Renewable or zero-carbon electricity that is not directly delivered to California does not reduce California’s GHG emissions or provide direct benefits to California ratepayers. Therefore, the amendments will continue to specify that expenditures of allocated allowance proceeds on renewable electricity not serving California load are not allowed.

Section 95892(d)(3)(A) of the Regulation addresses use of allocated proceeds for renewable energy and relies on Public Utilities Code sections 399.16(b)(1) and 399.16(d) to define eligible renewable energy projects. These sections specify that eligible renewable energy projects are those that directly deliver renewable electricity to California, whether or not they are located in the State. In addition, local and distributed renewable projects, which may not be RPS eligible but meet the statutory definition of renewable energy, are specifically allowed under section 95892(d)(3)(A)2. Section 95892(d)(3)(C), “Other GHG

Emission Reduction Activities,” excludes expenditures on other renewable energy because uses of allowance value for renewable energy must meet the requirements of section 95892(d)(3)(A).

Use of Allocated Allowance Value for Transportation Electrification Programs

C-3.3. Comment:

Energy Efficiency and Fuel Switching: The authorized use of allowance value for “Energy Efficiency and Fuel-Switching” should be revised to explicitly reference additional resource types. For example, the authorized use associated with EDU expenditures on EV programs should be included. The use of allowance value for utility-owned EVs and EV infrastructure provides particular benefits in areas like those served by the cooperatives. Because of the primarily rural location and socio-economic demographic, in addition to advancing the state’s EV objectives, utility owned EVs and EV charging infrastructure provides the added benefit of setting an example that EV ownership in remote locations is feasible. This example is necessary in areas where commercial charging stations and state funded projects are not likely to be placed. Access to utility owned-EV infrastructure would encourage EV ownership within the electric cooperatives’ service territories and further advance the state’s goals of increasing EV ownership. (GOLDENSTATEPOWER)

Comment:

For public power utilities, I wanted to focus our testimony on improvements for the POU use of allowance value. This includes addressing some potential concerns with the proposed quantification methodology that we fear might be overly prescriptive and could preclude investments in projects and programs that would reduce emissions, thinking about transportation electrification initiatives. That might not always be easily quantifiable... We don't want to see barriers to investments by publicly owned utilities in those types of programs.

[following clarifying question from Mary Nichols, the commenter further responded as follows:] For the use of allowance values, there is a provision about quantifying the emissions reductions that would be associated with those investments. And our concern is that not all of the programs and projects would be easily quantifiable. So that was the concern that we'd outlined in our comments. (SCPPA2)

Response: CARB agrees that these are beneficial approaches to reducing GHG emissions and appropriate uses of allocated allowance value the conform to the Regulation. Public electric vehicle infrastructure and zero-emission vehicles are specifically allowed uses under 95892(d)(3)(B). For a discussion on the methods to quantify GHG reductions for uses of allocated allowance value in the adopted amendments, including methods for electrification projects, see Response to 45-Day Comment C-3.19.

Use of Allocated Allowance Value for Disadvantaged Communities

C-3.4. Comment:

This comment letter calls attention to the following points... (6) why utility allowance money should prioritize disadvantaged communities.

(6) Utility allowance money should prioritize disadvantaged communities.

In the proposed amendments, CARB adds detail related to how utilities and natural gas companies should use money from allowances.³⁶⁹ We generally agree that more detail for how the money from allowances should be used is helpful. We also urge CARB to ensure that this detail includes a prioritization for projects located in and benefiting disadvantaged communities.

A critical component of California's transition to a cleaner energy future is ensuring that parts of the population are not left behind. "This 'climate gap' is of special concern for California, home to one of the most ethnically and economically diverse populations in the country."³⁷⁰ Not only is lessening this climate gap important, it is also consistent with California policy and requirements.

California, in various statutory provisions, has required prioritization of projects located in and benefiting disadvantaged communities. In particular, provisions related to the Greenhouse Gas Reduction Fund have required that funds, "where applicable and to the extent feasible...[d]irect investment toward the most disadvantaged communities and households in the state."³⁷¹ The Health and Safety Code further provides that a minimum amount of the money available be used for projects located in and/or benefiting disadvantaged and low-income communities.³⁷²

As related specifically to procurement of energy, the Legislature has recognized that renewable energy is often inaccessible to disadvantaged communities disproportionately impacted by pollution sources, and therefore it created explicit procurement requirements to help overcome obstacles. In particular, in Section 399.13(a)(7) of the Public Utilities Code, the Legislature mandates that utilities "shall give preference to renewable energy projects that provide environmental and economic benefits to communities afflicted with poverty or high unemployment, or that suffer from high emission levels of toxic air contaminants, criteria air pollutants, and greenhouse gases" when soliciting California-based renewable energy projects.³⁷³ The Legislature

³⁶⁹ Statement of Reasons, p. 64-65.

³⁷⁰ See Rachel Morello-Frosch, et. al., *The Climate Gap*, p. 5.

³⁷¹ Cal. Health & Safety Code § 39712.

³⁷² Cal. Health & Safety Code § 39713.

³⁷³ Cal. Public Utilities Code § 399.13(a)(7)(A). In recent amendments to the RPS statute, the Legislature affirmed that § 399.13(a)(7)(A) "applies to all procurement of eligible renewable energy resources . . . , whether the procurement occur through all-source requests for offers, . . . or other procurement

has further recognized the need for utilities to “actively seek bids for resources that are not gas-fired units located in communities that suffer from cumulative pollution burdens...[and] give preference to resources that are not gas-fired generating units located in those communities.”³⁷⁴

The Legislature also recognized the need for renewable energy and greenhouse gas requirements to help protect air quality and public health in disadvantaged communities. When passing the RPS, the Legislature specifically found that “[s]upplying electricity to California end-use customers that is generated by eligible renewable energy resources is necessary to improve California’s air quality and public health, particularly in disadvantaged communities.”³⁷⁵ The Legislature further prioritized minimizing air pollution in disadvantaged communities in the integrated resource planning process.³⁷⁶

To be consistent with the Legislature’s stated preference for projects to benefit disadvantaged communities, we request that the direction for utilities and natural gas providers for using money generated for allowances require that at a minimum the projects comply with the requirements of AB 1550 and that at least 25% of the projects are either located in or benefiting disadvantaged communities, at least 5% of the projects are located in or benefiting low-income communities, and at least 5% of the projects are located in or benefiting low-income communities within a half a mile of disadvantaged communities.³⁷⁷ (CEJA)

Response: Although not required by the Regulation, CARB supports use of allocated allowance proceeds by electrical distribution utilities (EDUs) to benefit disadvantaged and low income communities. Investor owned utilities (IOUs) return at least eighty five percent of the value of allocated allowances to ratepayers in the form of twice annual climate credit rebates. In 2016, \$665 million dollars, nearly 75 percent of the allowance value allocated to IOUs, was returned to residential ratepayers and another \$99 million dollars was returned to small businesses as a climate credit.³⁷⁸ These funds address the cost burden to ratepayers of compliance with the Program and benefit residential and small business IOU ratepayers, including those in disadvantaged and low-income communities. Beginning in 2017, 100 million dollars of IOU allocated allowance proceeds is annually set aside to fund the Solar on Multi-Family Homes Program overseen by the CPUC to encourage the development of solar projects in disadvantaged communities. Some POUs are also using allocated allowance value to benefit disadvantaged and low income communities through non-

mechanisms.” § 399.13(a)(7)(B). The Legislature pronounced that “[t]his subparagraph is declaratory of existing law.” *Id.*

³⁷⁴ See A.B. 1937 (2016).

³⁷⁵ Cal. Public Utilities Code § 399.11(e)(1).

³⁷⁶ Cal. Public Utilities Code § 454.52

³⁷⁷ Cal. Health and Safety Code § 39713.

³⁷⁸ CARB, Cap-and-Trade Program Summary of Vintage 2014–2016 Electrical Distribution Utility Allocated Allowance Value Usage (March 2018).

volumetric return of proceeds, energy efficiency, and renewable energy programs.

The comment suggests that a minimum percentage of allocated allowance proceeds spent be required to benefit low-income and disadvantaged communities. Some utilities may be unable to comply with such a requirement while also complying with the requirement that allowance proceeds primarily benefit their ratepayers. This is because not all utilities serve the same types of ratepayers or communities. Some utilities, for example the Port of Oakland, exclusively serve commercial or industrial ratepayers, and others have low-income communities but not disadvantaged communities in their service territories. Additionally, AB 1550—which the commenter refers to—applies to the use of Greenhouse Gas Reduction Fund (GGRF) monies, not the use of EDU allocated allowance proceeds. CARB encourages EDUs to continue and to bolster efforts to support disadvantaged and low-income communities through the use of allocated allowance proceeds and to report these aspects of their activities as part of their annual reporting to CARB.

Opposition to Use of Allocated Allowance Value for Natural Gas Equipment

C-3.5. Comment:

1) Auction Proceeds Should Not Be Used to Perpetrate Reliance on Natural Gas, Particularly Where Electric Options Are Available.

ARB should only allow use of auction proceeds in a manner that advances California's long-term decarbonization objectives. Independent studies on how California can achieve its 2050 greenhouse gas reduction targets agree that it will require widespread electrification of end uses of energy—such as transportation or space and water heating—that currently use natural gas and other fossil fuels. For example, the report *Policy Implications of Deep Decarbonization in the United States*, by Energy and Environmental Economics (“E3”) and the Deep Decarbonization Pathways Project, found that reducing emissions to 80 percent below 1990 levels requires three transitions: (1) highly efficient end use of energy in buildings, transportation, and industry; (2) decarbonization of electricity; and (3) fuel switching of end uses from high-carbon to low-carbon supplies, “primarily electrification.”³⁷⁹ A study conducted by Lawrence Berkeley National Laboratory similarly concluded that electrification of passenger vehicles and building heating was an essential component of reaching the 2050 climate goal.³⁸⁰ Similarly, a recent study conducted by E3 for the California

³⁷⁹ E3 and the Deep Decarbonization Pathways Project, *Policy Implications of Deep Decarbonization in the United States* at 49-50 (Nov. 2015), <http://usddpp.org/downloads/2015-report-on-policy-implications.pdf>.

³⁸⁰ Max Wei *et al.*, *Scenarios for Meeting California's 2050 Climate Goals*, University of California, Berkeley and Lawrence Berkeley National Laboratory (Sept. 2013), <http://www.energy.ca.gov/2014publications/CEC-500-2014-108/CEC-500-2014-108.pdf>.

Energy Commission (“CEC”) concluded that a high electrification scenario, described as a transition of the state’s buildings from using natural gas to low-carbon electricity for heating, offers the most promising path to achieving GHG reduction targets in the least costly manner.³⁸¹ By contrast, “the No Building Electrification with Power-to-Gas scenario is found to be among the most expensive Mitigation scenario in 2050 due to the high expense of providing renewable natural gas with relatively limited biofuels.”³⁸²

Given the critical importance of building electrification to cost-effectively meeting California’s climate goals, Earthjustice and Sierra Club California strongly support the explicit inclusion of “switching from natural gas, propane, or diesel to electric equipment” as a permitted use of auction proceeds by electric suppliers.³⁸³ However, with regard to the use of auction proceeds by gas suppliers, the Proposed Amendments would encourage the continued reliance on fossil fuels, even where electric options are available. For example, under the Proposed Amendments, gas suppliers can use auction proceeds for “energy-efficient equipment rebates.”³⁸⁴ This has the potential to lock-in new combustion-based end uses despite the deeper greenhouse gas reductions that could be achieved by replacement with a highly efficient electric option. As currently drafted, the Proposed Amendments frustrate achievement of the aggressive greenhouse gas reductions needed to achieve California’s climate objectives...

Accordingly, Subsection (d)(3) of Section 95893 should be revised as follows:

- (3) Allowance value, including any allocated allowance auction proceeds, obtained by a natural gas supplier must be used exclusively for the primary benefit of retail natural gas ratepayers of each natural gas supplier, consistent with the goals of AB 32, and may not be used for the benefit of entities or persons other than such ratepayers. Allocated allowance auction proceeds must be used to reduce greenhouse gas emissions or returned to ratepayers using one or more of the approaches described in sections 95893(d)(3)(A)-(C) and may also be used to pay for administrative and outreach costs described in section 95893(d)(4). Auction proceeds may only be used to replace natural gas equipment with more efficient natural gas equipment where efficient electric alternatives are unavailable. (SIERRACLUB-EARTHJUSTICE)

Response: CARB agrees with the commenter that electrification plays an important role in reducing GHG emissions and that long-term GHG implications must be taken into account in assessing whether an activity reduces GHG emissions. However, the commenter’s suggested amendment is prescriptive relative to CARB’s overall approach to the use of allocated allowance value by

³⁸¹ California Energy Commission, Deep Decarbonization in a High Renewables Future (June 2018) at 58, <https://www.ethree.com/wp-content/uploads/2018/06/Deep-Decarbonization-in-a-High-Renewables-Future-CEC-500-2018-012-1.pdf>.

³⁸² *Id.* at 59.

³⁸³ Proposed Amendments § 95892(d)(3)(B)(5).

³⁸⁴ Proposed Amendments § 95893(d)(3)(A)(1).

natural gas suppliers and electrical distribution utilities. For example, a scenario is possible where efficient electric alternatives are indeed available, but difficult to source or substantively unaffordable, especially in existing housing units. In this case, the suggested amendment would preclude using allocated allowance proceeds to replace aging and inefficient natural gas equipment. CARB believes that the existing CPUC and CARB regulatory requirements, the adopted amendments, and the requirements of SB 1477 (Stern, 2018) appropriately limit the use of these proceeds at this time and that this additional restriction is not needed. Per SB 1477, use of allocated allowance proceeds by natural gas suppliers on the new Technology and Equipment for Clean Heating (TECH) Initiative are required to target technologies that will help the State achieve its long-term GHG reduction goals, and expenditures on the new Building Initiative for Low-Emissions Development (BUILD) Program are required to “encourage building designs that reduce greenhouse gas emissions beyond industry practices and to offer greater incentives for larger projected greenhouse gas emissions reductions.” The declining emissions cap requires significant statewide GHG reductions in coming years, and natural gas suppliers will need to consider how to help achieve these long-term GHG reductions when using any allocated allowance value to support equipment purchases.

Use of Allocated Allowance Value for Renewable Natural Gas

C-3.6. Comment:

2. Equitable Treatment for Allowable Uses of Allowance Proceeds

ARB’s draft amendments attempt to clarify how electric and natural gas utilities are allowed to use the revenue from their allocated allowances by specifying eligible categories of activities. As currently drafted, the amendments contain more allowable uses for the electric distribution utilities (EDUs) than natural gas utilities. “Renewable Energy” is a broad category that encompasses construction and procurement of energy from renewable electricity projects but there is no comparable category for natural gas suppliers with respect to RNG projects, which also reduce GHGs (see benefits noted above). Similarly, the EDU allowable uses also include infrastructure or other support for “active transportation, zero-emission vehicles, or public transportation” but there is no allowable use for near-zero emission vehicles or natural gas vehicles fueled by RNG which actually provide a zero-GHG transportation option, especially for medium- and heavy-duty vehicles. In the interest of equitable treatment and to ensure that important GHG reduction activities are not excluded, the GUG urges Staff to address this discrepancy.

To assist with remedying these concerns, the GUG makes the following suggested edits to the regulation text (edited sections are in red [**bold**]):

1) Revised Section §95893(d)(3)

~~(3) Auction proceeds and a~~ Allowance value, including any allocated allowance auction proceeds, obtained by a natural gas supplier must shall be used exclusively for the primary benefit of retail natural gas ratepayers of each natural gas supplier, consistent with the goals of AB 32, and may not be used for the benefit of entities or persons other than such ratepayers. Allocated allowance auction proceeds maymust be used to reduce greenhouse gas emissions or returned to ratepayers using one or more of the approaches described in sections 95893(d)(3)(A)-(C)(D) and may also be used to pay for administrative and outreach costs described in section 95893(d)(4). ~~Any allocated allowance auction proceeds returned to ratepayers must be done in a non-volumetric manner.~~

(A) Biomethane Projects or Integration of Biomethane Projects. Funding programs or activities in the following categories:

- 1. Construction of projects to develop biomethane (as defined in section 95802) that will directly interconnect with a common carrier pipeline in California, or procurement of biomethane by a natural gas supplier;**
- 2. Support for biomethane projects that are ratepayer-owned or located within the natural gas supplier's service territory; or**
- 3. Infrastructure projects or other projects supporting near-zero emission vehicles.**

(A)(B) Energy Efficiency. Funding programs or activities designed to reduce greenhouse gas emissions through reductions in energy use in the following categories:

1. Energy efficient equipment rebates;
2. Energy-efficient building retrofits;
3. Other projects that reduce energy demand;

(B)(C) Other GHG Emission Reduction Activities. Funding programs or activities other than energy efficiency, for which the natural gas supplier can demonstrate GHG emission reductions per section 95893(d)(5). This includes funding projects or activities that reduce emissions of uncombusted natural gas and that are not mandated by any federal, state, or local health and safety requirements, legal settlement, enforcement action, Senate Bill 1371 (Morrell, 2014), or the Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities (California Code of Regulations, sections 95665-95677).

(C)(D) Non-Volumetric Return to Ratepayers. Distribution of allocated allowance auction proceeds to some or all ratepayers in a non-volumetric manner, either on- or off-bill.

2) Revised section § 95893(d)(4).

(4) Administrative and Outreach Costs. Allocated allowance auction proceeds may be used for administrative costs only in so far as those costs are solely limited to necessary costs for the implementation of sections 95893(d)(3)(A)-~~(C)(D)~~. Allocated allowance auction proceeds may be used for outreach that supports the implementation of the approaches described in sections 95893(d)(3)(A)-~~(C)(D)~~.

3) Revised section § 95893(d)(5).

*(5) Natural gas suppliers must demonstrate GHG emissions reductions, pursuant to section 95893(e)(4)(B), **as applicable**, for each use of allocated allowance auction proceeds described in sections 95893(d)(3)(A)-~~(B)(C)~~ that is undertaken.*

RNG is an immediately available resource, representing a significant and unique opportunity to capture SLCPs while at the same time displacing more carbon-intensive fuels at the end-use. Investing in RNG does not come at the expense of other approaches to GHG reduction and is found to be as cost-effective or better than many alternative methods of reducing GHGs.³⁸⁵ Including additional activities that reduce GHG emissions such as bringing RNG into the natural gas system and supporting near-zero emission vehicles in the transportation sector would help meet the goals of AB 32. Therefore, the GUG supports equitable treatment in the allowable uses of allowance proceeds and requests that Staff consider the suggested regulation language revisions above...

In conclusion, the GUG believes that the viability and health of the post-2020 Cap-and-Trade program can be strengthened through... providing equitable treatment of allowable GHG-reducing activities for both electric and natural gas suppliers... (JOINTGASUTILS)

Comment:

SDG&E can appreciate Staff's intention to clarify allowable uses of auction proceeds, although we believe that the currently proposed language could benefit from... including additional activities that reduce GHG emissions such as bringing renewable natural gas (RNG) into the natural gas system. (SDG&E)

Comment:

VIII. Equitable Treatment of Eligible Allowance Value Uses

PG&E appreciates ARB's overall efforts to provide greater clarity on the allowable uses of revenue from allowances directly allocated to electric distribution utilities (EDUs) and natural gas (NG) suppliers. However, we continue to remain concerned with inequitable treatment between eligible uses for EDUs and NG suppliers. We recommend the inclusion of allowable cost categories for NG suppliers for renewable natural gas infrastructure, and other projects supporting GHG emissions reductions and near-zero

³⁸⁵ https://www.socalgas.com/1443741887279/SoCalGas_Renewable_Gas_Final-Report.pdf

emissions vehicles or public transportation. These activities would help drive the most cost-effective and innovative GHG reduction strategies and are broadly consistent with the 'renewable energy' category for EDUs. PG&E supports the specific regulatory suggestions offered in the Gas Utility Group (GUG) comment letter to help address this disparity.

By limiting eligible uses of allowance value, the proposed framework excludes other potentially beneficial activities and viable emission reduction measures. Other solutions and technologies need to be encouraged and funded as a variety of GHG reduction approaches will benefit more customers who want to reduce GHG emissions. PG&E recommends the proposed regulation be amended to provide the same opportunities for both EDUs and NG suppliers. (PG&E)

Comment:

And we'd also like to urge staff to provide equitable treatment of the types of projects that utilities can spend their allowance revenue on.

We believe that renewable natural gas projects are also renewable energy, just as renewable electricity projects are and should be explicitly allowed. (PG&E2)

Comment:

And then I wanted to touch on the other point, the equitable treatment of allowance proceeds. The electric utilities are appropriately being allowed to use allowance proceeds to invest in infrastructure improvements, whether it's renewable energy or in support of zero-emission vehicles. We believe that gas utilities should be given the same permissions. Renewable gas is a renewable energy, and we would like to do more with that. And allowing us to use our allowance proceeds in that way, we think makes a lot of sense. Similarly in support of near zero-emission tech -- infrastructure in support of near zero-emission vehicles and fleets. We think it makes sense to allow us to use our allowance proceeds in that regard as well, and we would like to continue that. We would like to make that request to the Board and continue those conversations with the staff. (SEMPRA)

Response: The commenters request that, in general, natural gas suppliers be allowed to use allocated allowance proceeds in manners similar to electrical distribution utilities (EDUs). The commenters make specific requests that renewable natural gas and transportation-related projects be allowed uses of allocated allowance proceeds for natural gas suppliers.

In a preliminary discussion draft of regulatory amendments released for the March 2, 2018 workshop during the early and informal stages of this rulemaking, CARB proposed a single regulatory section to describe allowed uses of allocated allowance value for both EDUs and natural gas suppliers. In response, CARB received comments from natural gas suppliers requesting that allowed uses of value be listed separately for EDUs and natural gas suppliers. CARB has been

responsive to this request and has also simplified the text in each section to focus on those uses that CARB expects to be most relevant to EDUs and to natural gas suppliers, respectively.

Uses of allocated allowance value not specifically listed in sections 95893(d)(3)(A), 95893(d)(3)(C), or 95893(d)(4) of the Regulation, but that meet all applicable regulatory requirements, are allowed for natural gas suppliers under section 95893(d)(3)(B), "Other GHG Reduction Activities." For example, a transportation-related project explicitly discussed for EDUs in section 95892(d)(3)(B) or a biomethane project may be allowed for a natural gas supplier under section 95893(d)(3)(B) provided that GHG reductions could be demonstrated for the project pursuant to section 95893(d)(5). CARB did not explicitly allow these uses in the regulatory text since they would be uncommon uses of proceeds due to the fact that most natural gas supplier proceeds will be distributed to ratepayers as climate credits pursuant to CPUC Proceeding R.14-03-003. CARB encourages natural gas suppliers to maximize GHG reductions and ratepayer benefits when exercising discretion over their use of allocated allowance value. CARB also encourages natural gas suppliers to meet with staff regarding questions they may have as CARB implements the new provisions. Given this, CARB does not believe that further amendments are necessary.

Opposition to Use of Allocated Allowance Value for Undefined GHG Reduction Activities

C-3.7. Comment:

In addition, Subsection (3)(B), which allows undefined greenhouse gas emission reduction activities to qualify for funding, should be eliminated. The one listed example of such an activity, actions that reduce fugitive emissions of uncombusted gas, can simply be enumerated in Subsection 3(A). This will improve clarity on the types of activities for which use of auction revenue is appropriate. In particular, ARB should not allow auction revenue to be used to fund "renewable natural gas" projects. "Renewable natural gas" is not defined in statute and can be interpreted to mean gas that is generated from the anaerobic decomposition of organic matter or gas that is synthetically produced through biomass gasification or by power-to-gas projects.

Because the former already receives significant public revenue streams, such as through the Low Carbon Fuel Standard, additional revenue through auction proceeds is not appropriate. With regard to the latter, costs of production are extremely high and benefits are far less given that methane is not being captured that would otherwise be released into the atmosphere: instead, methane is synthetically produced where it would not have existed. ARB should squarely direct auction proceeds at actions that either reduce demand for methane or reduce its formation and release into the atmosphere, not those that create methane synthetically.

Accordingly, Subsection (d)(3) of Section 95893 should be revised as follows:

(3) ...

(A) Energy Efficiency. Funding programs or activities designed to reduce greenhouse gas emissions through reductions in energy use in the following categories.

1. Energy efficient equipment rebates for;
2. Energy-efficient building retrofits;
3. Other projects that reduce energy demand;
4. Activities that reduce emissions of uncombusted natural gas and that are not mandated by any federal, state, or local health and safety requirements, legal settlement, enforcement action, Senate Bill 1371 (Morrell, 2014), or the Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities (California Code of Regulations, sections 95665-95677).

~~(B) Other GHG Emission Reduction Activities. Funding programs or activities other than energy efficiency, for which the natural gas supplier can demonstrate GHG emission reductions per section 95893(d)(5). This includes funding projects or activities that reduce emissions of uncombusted natural gas and that are not mandated by any federal, state, or local health and safety requirements, legal § 95893. Allocation to Natural Gas Suppliers for Protection of Natural Gas Ratepayers. 66 settlement, enforcement action, Senate Bill 1371 (Morrell, 2014), or the Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities (California Code of Regulations, sections 95665-95677).~~

~~(C)(B) Non-Volumetric Return to Ratepayers. Distribution of allocated allowance auction proceeds to some or all ratepayers in a nonvolumetric manner, either on- or off-bill. (SIERRACLUB-EARTHJUSTICE)~~

Response: The commenter requests that CARB remove the proposed new section 95893(d)(3)(B), “Other GHG Reduction Activities,” from the list of allowable uses of allocated allowance value by natural gas suppliers. CARB declines to make the requested change at this time. The “Other GHG Reduction Activities” category provides flexibility to natural gas suppliers to adapt their use of value to their specific circumstances and exercise creativity in pursuing GHG emission reductions which benefit ratepayers. For example, they may use allowance value to fund installation of electric vehicle charging stations, which provide a service to their ratepayer base while reducing net emissions. Activities

related to renewable natural gas may be allowed uses of allocated allowance value if the natural gas supplier is able to demonstrate expected GHG emission reductions for the activities pursuant to section 95893(d)(5) and if the activities are consistent with other regulatory requirements.

This flexibility is most immediately relevant to publicly owned natural gas utilities, which are not subject to CPUC jurisdiction. Public utility gas corporations, which supply over 99 percent of the retail natural gas supplied in California, are subject to CPUC requirements and SB 1477 (Stern, 2018), which place additional requirements on their use of allocated allowance value.

Use of Allocated Allowance Value for Cogeneration

C-3.8. Comment:

Another authorized use under section 95892(d)(3)(B) should include funding for cogeneration and combined heat and power projects. These projects have higher efficiency rates than traditional combustion generation, and specifically meet the stated objective of reducing GHG emissions through “changes to lower emission intensity energy sources.” (ISOR, p. 5) Since cogeneration investments made by the cooperatives still have significant debt and costs associated with them, such as the large investment by Plumas-Sierra REC to build a high-efficiency cogeneration plant specifically designed and built to comply with AB 32, it is important that perceived changes in the authorized use of allowance value not jeopardize funding for past investments. For example, the PSREC cogeneration facility will have 10 years of principle and interest payments left in 2020, and the use of allowance value for this GHG- reducing project was an integral part of the cooperative’s GHG reduction plan. (GOLDENSTATEPOWER)

Response: CARB declines to make cogeneration or combined heat and power projects a specific authorized use of EDU allocated allowance value. To the extent that the use of allocated allowance proceeds for a cogeneration facility meets the requirements of section 95892(d)(3)(C), it may be an allowable use. Not all combined heat and power (CHP) generation is more GHG emissions efficient compared to the alternative of purchasing electricity from the grid and using efficient boilers to supply thermal energy needs. The GHG emissions of CHP or cogeneration projects vary significantly. Over time, when evaluated against an increasingly lower-GHG-emissions intensive fleet of resources serving California load per SB 100, these resources may generate higher GHG emissions than electricity purchased from the grid, and thus may no longer contribute to reaching California’s GHG emissions reduction goals.

Use of Allocated Allowance Value to Purchase Allowances

C-3.9. Comment:

Use for procuring allowances for Compliance: SMUD strongly supports the continued ability to use allowance proceeds to purchase allowances. Use of allowance proceeds to procure allowances for compliance is fully consistent with goals of AB 32. The proceeds come from the sale of allowances that could be used for compliance (through POU consignment) so it's logical that monetization of those allowances can also be used to also establish compliance through the procurement of allowances. Such use benefits ratepayers, as it allows the option of exchanging the allocated allowances for allowances that can be placed in entity holding accounts, and traded if beneficial to the ratepayers, or used for compliance if beneficial to ratepayers. Such flexibility also creates additional liquidity for the secondary allowance market. There is no legislative directive in AB 398 or in AB 32 that suggests a policy by the Legislature to prohibit this use.

SMUD continues to believe that any actual prohibition, or even lack of clarity about such use, could have significant negative consequences, including unnecessary rate increases, hoarding of allowances and allowance price volatility. Rate increases could result because the proposal could force POUs to seek other funding for needed allowance procurement. The proposal also could reduce liquidity in the cap and trade market, causing POUs to designate additional allowances directly for compliance rather than having them available for trading. A plausible scenario could then be that entities who need additional allowances will be unable to find them, causing unnecessary volatility, price spikes, and uncertainty in the market. Such results would run counter to the goal of a cap and trade regulation that is designed to cost effectively achieve carbon reductions by allowing trading under the cap – restricting trade will restrict cost-effectiveness of the market.

While use of allowances for compliance is not expressly prohibited in the 45-day language, such use is not expressly allowed either. The 45-day language does add a proposed prohibition on the use of allowance proceeds to pay for the costs of "... the Cap and Trade Regulation ...", in addition to the costs of complying with MRR and the costs of the AB 32 Cost of Implementation Fee Regulation. SMUD understands this to refer to the administrative costs of compliance with the Cap and Trade Regulation, rather than a compliance cost represented by allowance procurement, as the two current categories prohibited in this sentence cover essentially administrative costs – reporting and ARB administration. SMUD requests clarification of this proposed change as follows:

Use of allocated allowance auction proceeds to pay for the costs of complying with MRR, ~~or~~ the AB 32 Cost of Implementation Fee Regulation, or administrative costs necessary for compliance with the Cap and Trade

Regulation is prohibited, except for the costs allowable pursuant to sections 95892(d)(3)-(4).

In addition, SMUD believes some clarification could be achieved by a slight change to the added definition of “Volumetric” in Section 95802(a), as follows:

“Volumetric,” with respect to sections 95892 and 95893, describes an electrical distribution utility’s or natural gas supplier’s distribution of allocated allowance auction proceeds **directly** to one or more of its ratepayers based on the current or recent amount of electricity, natural gas, or other relevant utility service delivered to those ratepayers, such that higher usage results in ratepayers’ receipt of more funds.

A related point is that the proposed language in 95892(d)(3), which changes the word “may” to “must” in the phrase reading “... allowance auction proceeds ~~may~~ must be used to reduce greenhouse gas emissions or returned to ratepayers ...” is not clear about the use of allowance auction proceeds for allowance procurement. If allowed, as SMUD hopes, use of allowance proceeds to procure allowances would likely fall under the allowed use in 95892(d)(3)(D) – Non-Volumetric Return to Ratepayers. SMUD believes this is acceptable, as use of allowance proceeds to procure allowances represents an indirect covering of compliance costs that does not appear on a customer’s bill volumetrically. In fact, since POUs can simply place administrative allowances in compliance accounts directly, use of proceeds to procure allowances and substituting those procured allowances in compliance accounts is clearly a non-volumetric return to ratepayers.

SMUD believes that even greater clarity on this would be achieved if ARB expressly included wording stating that use of proceeds to procure allowances for compliance was allowed. One way to add clarification involves changing the initial paragraph in 95892(d)(3). Here, SMUD notes that the words “... used to reduce greenhouse gases or ...” in the paragraph are no longer necessary, as the allowed uses under 95892(d)(3)(A)-(C) describe GHG reducing activities and allowed use (D) is the non-volumetric return option (which does not reduce GHG). SMUD suggests language as follows:

95892(d)(3): Auction proceeds and Allowance value, including any allocated allowance auction proceeds, obtained by an electrical distribution utility shall ~~must~~ be used exclusively for the primary benefit of retail electricity ratepayers of each electrical distribution utility, consistent with the goals of AB 32, and may not be used for the primary benefit of entities or persons other than such ratepayers. Allocated allowance auction proceeds ~~may~~ must be **used to reduce greenhouse gas emissions or** returned to ratepayers using one or more of the approaches described in sections 95892(d)(3)(A)-(D) and may also be used to procure allowances or pay for administrative and outreach costs described in

section 95892(d)(4). . . . ~~Any allocated allowance auction proceeds returned to ratepayers must be returned in a non-volumetric manner.~~

Alternatively, ARB could simply add an explicit provision allowing use of proceeds to procure allowances, with restrictions to preserve disallowed uses of allowance proceeds, as follows:

95892(d)(5): Allocated allowance auction proceeds may be used to procure allowances for compliance, provided that the procured allowances are not used to meet compliance obligations for electricity sold into the California Independent System Operator markets, or for compliance obligations related to the sale of useful thermal energy in which a market carbon price is included.

Finally, another alternative to address the concern that allowing allowance proceeds to procure allowances will allow use to cover compliance obligations related to wholesale sales, which is a use prohibited for the original allowances, is to modify section 95892(d)(7) as follows:

95892(d) ~~(5)(7)~~ Prohibited Use of Allocated Allowance Value. Use of the value of any allowance allocated to an electrical distribution utility other than for the primary benefit of retail electricity ratepayers consistent with the goals of AB 32 is prohibited, including:

(A) Use of such allowances or allowance value to meet compliance obligations for electricity sold into the California Independent System Operator markets.

(B) Use of such allowances or allowance value to meet compliance obligations related to sale of useful thermal energy.

(C) Use of allocated allowance auction proceeds to pay for the costs of complying with MRR, or the AB 32 Cost of Implementation Fee Regulation (California Code of Regulations, sections 95200-95207), or administrative compliance costs of the Cap-and-Trade Regulation is prohibited, except for the costs allowable pursuant to section 95892(d)(3)-(4).

(D) Use of allocated allowance auction proceeds to pay for costs of lobbying, advocacy, employee bonuses, or shareholder dividends is prohibited.

(E) Returning allocated allowance auction proceeds directly to ratepayers in a volumetric manner is prohibited. (SMUD)

Comment:

We also believe that the allowance proceeds should continue to be able to be used to procure allowances for compliance with reasonable metrics about using those allowances, similarly to the ones that were already allocated. (SMUD2)

Response: The commenter requests several specific changes to provisions related to the use of allocated allowance proceeds, and CARB generally declines to make these changes for the following reasons.

The changes that CARB has made to sections 95892(d) aim to ensure that allocated allowance proceeds benefit ratepayers and reduce GHG emissions, consistent with the goals of AB 32. CARB has clarified that using allocated allowance proceeds for purchasing allowances; lobbying; employee bonuses; shareholder dividends; or activities mandated by legal settlement, administrative action, or court order is prohibited. As explained in the Initial Statement of Reasons:

“The proposed amendments also modify the Regulation to expressly clarify staff’s initial intention that allowance proceeds may not be used for costs of complying with the Cap-and-Trade Regulation, other than as specified in the proposed amendments, or for lobbying that is not specifically tied to ratepayer protection or the reduction of GHGs. As EDUs transition from providing volumetric returns, which has been prohibited by the Regulation since 2017, to other allowable uses, these changes ensure allocated allowance proceeds are not returned volumetrically through the purchase of allowances, not used more generally to support compliance with the Regulation, and not spent on lobbying. These clarifications also apply to NG suppliers. These changes support CARB oversight of the uses of allocated allowance proceeds to ensure usage on its main purposes – reduction of GHG emissions and ratepayer benefit.”

The comment also requests that “directly” be added to the definition of the term “Volumetric.” CARB has incorporated this change to clarify that direct spending of allocated allowance proceeds on renewable electricity or other allowed uses does not constitute a volumetric return of proceeds, and is therefore not prohibited by section 95892(d)(7)(D) or 95893(d)(7)(C). Purchasing allowances with allocated allowance proceeds is clearly prohibited by the Regulation, so purchasing allowances—a potentially indirect volumetric return of proceeds that would no longer be captured by this changed definition of “Volumetric”—remains prohibited.

Use of Allocated Allowance Value for Education

C-3.10. Comment:

Furthermore, while use of allowance proceeds for administration and outreach are included in the list of authorized uses, the ensuing definition of outreach appears to preclude *educational* outreach, which should be corrected. (GOLDENSTATEPOWER)

Comment:

Administrative and Outreach Costs

Costs associated with administration and outreach can be varied. Administrative costs are more easily defined than those used for outreach. For example, educational programs should be acceptable uses of allowance value, but do not necessarily fall within the description of supporting other uses of allowance value covered by sections 95892(d)(3)(A)-(D), such as promoting awareness of a specific rebate and the associated benefits. (ISOR, p. 107). Rather, education programs targeted at the importance of reduced electricity usage and associated GHG reductions do provide direct benefits to the electricity ratepayers by raising awareness of the need for GHG reductions, and are critical in ensuring that the state's long-term climate goals are achieved. It is important that this section be defined and implemented in a manner that allows for such expenditures. (NCPA)

Comment:

Additionally, the draft regulations seem to exclude support for education and outreach activities, such as costs associated with outreach efforts related to distribution of the California Climate Credit. This applies to both the Electric Distribution Utility and the Natural Gas Supplier sections (§ 95892 and § 95893 of the Cap-and-Trade Regulation). While the benefits of education and outreach are not quantifiable, they are beneficial and should be allowed.

SDG&E can appreciate Staff's intention to clarify allowable uses of auction proceeds, although we believe that the currently proposed language could benefit from explicitly including education and outreach activities as allowable costs... (SDG&E)

Response: Educational programs may have value for achieving GHG reductions and benefitting ratepayers, but the effectiveness of such programs for these purposes is sometimes uncertain and difficult to evaluate. Therefore, CARB believes that expenditures of allocated allowance proceeds on educational programs should be limited in favor of projects and activities for which ratepayer benefit and GHG reductions can be more directly demonstrated.

In response to stakeholder comments, the 15-day revisions include educational programs with specific GHG emission reduction goals that do not have quantifiable GHG emissions reductions as an allowable use of allocated allowance proceeds, with a cap on maximum annual spending. CARB recognizes the potential value of educational programs, and changes to the Regulation allow for the limited use of allocated proceeds on educational programs in order to ensure that most allocated allowance value is either used for projects and activities for which GHG emissions can be demonstrated or returned to ratepayers. Educational programs for which GHG emission can be demonstrated pursuant to the reporting requirements of the Regulation may be

allowable under the “Other GHG Reduction Activities” category, which does not have a spending cap. Outreach that is necessary to directly support other allowable uses is also permitted under section 95892(d)(4).

Limiting Use of Allocated Allowance Value for Education

C-3.11. Comment:

2) Administrative and Outreach Costs Should Be Limited to Implementing Specific Greenhouse Gas Reduction Programs and Not General Education.

Consistent with the regulation’s focus on benefitting ratepayers and reducing greenhouse gas emissions, general consumer education about natural gas – which accomplishes neither of these objectives – is not an appropriate use of allowance funds. Earthjustice and Sierra Club California therefore strongly support the proposed language specifying that the use of greenhouse gas reduction funds for administrative expenditures should be “solely limited to necessary costs for the implementation” of the programs.³⁸⁶

As described in ARB Staff’s Initial Statement of Reasons, permissible administrative and outreach costs are limited to the “costs necessary to implement the GHG-reducing activities.”³⁸⁷ For example, appropriate outreach costs are limited to expenditures necessary “to make potential beneficiaries aware of the activity and its benefits” – such as information describing the benefits of a rebate and how the customer can participate.³⁸⁸ These types of communications are necessary to notify customers that a program exists and to encourage their participation, which, to state the obvious, is necessary to achieve the intended reductions in greenhouse gases. These types of acceptable communications differ markedly from general outreach and education activities that are unrelated to programs available to the customer, do not encourage customers to take any actions to reduce gas use, and therefore will do nothing to reduce greenhouse gas emissions. In fact, the opposite may be true.

General outreach or educational activities that are not specific to particular programs can present one-sided perspectives on complicated and controversial topics, and foster complacency with the continued combustion of fossil fuels. For example, SoCalGas has circulated outreach materials that generally describe “renewable gas” to residential or commercial customers who have no options to purchase this product for their own use, an example of which is attached as Attachment A.³⁸⁹ The flyer does not

³⁸⁶ Proposed Amendments § 95892(d)(4).

³⁸⁷ California Air Resources Board, Staff Report: Initial Statement of Reasons (Sept. 4, 2018) at 114 (“For example, for an energy efficiency rebate program allowable outreach costs may include materials sent to ratepayers to promote awareness of the rebate and its energy, environmental and costs savings benefits.”).

³⁸⁸ *Id.*

³⁸⁹ Attachment A, SoCalGas, “Renewable Natural Gas: Part of California’s Renewable Energy Future.” [The attachment is a flyer providing a brief overview of renewable natural gas. This document can be

encourage the recipients to take any action that would benefit them, such as using gas more efficiently. The flyer also will not result in reductions in greenhouse gas emissions because there is no action the customer can take upon receiving it; SoCalGas does not sell biomethane to these customers. Instead, the flyer describes the positive aspects of the fuel while neglecting to mention its flaws – such as the fact that its combustion releases harmful criteria pollutants like NOx and particulate matter, that leakage of this fuel from pipelines has the same serious climate impacts as fossil natural gas, or that its viability as a climate solution is limited due to its extremely low potential supply. In this light, the flyer’s statement that “SoCalGas is working diligently to bring cost-effective sources of RNG to its customers” can be seen as an attempt to make customers feel more positively about the utility, build its corporate image as a company that cares about greenhouse gas emissions, and provide a false sense that reliance on natural gas can continue because biomethane will someday be available as a climate-friendly substitute fuel.

Because these types of outreach materials deviate greatly from the cap and trade regulation’s clear and targeted objectives of benefitting customers and reducing greenhouse gases, they are a highly inappropriate use of program funds. Earthjustice and Sierra Club California strongly support the regulation’s current language limiting spending to administrative and outreach costs that are strictly necessary for program implementation. In order to make this intent more clear, Subsection (d)(4) of Section 95893 should be revised as follows:

- (4) Administrative and Outreach Costs. Allocated allowance auction proceeds may be used for administrative costs only in so far as those costs are solely limited to necessary costs for the implementation of sections 95893(d)(3)(A)-(C). Allocated allowance auction proceeds may be used for outreach that supports is needed for the implementation of the approaches described in sections 95893(d)(3)(A)- ~~(C)~~(B). (SIERRACLUB-EARTHJUSTICE)

Response: Thank you for the support on limiting administrative and outreach costs to those necessary to administer programs or activities that are allowable under sections 95892(d)(3)(A)-(D) and 95893(d)(3)(A)-(C). Section 95892(d)(4), for electrical distribution utilities, and section 95893(d)(4), for natural gas suppliers, of the revised Regulation specify that outreach programs must “support the implementation of the projects or activities” allowed pursuant to sections 95892(d)(3)(A)-(D) and 95893(d)(3)(A)-(C).

See Response to 45-Day Comment C-3.10 for a discussion on proposals to utilize allowance value for educational programs. CARB will continue its oversight on the use of allocated allowance proceeds to ensure that all uses,

viewed in the original comment letter, available in the comment log for Cap and Trade 2018 at <https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=ct2018.>

including for outreach and educational materials, meet all requirements of the Regulation

Use of Allocated Allowance Value for Wildfire Risk Reduction

C-3.12. Comment:

Furthermore, in this era of emerging awareness of the adverse climate impacts associated with wildfires, permissible uses of allowance value should explicitly recognize programs and projects that directly attribute to carbon avoidance through wildfire mitigation. Programs and projects that provide electric utility infrastructure resiliency and wildfire prevention are valid expenditures of allowance value that primarily benefit the electricity ratepayers that would be most immediately and adversely impacted by a wildfire event. The state has already recognized this direct link, authorizing greenhouse gas reduction funds (GGRF) to such projects. This funding, however, should not be used as grounds to preclude eligibility of utility-specific projects, as targeted programs and measures within an EDU's service territory could significantly complement statewide expenditures. Additionally, and of significant relevance to the electric cooperatives, the GGRF funds that are allocated to Cal Fire and other California-based agency expenditures are of little or minimal impact to GSPC members, since cooperatives' service territories are dominated by federal lands, and not state-owned lands. (GOLDENSTATEPOWER)

Comment:

GHG Emission Avoidance

NCPA urges CARB to explicitly recognize programs and projects that directly attribute to *carbon avoidance* as permissible use of allowance value. In Senate Bill (SB) 901, the state designated \$1 billion from the Greenhouse Gas Reduction Fund (GGRF) for this purpose, acknowledging that investments in wildfire mitigation have a direct impact on GHG emissions. However, investments in statewide programs are not enough. EDUs such as NCPA's member utilities are uniquely situated to provide direct and impactful benefits to their electricity ratepayers that mitigate the risk of wildfires and the ensuing destruction, including GHG emissions. Utility infrastructure resiliency and wildfire prevention projects and measures would provide direct benefits to electricity ratepayers, as those ratepayers would be the first, and most directly impacted individuals in the event of a wildfire event. While this is true of all utility ratepayers, in the context of the local jurisdictions served by the POU's, this is even more immediately relevant, where targeted and individualized programs and measures within an EDU's service territory can be designed and implemented to complement the broader, statewide efforts funded by GGRF. NCPA understands that emissions avoidance has not traditionally been considered within the context of emissions reductions, but that does not mean that such expenditures are not appropriate. Rather, the proposed amendments to the regulation provide the agency with the ideal opportunity to address this clarification. (NCPA)

Comment:

For public power utilities, I wanted to focus our testimony on improvements for the POU use of allowance value. This includes addressing... As well as issues with vegetation management, particularly given all the tragedies with wildfires across the state right now. We don't want to see barriers to investments by publicly-owned utilities in those types of programs.

[following a clarifying question from Mary Nichols, the commenter responded as follows:] For the use of allowance values, there is a provision about quantifying the emissions reductions that would be associated with those investments. And our concern is that not all of the programs and projects would be easily quantifiable. So that was the concern that we'd outlined in our comments. (SCPPA2)

Response: Using allocated allowance proceeds to fund wildfire risk reduction activities differs from most allowed use types insofar as its intended impact on GHG emissions is to reduce the risk of wildfires, and thereby reduce the risk of increased GHG emissions from wildfires, rather than reducing emissions directly. Wildfires are a significant source of GHG emissions in California and reducing risk may constitute reducing *expected* emissions. CARB agrees with the commenters that any use of allocated proceeds for these purposes must be aligned with statewide efforts to appropriately manage wildfire risks in a manner that benefits and protects ratepayers and the climate. It also must demonstrate expected GHG emission reductions, consistent with the requirements for other uses of allowance value. In response to some of these comments, 15-day revisions align the use of allocated proceeds with specific requirements of SB 901 (Dodd, 2018), allowing electrical distribution utilities to use allocated allowance proceeds to fund wildfire mitigation and forest carbon sequestration activities, contingent on the development of a standardized system for quantifying GHG emissions reductions and the approval of a wildfire mitigation plan as required by statute. Furthermore, these 15-day revisions are specific to the standardized system for quantifying GHG emissions reductions as specified in Health and Safety Code section 38535(a), rather than the separate historic baseline of GHG emissions specified in section 38535(b). As such, once the standardized system for quantifying GHG emissions reductions is developed per Health and Safety Code section 38535(a) and a utility has adopted its mitigation plan per Public Utilities Code section 8386 or 8387, wildfire risk reduction and forest sequestration activities will be an allowed use of allowance value for that utility pursuant to the requirements of the adopted Regulation.

*Flexibility in Use of Allowance Value for Outreach***C-3.13. Comment:**

Use of Allowance Proceeds For Outreach Expenditures: SMUD appreciates that section 95892(d)(4) carefully allows use of proceeds for education and outreach expenditures

related to allowed uses, without requiring the difficult if not impossible demonstration of GHG reductions for the outreach and education expenditures.

SMUD recommends that the language here be slightly broadened to state:

95892(d)(4): ... Allowance auction proceeds may be used for outreach that supports implementation of the approaches described in sections 95892(d)(3)(A)-(D), including expenditures that broadly support GHG reductions from a combination of activities in these sections. (SMUD)

Comment:

And first, we support flexibility in the POU use of allowance value. There's been some changes to clarify that. We would like more. We think that the allowance proceeds should be usable for general education and outreach about climate change, and energy renewables efficiency, et cetera, because we believe it's very important to continue to keep public support for the program through that kind of general education. (SMUD2)

Response: CARB declines to make the requested amendment. Allowances are allocated to utilities specifically to benefit ratepayers and reduce GHG emissions. As part of the 15-Day revisions, staff included language allowing limited expenditures on education with GHG emissions reduction goals without demonstrating quantifiable GHG emissions reductions, as described in the Response to 45-Day Comment C-3.10, and certain outreach expenditures are also allowed. Outreach expenditures must be used to directly support the implementation of other allowable, GHG-reducing uses, and educational programs must have a specific GHG emissions reduction purpose. These requirements are critical to ensure that allocated allowance proceeds are in fact being used for their intended purposes of benefitting ratepayers and achieving GHG emission reductions. Use of allocated allowance proceeds for educational programs that are not specifically related to GHG emissions reductions, for example for general science education, is not allowed because it does not fulfill any core purpose of allowance allocation to utilities (namely, to reduce GHG emissions and benefit ratepayers).

Flexibility in Use of Allowance Value

C-3.14. Comment:

Specifically, regarding section 95892(d)(3) and new sections 95892(d)(3)(A)-(D), the Initial Statement of Reasons (ISOR) notes that the "Text is amended to list *all* of the allowed uses of EDU allocated allowance auction proceeds." (ISOR, p. 105, emphasis added) The electric cooperatives are concerned that this language creates specific mandates that unduly and needlessly restricts the use of allowance value...

Clarification on Use of Allowance Value Must Not Be Unduly Restrictive

GSPC supports the language clarifying that allowance proceeds are intended for the “primary benefit” of electricity ratepayers, but is concerned that requiring the use of one of the specific approaches delineated in sections 95892(d)(3)(A)-(D) restricts creativity and the scope of what should otherwise be eligible programs... The regulatory amendments must balance the objective of providing greater certainty regarding acceptable uses of allowance value with unduly restricting legitimate and lawful uses. In order to meet the needs of their diverse, rural service areas, the cooperatives have designed programs and measures that “are exclusively for the primary benefit of their retail electricity ratepayers,” but which do not necessarily fall into the categories delineated in sections 95892(d)(3)(A) or (B)...

GSPC offers these comments to highlight the importance of ensuring that the guidance CARB is attempting to provide in the regulatory amendments not be so constrained as to result in excluding programs that meet the statutory objectives of AB 32 and the state’s broader climate policy goals, while primarily benefiting retail electricity ratepayers. It is also important to ensure that quantification of total emissions reductions for a given project not be used as a metric for measuring the relevance or validity of a given project or program. Given the economic and geographic diversity that the electrical cooperatives represent, a single, demonstrable metric for measuring the success of a given project or program is not feasible. GSPC urges the Board to direct further revisions to the proposed amendments to better balance the objective of providing greater certainty regarding acceptable uses of allowance value, without unduly restricting legitimate and lawful uses that reduce GHG emissions, benefit electricity ratepayers, and meet the objectives of AB 32 and the state’s broader climate and environmental goals. (GOLDENSTATEPOWER)

Comment:

EDU Use of Allowance Value

NCPA appreciates staff’s efforts to provide greater clarity and transparency related to the electrical distribution utilities’ (EDUs) use of allowance value. That clarification, however, must be balanced with the need to ensure that EDUs are afforded the flexibility to design and implement GHG emissions reduction programs and measures that provide the optimal benefits to their electricity ratepayers. NCPA fully supports the revisions to section 95892(d)(3) providing that allowance value and auction proceeds from allocated allowances be used exclusively for the *primary* benefit of retail electricity ratepayers. This change recognizes that programs and measures that are for the primary benefit of electricity ratepayers may also have secondary benefits for other members of a given community or the state at-large. The primary benefit of electricity ratepayers and GHG reductions consistent with the AB 32 and that state’s broader climate policies can be achieved through programs and projects other than those specifically delineated in (d)(3)(A)-(D). Placing restrictive interpretations on authorized uses of allowance value limits creativity and the scope of what should otherwise be eligible programs. The characterization in the ISOR that the proposed amendments “list

all of the allowed uses of EDU allocated allowance auction proceeds,” can be narrowly construed to needlessly restrict the lawful use of allowance value. (ISOR, p. 105)...

Other GHG Emission Reduction Activities

The proposed amendment that allow for expenditures on “Other GHG Emission Reduction Activities” is key to ensuring that EDUs can implement programs and measures that best meet the needs of their electricity ratepayers, consistent with the objectives of AB 32. Since there are myriad programs and measures that can meet the statutory and regulatory mandates that do not fall within the specific categories listed in 95892(d)(3)(A), (B) or (D), it is important to include this new provision. As a threshold matter, Other GHG Emission Reduction Activities should explicitly allow for all programs and measures that provide benefits to utility ratepayers and meet the objectives of AB 32, including renewable energy programs that advance state objective of carbon neutrality. Investments in programs and projects that directly attribute to carbon avoidance should be permitted, including investments in programs such as resiliency and wildfire prevention.

This section, must be interpreted broadly, and as currently drafted would preclude investments in zero-emissions resources that do not specifically meet the RPS requirements. As noted above, this restriction is unduly burdensome, as renewable energy projects provide direct GHG benefits, irrespective of whether they are RPS-program eligible. This distinction is ever more restrictive in light of SB 100, and the continued focus on non-GHG emitting resources, versus “RPS program compliant” resources. Section 95892(d)(3)(A) should either be revised to expand the definition of renewable energy projects, or those projects that do not fall explicitly within that section should be authorized as “other GHG Emission Reduction Activities.”

EDUs should be encouraged to pursue, develop, and implement innovative programs and measure that meet these objectives, and should not be unduly constrained in doing so. For that reason, NCPA appreciates the inclusion of this section, as noted above. As discussed herein, this section should be revised to clarify additional acceptable uses. This includes programs and measures that are specifically aimed at GHG avoidance and fire-risk prevention for utility infrastructure. NCPA urges CARB to proactively acknowledge that *avoided* emissions can be just as valuable as reduced emissions in the context of wildfire mitigation for electric utilities. (NCPA)

Comment:

Additional Express Uses of Allowance Proceeds: SMUD appreciates the addition of section 95892(d)(3)(C) that allows use of allowance proceeds for funding programs or activities “other than” the uses allowed in (d)(3)(A) and (B) that are aimed at achieving GHG reductions. SMUD also appreciates the explicit inclusion of programs aimed at reducing SF6 in section 95892(d)(3)(C)1, but suggests that similar programs not covered in (d)(3)(A) and (B) be expressly included as well.

SMUD requests that the following categories be expressly included:

95892(d)(3)(C) ... This includes funding:

1. Projects or activities that reduce emissions of sulfur hexafluoride.

2. Projects or activities that reduce emissions of black carbon and PM 2.5 emissions, such as actions to prevent or reduce forest fires.

3. Projects or activities that reduce emissions of other short-lived climate pollutants, such as hydrofluorocarbon refrigerants and methane;

4. Projects and activities that sequester GHG gases, preventing them from reaching the atmosphere.

5. Projects and activities that reduce GHG emissions or sequester GHG in natural and working lands.

6. Projects and activities that educate and enhance the understanding of the general public about the impacts of climate change and the programs and actions that can be adopted to mitigate those impacts.

SMUD notes that the GHG reductions from the projects and activities listed above are reductions that occur outside the Cap and Trade sectors. Hence, these programs and activities actually reduce the amounts of or impacts of GHG emissions, whereas the energy efficiency and renewable programs covered in (d)(3)(A) and (B) are reductions within the Cap and Trade program, which results in lower Cap and Trade program costs, but no direct GHG emission reductions overall. (SMUD)

Comment:

And then we recommended a variety of additional specific allowed uses in the regulations, such as efforts to reduce GHG emissions from forest fires and programs to foster low-GHG refrigerants. (SMUD2)

Comment:

They [CARB staff] have proposed amendments clarifying how proceeds from GHG auctions may be used, while preserving flexibility for local utilities, like Roseville, to tailor programs to local needs.

So transparency and accountability are very important, especially for public funds.

So I wanted to highlight for the Board today several of the many ways in which Roseville Electric has been reducing GHG emissions while benefiting its customers. First, Roseville is using the funds to modernize our grid with smart meters.

This not only allows our system to be more efficient, reducing cost, and GHG emissions, but also allows us to provide faster and better customer service. Smart grids are essential for more advanced rates like time of use, and can also assist in integrating

renewables, demand response, and electric vehicles. Second, Roseville Electric is using GHG proceeds to fund EV rebates.

We cannot reach California's ambitious climate goals without reducing emissions from the transportation sector, and Roseville is doing its part to accelerate the adoption of EVs. Third, Roseville Electric is funding a low-income refrigerator replacement program. This will allow us to safely dispose of older refrigerators, which might be leaking HFCs and CFCs, which are extremely potent GHGs, and lowers the energy bills for customers who could not otherwise afford to replace their refrigerators.

Finally, Roseville Electric is funding low-income and multi-family housing retrofit programs.

What these programs do is, first of all, they ensure that all customers can benefit from reducing emissions, not just those who can afford electric vehicles and solar systems. It also means that we're achieving the deeper emissions, which will -- deeper emissions reductions, which will be necessary to reach the State's goals. So again, Roseville Electric appreciates the continued flexibility and local control in how it can use GHG auction proceeds.

And we hope that CARB will continue to support both, even for areas which cannot necessarily be as easily quantified, such as education or potentially wildfire reduction and prevention. (ROSEVILLEELECTRIC)

Comment:

First of all, I would like to address the provisions regarding the EDUs -- EDU use of allowance value generally. I'm hopeful that the 15-day changes staff had referenced earlier will include some of the refinements addressed herein.

Namely, while we support staff's efforts to provide greater clarity on what programs are allowed, we think that they should not be viewed as constraining the flexibility of EDUs to design and implement GHG emissions reductions programs and measures that provide the optimal benefits to their members and electricity ratepayers. To do this, we recommend that the list of programs included in the proposed amendments be characterized as guidelines. Next, avoided emissions are emissions reductions. And the regulations should explicitly recognize programs and projects that directly attribute to carbon avoidance as permissible uses of allowance value.

EDUs, and POUs, and electric cooperatives in particular, are uniquely situated to provide direct and impactful benefits to their ratepayers that mitigate the risks of wildfires and avoid increased statewide GHG emissions.

Targeted and individualized programs and measures for utility infrastructure, resiliency, vegetation management, and wildfire prevention could complement the broader statewide efforts funded by GGRF. The proposed amendments -- next issue is the quantification of emissions reductions, namely the proposed amendments appropriately

call for estimates of emissions reductions, but elsewhere require EDUs to demonstrate reductions from the programs. This language needs to be reconciled.

Related to this is the way in which program emissions reductions are viewed. The total number of emissions reductions should never be the sole measure of a program's success.

First of all, as Ms. DeRivi from SCPPA noted earlier, not all program's emissions reductions can be readily quantified.

And secondly, worthy programs that provide fewer emissions than others may be providing those emissions in disadvantaged, low income, or highly impacted communities, which clearly meets the broader objectives of AB 32 and AB 617. Next, the regulation includes a category for other GHG emissions reductions activities, which we support, but caution against a too strict interpretation. Addressing the specific requirements as guidelines rather than program limitations, as I mentioned earlier, would address this, but it is important that this section clearly allow for the use of allowance value investments in programs and projects that directly attribute to carbon avoidance. (NCPA-MSR-GOLDENSTATEPOWER)

Response: The commenters thank CARB for including an “Other GHG Emission Reduction Activities” category as an allowable use of allowance value and adding the amendment to clarify that “primary” benefits go to ratepayers, and the commenters request additional provisions explicitly expanding the allowed uses of allocated allowance value. CARB thanks them for the support and made additional changes in the 15-Day changes to the Regulation.

These changes clarify that the “Other GHG Emission Reduction Activities” is intended to provide flexibility to utilities to tailor expenditures to their own specific circumstances. Under the revised Regulation, this category specifically allows use of allocated allowance proceeds to reduce emissions of hydrofluorocarbons and reduce wildfire risk. Wildfire risk reduction activities must reduce expected emissions and must align with other statewide wildfire activities, as discussed in Response to 45-Day Comments C-3.12.

Educational programs for which GHG emissions reductions can be quantified pursuant to section 95892(d)(5) also may be an allowable use under the “Other GHG Emission Reduction Activities” category. In addition, allocated allowance value may be used, up to a specified annual maximum, for certain educational programs with specific GHG emissions reduction purposes, without needing to quantify expected GHG emission reductions as discussed in Response to 45-Day Comments C-3.10.

Should a utility desire to spend allocated allowance proceeds on a use that is not specifically enumerated under the “Other GHG Emission Reduction Activities” section, it may be allowable under that section provided that it meets all

regulatory requirements, including the requirement to demonstrate expected GHG emission reductions. Carbon dioxide is the most common GHG, but it is not the only GHG that could be reduced. CARB expects that activities to reduce uncombusted methane emissions could potentially meet the requirements of section 95893(d)(3)(B). Section 95892(d)(3)(C) excludes renewable energy expenditures that do not meet the requirements of section 95892(d)(3)(A), for reasons explained in Response to 45-Day Comment C-3.2.

Achieving and quantifying GHG reductions through management of natural and working lands is a complex and developing area. Given this complexity and the lack of specific proposed projects, CARB declines to add this as a specified allowable use of allocated proceeds at this time. Like wildfire risk reduction, these types of efforts must be closely coordinated and aligned with other State efforts to be effective.

The amendments specify that EDUs should use the metrics applicable to their project to estimate the expected GHG emissions from a particular use of allocated allowance proceeds. There is no requirement in the Regulation to perform a cost-benefit analysis to evaluate the effectiveness of a project at reducing GHGs. CARB encourages utilities to maximize GHG reductions while balancing other considerations, such as costs and co-benefits, including benefits to low-income and disadvantaged communities. In order to simplify and bring uniformity to the estimates of GHG reductions for uses of allocated allowance value across utilities, CARB specified in the amendments standardized approaches for estimating GHG emissions reductions.

Interpretation of “Other” Category of Uses of Allocated Allowance Value

C-3.15. Comment:

Other GHG Emission Reduction Activities: The inclusion of “Other GHG Emission Reduction Activities” is very important. The section should be interpreted to authorize the use of allowance value for a broad range of programs and measures that otherwise meet the statutory and regulatory mandates of reducing or avoiding GHG emissions and benefiting electricity ratepayers, and should not be narrowly construed. It is imperative that section 95892(d)(3)(C) be interpreted to include any renewable energy programs that advance the state objective of achieving carbon neutrality, and to the extent that section 95892(d)(3)(A) is not expanded to include a broader range of renewable energy projects, any renewable energy projects that do not fall within the definition set forth in section 95892(d)(3)(A) should be expressly authorized herein. Likewise, should the provisions of section 95892(d)(3)(B) not clearly reflect the fuel-switching and reduced emissions intensity value of cogeneration and combined heat and power projects, those should be specifically authorized as part of section 95892(d)(3)(C).
(GOLDENSTATEPOWER)

Response: The commenter requests that the “Other GHG Emission Reduction Activities” category of allowable uses of allocated allowance value include non-RPS-eligible renewable energy and combined heat and power projects. For discussion of allowed renewable energy expenditures, see the Response to 45-Day Comment C-3.2. For discussion of the “Other GHG Emission Reduction Activities” category as it relates to combined heat and power projects, see the Response to 45-Day Comment C-3.8.

Authority Over Use of Allowance Value

C-3.16. Comment:

CARB acknowledged at the beginning of the Program that it “does not have authority to appropriate funds. The use of revenue obtained from consignment of allowances is the responsibility of the California Public Utilities Commission (CPUC) for investor-owned utilities and the governing Boards of publicly owned utilities.”³⁹⁰ SCPPA concurs that such decisions are fully under the authority of a POU’s local governing board and that existing regulations appropriately acknowledge this authority. (SCPPA)

Response: This comment does not request a change to the Cap-and-Trade Regulation and therefore does not require a response. Notwithstanding this, if the commenter is implying that CARB does not have authority to place limits on the use of allocated allowance value, CARB strongly disagrees with the commenter. It is important to clarify that the authority to appropriate funds is separate and distinct from CARB’s clear authority to set limits on the use of value from the allowances allocated pursuant to the Cap-and-Trade Program. CARB’s revisions in this rulemaking further specify the allowed (and prohibited) uses of allowance value, and this has been done in full respect of CARB’s and the CPUC’s related, but independent authorities. As stewards of these funds, CARB encourages utilities to evaluate the ratepayer benefits, the GHG emissions reductions, and the co-benefits of different uses when determining how to expend allocated allowance proceeds pursuant to the adopted amendments to the Cap-and-Trade Regulation.

Case-by-Case Evaluation of Uses of Allowance Value

C-3.17. Comment:

SCPPA continues to believe that §95892 can be further improved by allowing for a broader set of guidelines than is proposed. We understand that existing statute, via AB 32, broadly stipulates that the value associated with these allowances must be used for the (primary) benefit of our customer-owners. In this spirit, SCPPA supports reasonable guidelines that are also as inclusive as reasonably possible. We would caution CARB from inadvertently excluding funding for projects and/or programs that would accomplish

³⁹⁰ Pages 65-66 of the October 2011 Final Statement of Reasons for the Cap-and-Trade Regulations.

GHG emissions reduction goals envisioned by AB 32 as “reasonable” uses of allowance value these include: climate resiliency programs – specifically related to vegetation management and wildfire prevention activities; GHG emissions reduction educational outreach programs within utility service territories; GHG-related research to formulate utility- scale emissions reduction programs; and additional research, development, and demonstration projects and programs aimed at achieving the State’s newly-announced carbon neutral goals. To recognize this, SCPPA suggests providing a mechanism where CARB could consider and decide upon additional reasonable uses of allowance values on a case-by-case basis.

SCPPA recommends that CARB include within the regulation itself a formalized process by which utilities can obtain a decision on use of allowance values that are not explicitly included, or proposed to be included, in the regulation. We believe that all parties would benefit from the availability of being able to obtain a case-by-case determination with a degree of certainty. For example, most California utilities are undertaking additional efforts to reduce the threat of wildfires, harden the electric grid, and ensure greater climate resiliency – for which additional funding from Cap-and-Trade derived revenues could be justified as avoiding wildfires and reducing associated emissions. Outlining a standardized process through which to obtain an answer from CARB as to whether such expenditures are allowable would indeed be a helpful addition. (SCPPA)

Comment:

And we had one other recommendation to CARB staff, to the extent that there may be programs and projects that aren't explicitly outlined in the proposed regulation that perhaps there be a formalized process for utilities to come to the CARB Board to get a case-by-case showing of yes or no on whether or not cap-and-trade proceeds could be invested in those programs as a helpful clarifying edit. (SCPPA2)

Response: The revised regulations specify how allocated allowance proceeds may be used for wildfire risk reduction and educational programs. For discussion of using allocated allowance proceeds for wildfire risk reduction, see the Response to 45-Day Comment C-3.12, and for discussion of educational programs, see the Response to 45-Day Comment C-3.10. To the extent that research, development, and demonstration projects have quantifiable GHG emissions reductions, such activities may be permissible uses of allocated allowance proceeds pursuant to the “Other GHG Emission Reduction Activities” section of the Regulation. Allocated allowance proceeds are provided to the utilities to benefit ratepayers and reduce GHG emissions, and any expenditures of allocated proceeds must meet these requirements. Generally, research and development efforts with uncertain outcomes do not meet these requirements, and other State funding is available for a wide variety of research and development programs. CARB included the “Other GHG Emission Reduction Activities” category to provide flexibility to utilities to adapt their use of allocated allowance proceeds to their specific circumstances.

CARB staff are available to discuss whether a contemplated use of allocated allowance proceeds may be allowed if it were to be implemented in a manner that complies with all requirements of the Regulation. Utilities that report uses of value to CARB with the expectation that the use is allowable under the “Other GHG Emission Reduction Activities” section must demonstrate expected GHG emissions reductions. These uses must be consistent with the Regulation and will be reviewed by CARB staff on a case-by-case basis.

Reporting on Solar on Multi-Family Affordable Housing Program

C-3.18. Comment:

6. Eligible Uses of Allowance Proceeds

The 45-day language updates to Section 95892 (e)(4)(B) of the Cap-and-Trade Regulation detail calculations to estimate the GHG emission reductions associated with the use of allowance proceeds. However, SB 92 (Stats. 2017, Ch. 26, Sec 83) directs utilities to allocate approximately \$100,000,000 or 10% of annual allowance proceeds to the Multifamily Affordable Housing Solar Roofs Program (MASH). The utilities are mandated to make these funds available to the program and thus should not have to justify the use of the proceeds for this purpose, nor the GHG reductions associated with this utilization. Added requirements for GHG calculations could hamper our use of these proceeds for programs that require this additional justification. (SDG&E)

Response: The use of allocated allowance proceeds for Solar on Multifamily Affordable Housing (SOMAH) Program, as required by legislation, is an allowable use under section 95892(d)(3)(A) of the Regulation. While the use of proceeds for SOMAH is legislatively prescribed, CARB’s reporting requirements for the Cap-and-Trade Program are also applicable. The effort required by electrical distribution utilities (EDUs) to estimate GHG emissions reductions from this program should be minimal. EDUs should know, or should be able to readily access information on, how these funds were spent, the number of projects constructed, the expected annual generation for each project, and, how many projects were built, and their expected output in a given year. California Public Utilities Commission (CPUC) Decision 17-12-022 requires the SOMAH program administrator to submit semi-annual reports with information about the progress of these programs, including the information that is needed to estimate GHG emissions reductions pursuant to section 95892(e). CARB also continues to coordinate with CPUC to ensure that CARB and CPUC requirements related to the use of allocated allowance proceeds are aligned.

Flexibility in Reporting on GHG Emissions Reductions

C-3.19. Comment:

SCPPA understands CARB staff’s desire to be able to quantify these emissions reductions. It is important to the Program to demonstrate that GHG reductions are

occurring, but a rigorous Mandatory Reporting Regulation-style accounting of these emissions reductions would be unnecessary and potentially quite onerous. Qualitative demonstrations that GHG reductions are connected with the spent allowance values should be sufficient. SCPPA continues to believe that while having accurate and verifiable data is important this need must also be balanced with practical implementation constraints associated with today's modern electric grid. While we appreciate staff's use of the term "estimating" in §95892(e)(4)(B), in requiring the estimation of GHG emissions reduction from each use of allocated allowance auction proceeds as described, we still believe CARB should not be overly prescriptive in implementation. As noted above and in prior comments, providing for a qualitative assessment on the estimated GHG emissions reduction, and where applicable, a quantitative assessment of GHG emissions reductions is more appropriate. Again, we do not believe that any specific metric used to measure the quantity of emissions reduction from a program should form the basis for determining the efficacy and overall quality of such a program.

SCPPA appreciates CARB's desire through §95892(e), on Reporting on the Use of Auction Proceeds, to better understand the disposition of auction proceeds spent or remaining to be spent, and how they benefit ratepayers. We would, however, caution CARB from utilizing a "one size fits all" approach in estimating the associated electricity GHG emissions factor to be used as is outlined in (B)(1) and (2). Not all utility portfolios are similar and, as a case in point, vehicle miles travelled on congested Southern California freeways and roadways could produce different savings than for vehicle miles travelled in other, less congested areas of the State. Electricity utilities should be provided a mechanism to utilize different approaches that are acceptable to CARB to demonstrate associated emissions savings. (SCPPA)

Comment:

II. Demonstration of GHG Emissions Reductions for Use of Auction Proceeds

LADWP understands the need to improve program transparency and importance of considering GHG emission reductions when making decisions about using allocated allowance value. Therefore, LADWP supports CARB's proposal to allow electrical distribution utilities (EDUs) to demonstrate GHG emission reductions by estimation. CARB staff stated that the proposed GHG estimation amendments combine structure and flexibility. However, certain provisions of section 95892(e)(4)(B) -- the section for estimating GHG emission reductions -- can be interpreted as prescriptive, given that, the word "shall" rather than "may" is used when referring to information used for the calculation. For example, the proposed new provision requires that the GHG emission reduction estimation method shall utilize "use-specific information, specified or comparable emission factors, time period of emission reductions, and percentage of costs covered by the allocated allowance auction proceeds." To avoid being overly prescriptive and inflexible, LADWP recommends replacing the word "shall" with "may,"

to allow flexibility to exclude information that is not available or not applicable. Any estimation methodology should be flexible and not overly burdensome. (LADWP)

Comment:

Reporting Use of Allowance Value: GSPC agrees that the goal of reporting on the use of allowance value should allow for transparency in the expenditure process and facilitate CARB's tracking of how allowance allocation to the EDUs is contributing to the AB 32 goals. (ISOR, p. 111) However, the specific mandate in section 95892(d)(5) that "Electrical distribution utilities must *demonstrate* GHG emissions reductions," is not consistent with the further direction in section 95892(e)(4) that requires "Estimating the GHG emission reductions from each use of allocated allowance auction proceeds." While it is entirely appropriate to show how emissions reductions will result from program expenditures, this "demonstration" will not necessarily be possible at the time the program funds are expended. What is more relevant, is the estimate of reductions that would be included in the report, as well as the accompanying narrative about the overall program benefits, including the impacted electric customers on whose behalf the expenditures are made. Even more important, however, is the fact that the cost-to-reduction comparison must not be used as the sole measure of a program's success, and estimates of reductions that are not achieved should not be used to "disallow" or invalidate programs from moving forward. The total quantitative value of emissions reductions from various programs can be varied, which in no way invalidates the overall benefits from a specific program.

In reporting the use of allowance value, GSPC appreciates the recognition that forward-looking programs would need to estimate emissions reductions, and inclusion of a list of acceptable metrics. The regulatory text, however, should be revised to clarify that the calculation "may" use the listed metrics, if appropriate. (section 95892((d)(4)(B)) Quantification formulas do not necessarily cover all types of programs, and it will not be appropriate in all instances to use the specific calculation metrics provided.
(GOLDENSTATEPOWER)

Comment:

Reporting on Use of Allowance Value

In Section 95892(e)(4), proposed amendments address the manner in which allowance expenditures should be reported. The reporting requirements include an estimate of the GHG emission reductions from the use of the allowance value. The language in this section, which provides a framework for estimating the anticipated reductions, should be used in section 95892(d)(5), rather than the proposed amendment which provides that EDUs "must demonstrate GHG emissions reductions." *Estimating* GHG emission reductions is not the same as *demonstrating* reductions, and the regulations should clearly note this distinction. Furthermore, the success of an emissions reduction measure cannot be judged solely by quantifying the reductions, which does not mean the program is less valuable on the whole. Meaningful and impactful emissions

reduction programs that provide exclusive or primary benefits to electricity ratepayers may provide fewer emissions reductions than comparable programs, but may provide those reductions in a disadvantaged or highly-impacted community, clearly meeting the broad objectives of AB 32 and AB 617.

Estimating emissions reductions is an important part of assessing whether to make investments in various programs and measures, but obtaining an accurate estimate of actual emissions is not always going to be possible, and final program results may not deliver the same amount of emissions reductions that had been estimated. Again, this should not be the sole factor that determines whether a given program is acceptable. It will not always be possible to for EDUs to provide a quantitative demonstration of the emissions reductions from any given program or measure funded by allowance value or auction revenues. For example, under the California Climate Credit or a non-volumetric return of allowance value to ratepayers, it is not always possible to measure exactly how the proceeds were used to reduce emissions reductions; while the regulation does not propose that emissions from those programs be quantified, it is analogous to potential EDU programs, including programs and measures that provide emissions avoidance, such as educational programs. The proposed amendments should be revised to clarify the metric for estimating the anticipated reductions be used, “where applicable,” as not all emissions reduction programs and measures fall clearly within the defined evaluation criteria in 95892(e)(4)(B). These include programs that are geared at education and outreach, but which are not currently included in the definition of “administrative and outreach costs” in 95892(d)(4). These types of programs are vitally important for not only meeting the state’s current reduction targets, but also for educating the public on practices that will be necessary for the state to obtain its carbon neutrality objectives. (NCPA)

Response: For amendments related to estimating GHG emissions reductions for uses of allocated allowance value, CARB aims to provide a framework to estimate GHG reductions that is simple and consistent among utilities. CARB has specified that the estimates of GHG emissions reductions use the information and emission factors listed in sections 95892(e) and 95893(e) of the Regulation, “as applicable” to the particular project. Notwithstanding this, the use of the information and emissions factors listed in the adopted amendments that are applicable to a particular project is required. CARB declines to make the additional requested changes. In declining these changes, CARB is favoring simple and consistent estimation methods over methods that may be more accurate, but also more complex and less consistent. CARB declines to make further changes as we must strike a balance between standardizing methods and making sure they are not overly burdensome for EDUs to use or report or for CARB to oversee.

Using standardized emissions factors simplifies reporting and enables comparing estimated emissions reductions for uses across electrical distribution utilities

(EDUs), natural gas suppliers, and Greenhouse Gas Reduction Fund (GGRF). These regulatory changes do not require or include a cost-benefit metric by which CARB would assess the effectiveness of a particular use. Rather, the changes help provide clarity about what is required to be an allowable use of allocated allowance proceeds. Estimates of GHG emissions reductions need to demonstrate how uses of allocated allowances proceeds will reasonably achieve reductions. As stewards of these funds, CARB encourages utilities to evaluate the ratepayer benefits, the GHG emissions reductions, and the co-benefits of different uses when determining how to expend allocated allowance proceeds.

CARB has also amended sections 95892(d)(4) and 95893(d)(4) in response to comments to allow a limited amount of allocated allowance proceeds to be spent on educational programs that have GHG emission reduction goals, but for which GHG emissions reductions are not required be estimated. For discussion of the use of allocated allowance proceeds for educational programs, see the Response to 45-Day Comments C-3.10 ; for discussion of flexibility in the use of allocated allowance proceeds, see the Response to 45-Day Comment C-3.14; and for discussion of assigning emission factors for estimating GHG reductions under section 95892(d)(3)(C), see the Response to 45-Day Comment C-3.20.

Assigning Emission Factors for Reporting on “Other” Activities’ Emissions Reductions

C-3.20. Comment:

Emission Factors For GHG Reduction Estimation: SMUD notes that the GHG reduction estimation protocols in section 95892(e)(4) include GHG emission factors applicable to the GHG emission reductions from changes in electricity or fuel use, but that do not reflect the GHG reductions from the provisions in section 95892(d)(3)(C) relating to sulfur hexafluoride reductions or the other specific GHG reductions recommended by SMUD above. SMUD recommends the following, additional text to section 95892(e)(4)(B):

...

2. GHG emission factors applicable to the electricity or fuel used or saved or vehicle miles travelled **or reductions pursuant to actions from section 95892(d)(3)(C)**, calculated as follows:

...

d. if the allocated allowance auction proceeds expenditures reduce GHG emissions pursuant to section 95892(d)(3)(C), the Executive Director shall determine an appropriate GHG reduction factor or method to estimate the GHG reductions from the proceeds use.
(SMUD)

Response: In the amendments related to estimating GHG emissions reductions for uses of allocated allowance value, CARB aims to provide a framework to estimate GHG reductions that is simple to implement and consistent among utilities. Estimates of GHG emissions reductions need to demonstrate how uses of allocated allowances proceeds will reasonably achieve reductions. Methodologies for estimating GHG emissions reductions for other activities must be consistent with the required approach in sections 95892(e)(4) or 95893(e)(4) of the Regulation and for wildfire risk reduction or forest carbon sequestration, be consistent with 95892(d)(3)(C)2.

Given the wide range of potential uses of allocated allowance proceeds, CARB declines to provide emission factors for all possible uses. CARB believes that the utilities implementing the projects and activities pursuant to sections 95892(d)(3)(C) and 95893(d)(3)(B) will be best situated to estimate GHG emissions reductions for the projects and activities. Utilities should identify appropriate methods for estimating GHG reductions at the initial stages of planning to use allocated proceeds and evaluating projects and activities. CARB staff will be available to provide technical assistance to support the development of these methods consistent with the adopted amendments. See also Response to 45-Day Comment C-3.19.

Transferring Allowances to a Federal Power Authority

C-3.21. Comment:

Support for Streamlined Allowance Transfers

GSPC also offers support for amendments in section 95892(b)(2)...

Electric cooperatives support amendments in section 95892(b)(2), which authorizes the placement of allowances in compliance accounts of an electric generating facility operated by a federal power authority. Surprise Valley Electric purchases all of its power resources from Bonneville Power Administration and appreciates efforts to streamline CITSS transactions, reduce administrative costs, and maximize the value to electricity ratepayers. (GOLDENSTATEPOWER)

Response: Thank you for the support.

C-4. Legacy Contracts

Support for Post-2020 Allocation to Legacy Contract Generators without Industrial Counterparties

C-4.1. Comment:

As outlined in our prior comments,³⁹¹ Crockett operates a cogeneration facility that provides steam to C&H Sugar under a steam sale contract running through 2026. This contract was executed before passage of Assembly Bill (“AB”) 32 and does not provide for recovery of Cap-and-Trade Program compliance costs. Like other similarly situated counterparties, C&H has not been willing to renegotiate its contract with Crockett to shoulder any portion of these compliance costs, nor has C&H been willing to join the Program as an opt-in covered entity. With transition assistance set to expire at the close of the second compliance period for legacy contract generators without industrial counterparties, Crockett faces the prospect of bearing stranded compliance costs alone.

In prior comments, we discussed the genesis of the Board’s July 2017 resolution directing Staff to “work with any remaining entities with legacy contracts and their non-industrial counterparties to resolve the parties’ issues related to recovery of greenhouse gas costs, or, as necessary, to propose regulatory amendments to be in place no later than the allocation of vintage 2021 allowances to ensure reasonable transition assistance for greenhouse gas costs through the term of the legacy contract.”³⁹²

The proposed amendments to the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms conform with AB 398 requirements and respond to direction in Board Resolution 17-21, ensuring appropriate allowance allocation for transition assistance for legacy contract generators without industrial counterparties.

Crockett supports the proposed amendments to the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation. Consistent with our previous comment letters, Crockett would like to reiterate once again its ongoing need for transition assistance for the term of its contract. As we have previously conveyed to Staff and the Board, Crockett’s contract does not provide for recovery of compliance costs, and Crockett’s counterparty, C&H, continues to refuse to renegotiate the contract to account for these costs. Based on these facts, Crockett believes that the post-2020 allocation provided by the proposed amendments is unequivocally necessary and appropriate, consistent with the Board’s findings in Resolution 17-21.
(CROCKETTCOGEN)

³⁹¹ See, e.g., Comments of Crockett Cogeneration (Mar. 16, 2018), [https://www.arb.ca.gov/lispub/comm2/bccomdisp.php?listname=ct-3-2-18-wkshp-
ws&comment_num=32&virt_num=26](https://www.arb.ca.gov/lispub/comm2/bccomdisp.php?listname=ct-3-2-18-wkshp-ws&comment_num=32&virt_num=26); Comments of Crockett Cogeneration (July 5, 2018), [https://www.arb.ca.gov/lispub/comm2/bccomdisp.php?listname=ct-6-21-18-wkshp-
ws&comment_num=17&virt_num=16](https://www.arb.ca.gov/lispub/comm2/bccomdisp.php?listname=ct-6-21-18-wkshp-
ws&comment_num=17&virt_num=16).

³⁹² ARB, Resolution 17-21, at 13 (July 27, 2017), <https://www.arb.ca.gov/board/res/2017/res17-21.pdf>.

Comment:

F. Allocation to Legacy Contract Generators

SMUD appreciates the inclusion in the 45-day language of provisions continuing allowances to be allocated to cover legacy contract emissions for generators with counterparties that are not otherwise included in the Cap and Trade program. Such allocation was allowed for these circumstances through the 2017 program year (the end of the second compliance period) but removed from the current regulation from 2018 forward. (SMUD)

Response: Thank you for the support. As the commenter notes, the initial proposed amendments (also referred to as “45-day language”) include allowance allocation to legacy contract generators without industrial counterparties resuming after 2020 and continuing through the life of the legacy contract. The 15-day revisions add allowance allocation to legacy contract generators without industrial counterparties for the years 2018 through 2020 through a vintage 2020 allowance allocation that will include true-up allocation for 2018 and 2019.

Calculation Method for Post-2020 Allocation to Legacy Contract Generators without Industrial Counterparties

C-4.2. Comment:

However, SMUD sees no reason at this point to continue to use the provisions previously in the regulations that tied the legacy contract allocations in these cases to historical 2012 information, rather than to actual emissions from generation or useful thermal energy supplied under a legacy contract. For legacy contracts with an industrial counterparty, the allocation is based on actual emissions as provided in data reporting from the year prior to the application for allowances – the latest data available, and subsequently tried up in following years to actual data. SMUD sees no reason not to differentiate at this point between the process for legacy allowance allocation with or without an industrial counterparty.

A previous rationale for providing legacy contract allocations was for transition assistance, similar to the 100% assistance factors for industrial entities through the end of the second compliance period. With AB 398 and the 45-day language, that transition assistance rationale no longer stands – assistance factors are at 100% after 2020 and proposed to be at 100% for the third compliance period (2018- 2020).

As time passes, basing the legacy contract allocation for instances without an industrial counterparty on historical 2012 information becomes less and less accurate. The best structure would follow the “latest data plus true-up” structure used for contracts with an industrial counterparty...

Rather than add the complication again of two different methods for determining allocations for legacy contracts with and without industrial counterparties, SMUD

supports the much simpler change of simply adding contracts without industrial counterparties into the current structure for those with those counterparties, as follows:

95894(a)(1) A letter to ARB stating covered entity's name and ARB ID, ~~identification~~identity of legacy contract counterparty, **if applicable**, and statement requesting transition assistance for the previous data year's legacy contract emissions.

(A) Previous data year's legacy contract emissions, pursuant to section 95894(c).

(B) 2012 data year's legacy contract emissions, pursuant to section 95894(d).

95894(c) Allocation to Legacy Contract Generators **with an Industrial Counterparty**. If the counterparty (or entity in a direct corporate association with the counterparty) is a covered entity or opt-in covered entity that is in a sector listed in Table 8-1, the following formulae apply based on the type of generation facility

95894(c)(2) For legacy contract generators **with an industrial counterparty** subject to section 95894(c), but not covered by section 95894(c)(1), the following equations apply:

...

~~95892(d) Allocation to Legacy Contract Generators without an Industrial Counterparty. Legacy contract generators not covered by section 95894(c) may receive allowance allocation only for budget years 2021 through the life of the legacy contract~~

All remaining parts of 95892(d) struck. (SMUD)

Response: The commenter requests that allowance allocation to legacy contract generators without industrial counterparties be calculated using annually updating data rather than a constant baseline established by 2012 data. CARB declines to make this change since using annually updating data could incentivize greater emissions under the affected legacy contracts. CARB's preferred outcome is for legacy contracts to be renegotiated so that energy prices include GHG costs. Allowance allocation to legacy contract generators is provided for transition assistance while encouraging contracts to be renegotiated; it is not intended to make any entity whole for all potential Program costs. Since the inception of the Program, many legacy contract generators have already renegotiated with counterparties in such a way that the generator may have received less than full compensation for GHG costs. Providing allowance allocation to remaining legacy contract generators based on annually updating data could have the perverse result that generators that renegotiated their contracts receive less favorable treatment than those who did not renegotiate.

2018-2020 Allocation to Legacy Contract Generators without Industrial Counterparties

C-4.3. Comment:

Also, there is no reason to restart the allocation of allowances for this purpose in 2020 rather than 2019. Board Resolution 17-21 directs staff to: "...work with any remaining entities with legacy contracts and their non-industrial counterparties to resolve the parties' issues related to recovery of greenhouse gas costs, or, as necessary, to propose regulatory amendments to be in place **no later than** the allocation of vintage 2021 allowances to ensure reasonable transition assistance for greenhouse gas costs throughout the term of the legacy contract." (Emphasis added).

The Board Resolution does not constrain staff from starting the allocations for these purposes with 2020 allowances allocated in 2019, nor does it prevent consideration of true up for the 2018 emissions not covered in the current regulations. (SMUD)

Response: The commenter requests that allowance allocation to legacy contract generators without industrial counterparties be added to the Regulation for the third compliance period, 2018 through 2020, and that the allocation be provided earlier than the standard allowance allocation schedule. Response to 45-Day Comment C-4.1 discusses the inclusion in the adopted amendments of allowance allocation to legacy contract generators without industrial counterparties beginning 2018 and continuing through the life of the legacy contract.

The vintage 2020 allowance allocation to legacy contract generators will include true-up allocation for 2018 and 2019 that will be timely for meeting annual surrender deadlines for 2018 and 2019 covered emissions. In addition, conducting an additional true-up allocation early and outside of the normal schedule would be administratively burdensome and disruptive to CARB's accounting and record-keeping infrastructure for allowance allocation. As such, CARB has not made any changes to the timing of the allowance allocation provisions.

Calculation Method and 2018-2020 Allocation to Legacy Contract Generators without Industrial Counterparties

C-4.4. Comment:

The requested changes pertain primarily to PEC's lingering unresolved status as a Legacy Contract. The comments explain how this unresolved situation impacts not only PEC, but also other stakeholders and in turn the integrity of the Cap & Trade Program (the "Program") generally. This important issue has been buried deep within the broader functioning of the Program, but now is the time to resolve it as the adverse impacts on the broader electricity and carbon markets will only grow over time. The timing is ripe to finally resolve this issue during this current rulemaking effort.

PEC fully understands that California Air Resources Board (“CARB”) would prefer a contractual solution, but that takes two willing counterparties engaging in a common effort to solve a common problem. That basic prerequisite to a bilateral solution simply does not exist here. Our renewed request for a regulatory solution is necessitated because PEC’s counterparty, Pacific Gas & Electric (“PG&E”), is unwilling to find a solution aligned with the interests of the Program. Because this is a multi-year, multi-faceted and historically complex issue, PEC has prepared this letter in greater detail than previous comment letters. The goal of the extended detail is to both summarize and consolidate the facts about this regulatory, market and environmental problem in one place with the hope that a regulatory solution can be completed under this rulemaking. It must be noted that PEC has never stopped pursuing a good faith contractual solution, and in fact, has presented our counterparty numerous opportunities for settlement with conditions that PEC believes *exceed* those that have already been agreed to by PG&E and approved by the California Public Utilities Commission (“CPUC”).

PEC has segregated this letter into the following topic areas:

- I. PEC Overview
- II. Cap and Trade Background, Legacy Contract Elements & Other Regulatory History
- III. Background and Status of Counterparty Negotiations
- IV. Impact of a Lack of Carbon Price Signal on PEC’s Electric Energy Dispatch Price
- V. Requested Relief
- VI. Potential Solutions

I. PEC Overview

PEC is a large natural gas peaking plant located near Fresno, California. According to the Jobs and Economic Development Model, PEC contributes more than \$20 million dollars per year and generates over 80 jobs for the local and California economy. PEC’s quick-start capability and operational flexibility are critical in supporting grid reliability as California continues its build out of intermittent renewable generation. Those characteristics, along with PEC’s proximity to fuel supply and connectivity to the grid make PEC an essential piece of California’s energy infrastructure.

On March 28, 2006, PEC entered into a tolling Power Purchase and Sale Agreement (“PPA”) for the exclusive sale of electric power to PG&E. PEC won a competitive bid with PG&E in an open and transparent process, overseen by the CPUC. The PPA was a standard form document at the time, and it did not explicitly address the price of

carbon as AB 32³⁹³ was only a legislative concept being debated in the California legislature. The PPA signed by PEC is almost identical to others that were executed at that time and have subsequently been amended to address the lack of language addressing carbon pricing. PEC began delivering power to the grid in June 2009.

PEC is owned by a Fund managed by Ares EIF Management, LLC (“Ares EIF”). Ares EIF is an experienced fund manager responsible for scores of traditional and renewable infrastructure projects within California and within the United States—see Figures 1 and 2, respectively. Ares EIF has three decades of contractual, regulatory and operational experience across U.S. geographies and energy infrastructure assets.

Figure 1



Figure 2



Many of the investors in Ares EIF-managed funds are pension funds and endowments, including some that reside in California. In fact, one of the largest single investors in the fund that owns PEC is Contra Costa County Employees' Retirement Association.

With greater than 30-years of experience, Ares EIF prides itself on managing the development, construction and acquisition of the critical energy infrastructure that supports grid stability and the integration of intermittent renewable technologies, and provides economic benefits to the local economy. One of the foundational principles of the California Climate Program is to incent clean energy infrastructure within the state, and Ares EIF has been a willing partner in that effort.

II. Cap and Trade Background, Legacy Contract Elements & Other Regulatory History

Cap and Trade Background

CARB’s Cap and Trade Program, first launched in late 2012, is a market-based mechanism designed to discourage the emissions of greenhouse gases. It is a key component in the broader AB 32 Scoping Plan master policy framework to reduce

³⁹³ http://www.leginfo.ca.gov/pub/05-06/bill/asm/ab_0001-0050/ab_32_bill_20060927_chaptered.pdf

GHGs.³⁹⁴ It is an independent regulation, enforceable through the number of carbon permits, or “allowances” issued by CARB. But, it really isn’t that simple. It is a complicated scheme which relies on a basic economic premise that if something costs more, entities will have an incentive to reduce that which is more expensive, i.e. the “Cost of Carbon” will be avoided at economically optimal levels. Because the total volume of available permits – the “cap” in cap and trade – declines each year. That raises the price for each permit, in theory, giving companies a financial incentive to reduce their emissions.

CARB has attempted to simplify the explanation of the program. The following excerpt is pulled directly from CARB’s Cap and Trade homepage:

“The AB 32 Scoping Plan identifies a cap-and-trade program as one of the strategies California will employ to reduce the greenhouse gas (GHG) emissions that cause climate change. This program will help put California on the path to meet its goal of reducing GHG emissions to 1990 levels by the year 2020, and ultimately achieving an 80% reduction from 1990 levels by 2050. Under cap-and-trade, an overall limit on GHG emissions from capped sectors will be established by the cap-and-trade program and facilities subject to the cap will be able to trade permits (allowances) to emit GHGs.”

“Cap-and-trade is a market based regulation that is designed to reduce greenhouse gases (GHGs) from multiple sources. Cap-and-trade sets a firm limit or cap on GHGs and minimize the compliance costs of achieving AB 32 goals. The cap will decline approximately 3 percent each year beginning in 2013. Trading creates incentives to reduce GHGs below allowable levels through investments in clean technologies. With a carbon market, **a price on carbon is established for GHGs**. Market forces spur technological innovation and investments in clean energy. Cap-and-trade is an environmentally effective and economically efficient response to climate change.³⁹⁵ (emphasis added)

California is committed to cutting carbon emissions another 40 percent by 2030³⁹⁶, a pretty ambitious goal, and analysts believe emissions permit prices will climb so high that they will make companies get more serious about reducing their carbon footprint.³⁹⁷ Appendix D of the current regulatory package acknowledges this: “Staff is not aware of any data or analyses that indicate allowance prices would not continue to steadily increase over time.”³⁹⁸

This policy mechanism, a “price on carbon”, has generally already been applied throughout the California economy, with the vast majority of all fuels and industrial emissions covered by it, and thus incented to be reduced. There are a very limited

³⁹⁴ <https://www.arb.ca.gov/cc/scopingplan/scopingplan.htm>

³⁹⁵ <https://www.arb.ca.gov/cc/capandtrade/capandtrade.htm>

³⁹⁶ https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32

³⁹⁷ <https://www.Californiacarbon.info>

³⁹⁸ <https://www.arb.ca.gov/regact/2018/capandtrade18/ct18398.pdf>

number of entities for which the price of carbon cannot be incorporated into their operations due to existing contractual relationship. These entities have been defined as “Legacy Contract Holders” under the Cap and Trade regulation. This determination by CARB is an acknowledgement that even though the program is generally working, in an economy as big as California’s, and with a program as broad in scope, there are a few outliers that must be addressed on a case-by-case basis. These remaining entities are engaged in bi-lateral contracts which preceded the AB 32 construct and cannot be superseded by the regulation.

In enacting and implementing the Program, CARB rightfully recognized, in September 2013, that PEC, along with a handful of other similarly situated entities, were stuck between a regulatory requirement to cover the cost of compliance of the new program and a contractual obligation which did not provide an avenue to recoup compliance costs. It was the recognition of this issue that CARB created the term Legacy Contract.

Legacy Contract Elements

The definition of a Legacy Contract (located in Section 95894 of the Cap and Trade Regulation) has three required criteria, which PEC has historically satisfied and continues to satisfy. In the spirit of completeness, the criteria are provided here.

- 1) **The Contract Must have been Entered Into Prior to Enactment of AB 32.**
The legacy contract was originally executed prior to September 1, 2006, remains in effect, and has not been amended since that date to change the terms governing the price or amount of electricity, the GHG costs, or the expiration date; (PEC: TRUE)
- 2) **A Contract that Does Not have the Ability to Recover the Cost of Carbon.**
Each legacy contract does not allow the covered entity to recover the cost of legacy contract emissions from the legacy contract counterparty purchasing electricity; (PEC: TRUE)
- 3) **Legacy Contract Holders Must Demonstrate Efforts to Resolve Contractual Issues with Counterparty.** *The operator of the legacy contract made a good faith effort but failed to renegotiate the legacy contract with the counterparty to address recovery of the costs of compliance with this regulation.* (PEC: TRUE)

PEC in good faith signed the PPA on March 28, 2006, invested significant capital and committed to supplying needed energy capacity to PG&E, predating **all of the following:**

- *September 2006 - AB 32 was signed into law, thus requiring GHG reductions statewide for the first time;*
- *December 2008 - The Original AB 32 Scoping Plan, which suggested putting a price on carbon as a foundational policy choice of the state, was approved;*

- *June 30, 2007* - The policy recommendations of the Market Advisory Committee which debated implications of power sector obligation assignment;³⁹⁹
- *2007-2010* - The regulatory debate and decision as to where the allowance allocation should land for carbon emissions from the power sector—power plants or Utilities;
- *2011-Present* - The numerous CPUC proceedings on power sector carbon structure for Investor Owned Utilities, of which PEC’s counterparty is one;⁴⁰⁰
- *2009-Present* - The Cap and Trade Regulation was presented identifying the compliance structure of the Program, including obligated parties, allocations, reporting and Legacy Contract relief;
- *December 2011* - The adoption by the CARB Board of the Cap and Trade Program (the “Program”)
- *January 2013* - The beginning of the obligation to pay for carbon emissions (January 2013).

Other Regulatory History

CARB amended the Program to provide “Transitional Assistance” to Legacy Contracts in an effort to allow for the renegotiation of their contracts. The assumption of CARB staff was that such renegotiation would be done with willing counterparties and could be accomplished within the timeframe provided.⁴⁰¹

Many significant and directly applicable events have transpired since CARB first adopted the Legacy Contract provisions to the Program. *All of the following have occurred after PEC was determined to be a Legacy Contract:*

³⁹⁹ <https://www.energy.ca.gov/2007publications/ARB-1000-2007-007/ARB-1000-2007-007.PDF>

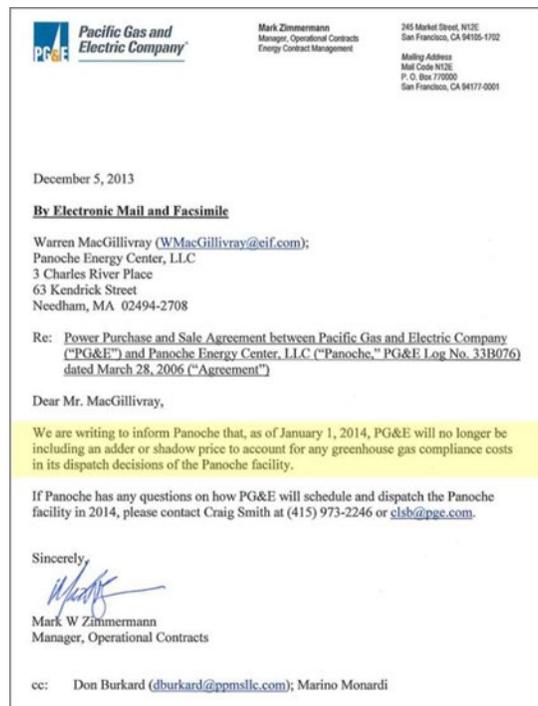
“California faces special challenges in reducing emissions from the electricity sector because of the quantity of imported electricity generated from coal. The Committee recognizes and appreciates the leadership already shown by the California Public Utilities Commission and the California Energy Commission in seeking appropriate means of regulating these out-of-state emissions. To address emissions associated with imported electricity within a state-based cap-and-trade program, the Committee recommends a “first-seller approach.” Under this approach, the entity that first sells electricity in the state is responsible to meet the compliance obligation established under the greenhouse gas cap-and-trade program. For electricity generated within California, the owner or operator of the in-state power plant is the first seller and would be required to surrender emissions allowances. For power imported from outside the state, the first seller is most often an investor-owned or municipal utility or a wholesale power marketer who sells the electricity to an in-state, load-serving entity, another power marketer, or a large end-user.”

⁴⁰⁰ <http://www.cpuc.ca.gov/General.aspx?id=5920>

⁴⁰¹ <https://www.arb.ca.gov/regact/2013/capandtrade13/capandtrade13.htm>

- SDG&E and Otay Mesa settled their Legacy Contract issue as SDG&E accepted the full greenhouse gas compliance obligation (approved by CPUC in December 2012);
- PG&E agreed to amend the Legacy Contract for the Starwood Midway Project, a facility that is literally adjacent to PEC, by accepting the price of carbon for a contractual adjustment as more fully discussed below (approved by CPUC in January 2013);
- The Cap and Trade regulation has been amended seven times;
- The CARB Board has on multiple occasions acknowledged the need to solve the Legacy Contract issue, and the need to resolve it;
- PG&E specifically removed the price of carbon from PEC’s dispatch profile as stated in the letter sent to PEC in December 2013 (displayed in Figure 3);
- PEC’s operations have increased dramatically since the disparity in carbon price bidding was initiated by PG&E; and
- PEC has offered seven (7) separate proposals to PG&E for resolution, as more fully described later in this document.

Figure 3



PEC has diligently worked with the staff and policy makers at CARB for six years. In addition to efforts at CARB, we have also sought solutions from the CPUC and the California Independent System Operator (“CAISO”). PEC has participated in no less

than half a dozen Cap and Trade Rulemakings, attended countless meetings with staff and Board Members, submitted multiple comment letters, testified several times and continually engaged our counterparty, PG&E, in a good faith effort to seek a contractual resolution.

The CARB Board has remained engaged on this issue and as recently as last July adopted Resolution 17-21 directing staff to provide “reasonable” relief for the remaining Legacy Contracts.⁴⁰² PEC appreciates the fortitude and commitment of the Board to this issue.

This current rulemaking package reinstates the Transition Relief for Legacy Contract Holders Without an Industrial Counterparty (PEC’s type of Legacy Contract). PEC is appreciative of the Board for their direction under last Fall’s Resolution to staff, but believe the staff proposal is inadequate to either solve the underlying impediment to resolution (i.e., an unwilling counterparty to a contract that doesn’t contain a mechanism to pass along the price of carbon), nor does it supply a remedy to the many harms that are more fully laid out in the impacts section below. With the Third Compliance Period already underway, Legacy Contracts like PEC are completely exposed to the regulatory obligations of the Program now. The proposed relief, starting in 2021 and based on the 2012 emissions baseline, is neither timely nor adequate.

III. Background and Status of Counterparty Negotiations

PEC has made numerous proposals to solve this issue directly with PG&E, all of which aimed to take full responsibility for PEC’s carbon cost obligation ***assuming an energy dispatch price that includes the cost of carbon***. PEC believes that many of these offers have exceeded what PG&E accepted (and the CPUC approved) in other transactions, by as much as 160%.

However, it takes two motivated parties to renegotiate a contract. Here, PG&E has an active **disincentive** to negotiate with PEC, in order to preserve its ability to exercise market power in a seemingly manipulative manner. PG&E profits from that manipulation through the regulatory loophole allowing for PEC to be dispatched without a cost of carbon included in its dispatch price (the “Status Quo”), thereby making the prospect of an equitable renegotiation nearly impossible. The only “positive” results of the current contract appear in PG&E’s bottom-line. They retain a systemic and substantial advantage to the market *by avoiding paying legitimate costs that are borne by all other market participants*. The Status Quo will only lead to PG&E realizing increased revenues as PEC’s projected capacity factor is expected to continue to increase if the cost of carbon is not included in PEC’s dispatch cost (see Figure 6).

This is where the CARB staff proposal has proven to be ineffective over the years. CARB’s previous regulatory relief assisted Legacy Contract holders like PEC by

⁴⁰² <https://www.arb.ca.gov/board/res/2017/res17-21.pdf>

offsetting some of the compliance costs, but such relief did not provide a reason for counterparties to negotiate in good faith. By regulation, PEC had to continue to work toward a solution, although no such requirement was placed on PG&E. Without regulatory motivation, the profit motive of the Status Quo dominated every negotiation in contravention of the spirit of the Program.

In an effort to find a solution that PG&E would accept, PEC sought to compare its settlement proposals against those that were already agreed to by PG&E and approved by the CPUC, primarily the approved amendment to the PPA for the Starwood Midway Project (“Starwood Midway”). The Starwood Midway resides adjacent to PEC, and its PPA was also a Legacy Contract that is substantially similar to the PEC PPA at issue here. In fact, in PG&E’s application to the CPUC requesting approval of the Amendment they argued that the Amendment merits approval because it “provides substantial benefits for PG&E’s customers compared to the potential outcomes of regulatory or adversarial proceedings that would be risked in the absence of a negotiated compromise, and demonstrates that parties to a pre-AB 32 PPA can successfully agree to realign their obligations for AB 32 costs or “GHG compliance costs” so that regulatory intervention is unnecessary.”⁴⁰³



With that goal in mind, PEC made CPUC public information requests to review the approved amendments for Starwood Midway. In each case, PG&E intervened to prevent PEC from accessing the amendment. Nonetheless, PEC was able to verify its benchmarking via publicly available information on the FERC EQR website. After a thorough analysis of the Electric Quarterly Report website, PEC determined that the Starwood Midway PPA amendment effectively exchanged approximately \$3/kW-yr of fixed capacity payments in exchange for its counterparty (PG&E) to assume responsibility for its carbon cost obligations. We encourage CARB to compel production of the approved PPA settlements to verify this analysis.

PEC’s efforts at a good faith resolution with PG&E have included the following proposals over the course of several years:

- Settlement proposals that were benchmarked against other CPUC-approved amendments (exchanging a reduction in fixed PPA Capacity Payments in

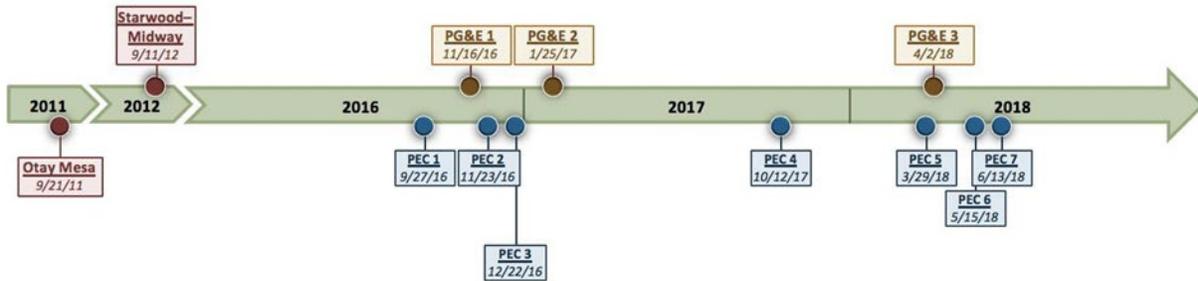
⁴⁰³ See Application 12-09-016 (Filed September 26, 2012) “Pacific Gas and Electric Company (PG&E) seeks approval of an amendment (Amendment) to the Power Purchase Agreement (PPA) between Starwood Power- Midway, LLC (Starwood) and PG&E. The PPA was approved by Decision (D.) 06 11-048.

exchange for PG&E taking over responsibility for the variable carbon costs associated with PEC's dispatch), including one proposal that was ~160% higher than already approved amendments according to PEC's research noted above;

- A settlement that provided a larger fixed capacity payment reduction than CPUC-approved amendments during the current PPA term, in exchange for a low-cost PPA extension that would provide economic benefit to both PEC and PG&E;
- An “outside of the box” offer to terminate the current PPA, negating need for Legacy Contract relief;
- A settlement structured to have a one-time payment sufficient to retire enough CT allowances to cover PEC's dispatch for the term of the PPA (assuming the inclusion of carbon in the dispatch bids)

These efforts can be seen in Figure 4 which highlights the sequence of attempts PEC has made to solve this issue.

Figure 4



PEC has clearly acted in good faith to settle the legacy contract dispute and provided seven offers to PG&E with several different creative solutions, each one providing compensation based on values associated with a properly-dispatched, carbon price included, peaking power plant. Each time, these proposals were rejected, ignored, or countered with values associated with the Status Quo operations. Until such time as PG&E is forced to negotiate in a manner in which the good of the Program is the goal, such an agreement isn't possible, and therefore CARB must provide PEC with additional transition relief due to the fact that as currently structured the Program is causing direct economic harm to PEC by virtue of allowing PG&E to continue to dispatch the Project with no carbon price signal.

IV. Impact of a Lack of a Carbon Price Signal on PEC's Electric Energy Dispatch Price

The Program clearly expects there to be a uniform price on the electrical energy bid into the market to provide the necessary price signal to consumers⁴⁰⁴. Furthermore, PEC understands that CAISO assumes that a carbon price will be included on ALL electrical energy bid into their system. Such a uniform market signal ensures that California's electricity grid operates in a manner that is both efficient and equitable for all market participants. If one entity's electric energy bid includes a carbon price, and another does not, it skews the electricity market in a number of negative ways. Generators that bid electric energy into the market with no carbon price in their electric energy bid skew the market clearing price for electric energy lower.

The impacts of this issue are broad and stretch beyond just the PEC facility. The impacts are also unsustainable and will lead to permanent economic damage and contribute to long-term environmental degradation.

Since the day PEC's counterparty, in its sole discretion, strategically removed the price of carbon from PEC's electric energy dispatch price, PEC has been exposed and the market price for power has been impacted. Such a price is expected to be passed through to consumers in a market signal. *It is this fundamental policy component that is missing under the current arrangement.* As such, there are environmental, energy market, carbon market and broader policy impacts of having a single entity not playing by the same rules as everyone else. As the Scheduling Coordinator, PG&E confidentially controls the energy dispatch of the PEC power plant. How they dispatch, why they dispatch, and when they dispatch PEC is not transparent, and appears to be without oversight on this issue. The negative impacts listed below are NOT the result of any decisions made by PEC, nor the CPUC, CARB, CAISO or the Local Air District. Those impacts fall solely on PG&E.

Without a price on carbon—the broad market signal that is intended to normalize all power contracts—the following unintended consequences occur:

1) Environmental Impacts to the San Joaquin Valley

- Increased localized air pollutant emissions in a severely Disadvantaged Community
- Increased usage of limited Groundwater

⁴⁰⁴ "If California is going to reduce its emissions to 1990 levels by 2020, we need to find a way to ensure we are going to meet this target and do it in a way that sends a signal to businesses that aren't currently involved in any existing regulations that there's a value in reducing carbon. *The way to do that is to put a price on carbon emissions.*" As stated by Chairman Mary Nichols in Climate Action Reserve interview in 2010. (<https://www.standardcarbon.com/2010/12/qa-with-mary-nichols-chair-of-the-california-air-resources-board/>)

2) Local Economic Impacts

- Unsustainable economic pressure on PEC which could result in permanent loss of high paying energy jobs
- Associated loss of local economic tax base from permanent shuttering of the facility

3) Long-term Economic Impacts

- Potential chilling effect on clean energy investments in California

4) Electric Market Impacts

- Uneconomic dispatch of a California power plant
- Misuse of a peaking power plant built to supplement RPS
- Setting the reference price for the entire power market based on faulty inputs to the system (lack of inclusion of GHG costs)

5) Increased Natural Gas Usage

- Increased operational pressures on infrastructure

6) Cap and Trade Implications

- Manipulation of the Starwood Midway dispatch
- Carbon market distortion
- Potential of Program to bankrupt critical renewable energy infrastructure
- Potential for CARB Adaptive Management review of the issue due to increased Environmental Justice community emissions
- Windfall profits due to the Program's design

7) Impact to PEC Owners and Project Bond Holders

- Retirement funds, pension funds, and others could be materially harmed financially

All of these impacts are negative, but they could all be remedied with the inclusion of a GHG price in PEC's dispatch cost, resulting in PEC operating like the Program was intended. The fact that this happening in the San Joaquin Valley is disconcerting.

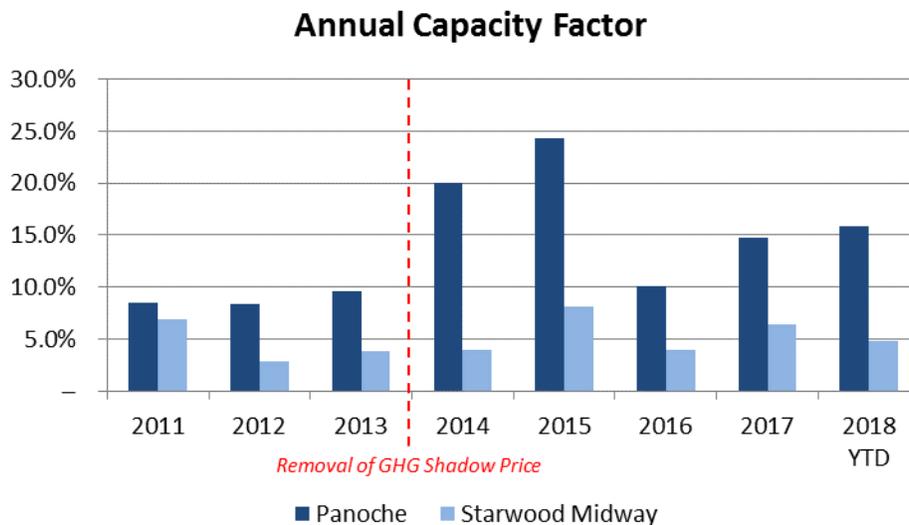
At the March 2017 Board meeting, CARB staff committed to identifying additional emission reductions for meeting PM2.5 standards in the San Joaquin Valley (Valley). One direct and immediate measure would be to assure a carbon price signal is used in all Valley power plants, like PEC. The SIP document also highlights one of CARB's biggest air quality objectives, to electrify the transportation sector and the agricultural

sector where possible. Facilities like PEC need to be able to operate in the manner that they were intended, as a fast-response peaker plant for renewable energy support, to maximize the benefits of these electrification policies. Having a simple cycle peaker plant run *in place of* a more efficient combined cycle power plant due to the Cap and Trade Program’s unintended consequences, is in conflict with the two items being proposed on October 25th.

PEC has provided public comment on numerous occasions and have previously met with CARB’s Cap and Trade Adaptive Management Staff on this issue, testified at the Joint Board/EJAC meeting to inform the Board and those committee members, and generally tried to make it known that these negative environmental consequences were occurring.⁴⁰⁵ This needs to be addressed as the absence of a carbon price signal has negative environmental impacts on disadvantaged communities.

In summary, PEC has dispatched at materially higher capacity factors after the removal of the AB 32 shadow price from its dispatch cost, leading to numerous unintended consequences. As a comparison, Starwood Midway’s dispatch (which PG&E also controls) has remained in line with an expected capacity factor for a peaking facility during this same timeframe. Figure 5 compares PEC’s annual capacity factor to Starwood Midway’s over the last several years to illustrate this.

Figure 5⁴⁰⁶



V. Requested Relief

This is not a new issue for CARB Board Members, as last year you passed Board Resolution 17-21 acknowledging that a solution is still needed for remaining Legacy

⁴⁰⁵ April 26, 2017 meeting <https://www.arb.ca.gov/cc/ejac/meetings/meetings.htm>

⁴⁰⁶ www.snl.com

Contract Holders without an Industrial Counterparty⁴⁰⁷ like PEC. PEC is still hopeful that a contractual solution can be found, but time is of the essence. PEC requests that CARB act now with regard to its ongoing status as a Legacy Contract Holder without an Industrial Counterparty.

PEC supports the Board’s stated commitment to address this issue in any of the ways listed in the following section, and welcome other creative solutions. But in any event, PEC requests the following amendments to the September 4 staff proposal to be adopted into the current rulemaking:

1. Allowances should be granted for the Third Compliance Period (2018-2020) for Legacy Contract Holders without an Industrial Counterparty that previously received legacy contract transition assistance (2013-2017).
2. Allowance allocation calculations should be based on actual dispatch and not a static historic baseline.

Facilitating a solution is important to ensure the Program continues to be consistent with the principles of AB 32⁴⁰⁸ as it moves toward SB 32’s⁴⁰⁹ goals under the direction of AB 398⁴¹⁰. PEC commits to continue to work toward a solution that upholds the integrity and success of the Program. As such, PEC’s additional potential solutions are proposed in the following section.

VI. Potential Solutions

No less than three distinct potential contractual solutions have been proposed by PEC to our counterparty in the past year. Each proposal sought a remedy to solve the policy issue facing CARB—ensuring a price of carbon in the power generated at PEC. CARB is aware that PG&E, as PEC’s Scheduling Coordinator, controls 100% of PEC’s dispatch and has been doing so, since January 1, 2014, without a price of carbon on PEC’s dispatch causing it to run more than true market economics would dictate. As the price of carbon is mandated to increase under the Program, this situation will only get worse through the remaining life of PEC’s Legacy Contract, which runs through 2029, if it is not addressed by CARB.

PEC believes that there are two simple means of solving the issue with PG&E:

- 1) Capacity Price Reduction:** As agreed to in other settlements discussed above (e.g. Starwood Midway), PG&E takes on the carbon compliance obligation in exchange for a reduction in the PPA capacity payment rate to PEC.

⁴⁰⁷ <https://www.arb.ca.gov/board/res/2017/res17-21.pdf>

⁴⁰⁸ http://www.leginfo.ca.gov/pub/05-06/bill/asm/ab_0001-0050/ab_32_bill_20060927_chaptered.html

⁴⁰⁹ https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32

⁴¹⁰ https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180AB398

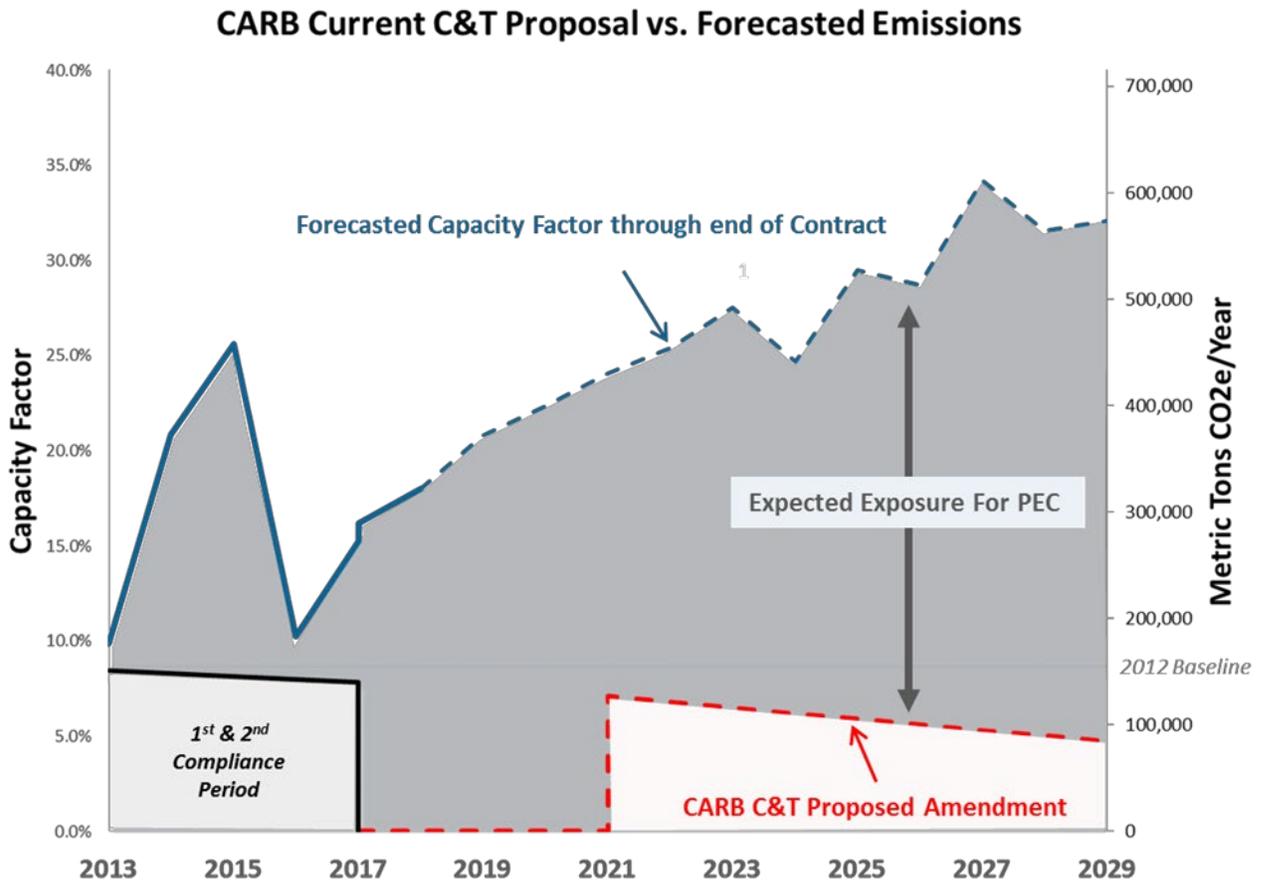
- 2) **One-Time Payment:** PG&E takes on the carbon compliance obligation in exchange for a PEC acquiring and retiring enough credits into PG&E's account for the projected remaining emissions during its PPA term, assuming the cost of carbon is included in PEC's dispatch price.

However, as noted previously, there is not an incentive for PG&E to settle via either of these solutions under the current regulatory construct. As such, CARB is needed to compel PG&E to solve the issue in a manner that considers the goals and principles of AB 32 as the top priority, rather than the interests of PG&E's customers/shareholders. PEC believes that the following would incentivize PG&E to settle the issue in such manner:

- 1) **Diablo Canyon Incentive(s):** SB 1090 has been signed into law and requires PG&E to fulfill its earlier commitment to replace Diablo Canyon's zero-GHG emission profile power with equally zero- emission renewable power. Considering that CARB policy dictates that renewable power costs are not eligible for allowance allocation and the allocation of credits to PG&E associated with the shutdown of Diablo Canyon was given to cover the emissions costs associated with natural gas replacement power, CARB is now free to simply reallocate the millions of tons of allowances provided to PG&E to entities that are truly exposed to increased costs directly related to the Program. PEC would be a minor player in such a scenario and the vast majority of the ~\$2 billion of allowances granted to PG&E could go back into the Greenhouse Gas Reduction Fund.
- 2) **Abbreviated Transition Assistance:** CARB grants PEC's Requested Relief and compels PG&E to settle the longstanding Legacy Contract matter by adopting the already CPUC approved Legacy Contract amendments for PEC. This should be a very brief process provided PG&E is willing to play ball.
- 3) **Hybrid Solution:** Much like our offer to PG&E above where PEC acquires and retires sufficient emissions credits to cover PEC's dispatch (with a carbon price included) for the duration of its Legacy Contract, PEC could acquire and retire those credits into the state account and CARB could create a direct requirement under the Program that requires a price on carbon for all power produced in the state. This would accomplish a price signal on all power and hold PEC accountable for its carbon costs produced during the term of its Legacy Contract.

As described in the PEC Overview section, PEC contributes more than \$20 million dollars per year and generates over 80 jobs for the local and California economy, while playing a critical role in maintaining the grid's reliability. As can be seen in the Figure 6 below, the viability of PEC is truly at stake if none of the above (or another potential solution) is pursued by CARB.

Figure 6⁴¹¹



Summary

PEC remains committed to finding a contractual solution, but in the absence of this, CARB must protect the integrity of the Program and reinstate relief for Legacy Contract holders without an Industrial Counterparty. Without such relief, the Program would continue to harm PEC, its bondholders, its ultimate owners (which include public pension funds in the State of California), and all other stakeholders including PG&E ratepayers and the citizens of the San Joaquin Valley.

Transition Assistance from CARB is still necessary to offset the unrecoverable cost burden of the Program on the PEC facility. Nothing has changed with respect to PEC’s Legacy Contract status or ability to recover these costs. Therefore, so long as the Legacy Contract between PG&E and PEC remains unamended, PEC’s power will continue to be dispatched into the California market without a cost of carbon attached.

The Board has acknowledged that a solution is still needed. PEC supports continued efforts in this direction and looks forward to working, in parallel, with both our

⁴¹¹ Based on third party consultant’s dispatch that assumes carbon is not included.

counterparty on a contract resolution, and with CARB on a regulatory solution. The timing of these dual-track efforts will most certainly cross as any PPA amendment would still need CPUC approval. Therefore, the regulatory solution is still needed. PEC fully understands that upon a CPUC-approved Legacy Contract amendment, the provisions of the regulatory solution would no longer continue. (PANOCHE)

Comment:

I plan to be brief today, but wanted to let you know that Panoche agrees to continue to work with our utility counterparty in good faith to try to find a contract solution. One of the important goals of those negotiations is to ensure a carbon price signal is accurately reflected in the energy price. Having said that, we're here to ask you for help. Our simple request is that the 15-day package includes transition assistance for the third compliance period. Secondly, that historically it's been demonstrated to be effective for Board members to participate in the discussions between counterparties. We request that in the continued negotiations that a Board member participate to help move this forward. Then last, if in the -- if in six months a resolution hasn't occurred, that in the next rulemaking relief is provided by taking allowances from our counterparty to cover emissions. I know that both the Board and staff are eager to get beyond this. And I just want to thank you for your support. (PANOCHE2)

Response: The commenter makes two requests regarding allowance allocation to legacy contract generators without industrial counterparties: (1) CARB should provide allocation for the period 2018 to 2020, and (2) CARB should use an updated baseline to calculate allocation. Allocation for the period 2018 to 2020 is discussed in the Response to 45-Day Comment C-4.3. The selection of the allowance allocation calculation baseline is discussed in the Response to 45-Day Comments C-4.2. With respect to the portions of the comment focused on efforts to renegotiate the contract, CARB staff understands those discussions are still underway and looks forward to seeing a successful resolution to this matter by the two parties involved as this is one of a limited number of legacy contracts that remains.

PG&E and Legacy Contracts

C-4.5. Comment:

X. Legacy Contracts

The Draft Regulation re-introduces the provision of Transition Assistance to legacy contract generators without industrial counterparties. PG&E does not believe that any of its counterparties qualify for such Transition Assistance. The core purpose of Transition Assistance is to reduce the financial responsibility for GHG costs for generators with Power Purchase Agreements (PPA) that do “not allow the covered

entity to recover the cost of legacy contract emissions from the legacy contract counterparty.”⁴¹²

PG&E’s arbitration with Panoche Energy Center (“Panoche”), however, proved that: 1) Panoche’s PPA assigned responsibility for GHG costs to Panoche; 2) at the time Panoche signed the PPA, it understood that it would be responsible for paying future GHG emissions costs; and 3) the PPA already provides for Panoche’s recovery of GHG costs and provides a payment mechanism for that recovery. The arbitrators ruled for PG&E and against Panoche on all counts and issued a reasoned decision detailing the evidence they heard and the rationale for their ruling. Therefore, PG&E reiterates that Panoche does not meet the requirements for receiving Transition Assistance because it is not a party to a legacy contract. (PG&E)

Comment:

The topic you heard about this morning on what was characterized as legacy generators. Our contract, we have I believe one of the last two remaining contracts that some believe are legacy generators. We do not believe ours qualifies for that. Just wanted to let the Board that we continue to negotiate. Met with our counterparty yesterday and are willing to continue to negotiate. At the same time, what the gentleman from Procter and Gamble said this morning I think really hit home for me, which is the more the Board continues to give assistance to counterparties, the less likely those counterparties are to reach agreement. We can't outbid you. Essentially, that's what it comes down to. (PG&E3)

Response: CARB does not comment publicly on potential eligibility for legacy contract transition assistance. Past legacy contract transition assistance recipients are included in the public allowance allocation data available at CARB’s website:

<https://www.arb.ca.gov/cc/capandtrade/allowanceallocation/publicallocation.htm>.

See also Response to 45-Day Comment C-4.4. CARB will continue to assist remaining legacy contract counterparties to facilitate renegotiations.

Post-2020 Allocation Adjustment for Use of Natural Gas Prices

C-4.6. Comment:

Cap-and-Trade Legacy Contract Provisions:

In 2014, the Board approved amendments to the Cap-and-trade to address “legacy contracts”. The purpose was to create an incentive for renegotiation of contracts executed prior to 2006 that do not include provisions for GHG cost pass through.

Cogeneration plants [redacted]... qualified for legacy contract assistance. The effect of the legacy contract amendments is to reduce the steam / electricity purchaser’s cap-

⁴¹² ISOR, Page 56.

and-trade allocation and redistribute the allowances to the cogeneration operator. The purpose of the legacy contract provisions was to encourage renegotiation of contracts. According to the Final Statement of Reasons for these amendments, the “Board direction was to provide transition assistance, not full coverage of an annual compliance obligation. . . [P]roviding full coverage of legacy contract generator’s compliance obligations would provide a disincentive to renegotiate contracts.” (May 2014 FSOR, p. 42). [redacted]

Request for Board Member Assistance:

The Cap-and-Trade 45-day amendments (Sept. 4, 2018) include a new provision that would reallocate an additional amount of “true-up” allowances (95894(e)). We believe SMUD is the only entity that will qualify for these true-up allowances. The stated purpose of this is to account for legacy contract allowances that were withheld due to the assumption that natural gas prices would include GHG costs. Due to a recent CPUC decision, the ARB staff asserts that natural gas prices did not incorporate GHG costs [redacted] **The Board should direct the ARB staff to either remove 95894(e) entirely or at least condition the reward of these true-up allowances on the successful renegotiation of the contract.** (P&G)

Comment:

These comments focus on a narrow cap-and-trade regulatory issue in Section 95894(e) (i.e., “Legacy Contracts”).

In 2014, the Board approved amendments to the Cap-and-trade to address “Legacy Contracts”. The purpose of the legacy contract provisions was to create an incentive for renegotiation of contracts executed prior to 2006 that do not include provisions for GHG cost pass through. In some cases, cogeneration plants serving Electricity Intensive Trade Exposed (“EITE”) steam hosts, qualified for legacy contract assistance. The effect of the legacy contract amendments as applied to EITE entities holding legacy steam contracts is to reduce the steam / electricity purchaser’s cap-and-trade allocation and redistribute the allowances to the cogeneration operator. By redistributing cap-and-trade allowances between private parties, the ARB sought to encourage the renegotiation of these steam contracts to explicitly include GHG costs. However, in attempting to resolve the legacy contract rules, the regulations have not fulfilled the public policy goals of the legacy contract amendments.

According to the Final Statement of Reasons for the legacy contract amendments, the “Board direction was to provide transition assistance, not full coverage of an annual compliance obligation. . . [P]roviding full coverage of legacy contract generator’s compliance obligations would provide a disincentive to renegotiate contracts.”⁴¹³ Despite the Board’s direction on this point, in P&G’s experience, counterparties do not

⁴¹³ California Air Resources Board Cap-and-Trade Rulemaking, Final Statement of Reasons, May 2014 at p. 42.

have incentive to renegotiate the legacy contracts unless the counter parties are willing to offer something better than the legacy contract award (e.g., more allowances, or changes in terms unrelated to GHG costs). In other words, contrary to the Board's original intent, the legacy contract provisions have removed any incentive private parties would otherwise have to renegotiate the legacy contracts to explicitly and fairly address GHG costs.

Of particular concern, the Cap-and-Trade 45-day amendments (Sept. 4, 2018 version) includes a new provision that would reallocate an additional amount of "true-up" allowances (95894(e)). The stated purpose of this new language is to account for legacy contract allowances that were withheld due to the assumption that natural gas prices would include GHG costs. It is critical to understand how gas rates actually changed in the 2015 - 2017 period. For example, based on P&G's review of PG&E's data response to the California Manufacturers and Technology Association (CMTA) in the current PG&E Gas Transportation and Storage rate case at the CPUC, transport rates (i.e., the rates that are often used as a price index for steam sales contracts) rose by 187% from 2015 - 2017.⁴¹⁴ By comparison, backbone transmission rates decreased in the same period.⁴¹⁵ To the extent that a legacy contract holder actually has cap-and-trade allowances costs, the rate changes during this period has provided such legacy contract holders with the cost recovery they need to cover any GHG costs. The ARB should not seek to reallocate allowances through the changes proposed in Section 95894(e). Instead, the ARB should take a critical look at all legacy contracts and inquire why the parties have yet to renegotiate the contracts. The ARB should confirm that the policy of the Board on this issue is that renegotiation must occur and if not, legacy contract awards may not be granted in the future. (P&G2)

Comment:

I'm here today because we have concerns with the proposed amendments to the cap-and-trade regulation. In particular, section 95894(e), known as Legacy Contracts. I believe that the proposed amendments to the legacy contract language is counter to the ARB original intent of the legacy contract provisions to provide transitional allowances that encourages negotiating GHG costs into revised contracts. Section 95894(e) should be removed from the rulemaking package, because it would not encourage renegotiation. And we are concerned that these changes may actually create a new barrier to renegotiating legacy contracts. Furthermore, the Board should consider whether the legacy contract provisions are even necessary at this point.

Given the original intent of the legacy contract provisions, all or most parties should have already revised contracts by now to incorporate GHG costs, absent unusual

⁴¹⁴ CPUC A.17-11-009, PG&E data response, CMTA Ex. 100 at pp. 2 – 4.

⁴¹⁵ PG&E rates can vary within the selected rate period (2015 – 2017). Generally, rates update two or three times per year. In calculating the estimated 187% increase in transportation rates, P&G compared the rate in effect at the beginning of 2015 to the rate in effect at the end of 2017.

circumstances not contemplated when the legacy contract provisions were first promulgated. Give that some parties continue to seek legacy contract relief, rather than renegotiate contracts, it's like that the legacy contract provisions as written have caused unintended outcomes, disincentivizing certain parties from renegotiating. To avoid this unintended cons -- circumstance, we ask the Board to amend the legacy contract provisions to require an applicant to make a demonstration of actual cost exposure linked to legacy contract GHG emissions in light of the free allowances provided to an applicant and its direct corporate associates. (P&G3)

Comment:

One last thing, staff mentioned proposal and 15-day language to remove the true-up of allowances -- legacy allowances based on the CPUC decision. We do not -- we hope you do not adopt that change, because it's important to SMUD. (SMUD2)

Response: Several of these comments express opposition to the legacy contract allocation adjustment for past use of natural gas prices in legacy contracts, which was proposed in the initial proposed amendments. The final comment appears to express support for the “true-up of allowances” that this provision would have provided, if adopted. As indicated in the 15-day Notice, this provision has been removed from the adopted amendments.

As one commenter correctly indicates, the legacy contract provisions of the Regulation are intended to provide transition assistance, not full coverage of a legacy contractor generator’s annual compliance obligation. CARB has previously expressed concerns that providing full coverage of legacy contract generators’ compliance obligations would provide a disincentive to renegotiate contracts. CARB has always calculated, and will continue to calculate, allowance allocation to legacy contract generators based on the most appropriate information available at the time, in light of previous Board direction to provide transition assistance and incentivize contract renegotiation. Given the likelihood that the initial 45-day proposal may have decreased the incentive to renegotiate legacy contracts, the provision has been deleted.

Moreover, the timing of the true-up allocation proposed in the 45-day language—providing v2020 allowances in 2019 to true-up initial v2015-v2017 allowance allocation—would not be timely for managing the relevant compliance obligations because the triennial compliance surrender deadline for all covered emissions in 2015 through 2017 has already occurred (i.e., on November 1, 2018). Based on these considerations, staff removed the proposed true-up allocation provision. Through this change, staff is continuing to implement the legacy contract allocation provisions in a manner that is consistent with current and past implementation. CARB is committed to maintaining consistency and alignment with other State agencies (including the CPUC) whenever possible, and staff will

continue to evaluate opportunities to harmonize policies where appropriate and under a more certain timeframe.

C-5. University Covered Entities and Public Service Facilities

Combined Heat and Power True-Up

C-5.1. Comment:

As currently drafted, the proposed amendments to the Cap and Trade regulations address the University's request to adjust the baseline emissions for the Berkeley campus to the 2018 year to take into account the emissions from the recent ownership transfer of the combined heat and power (CHP) facility. Nevertheless, the amendments do not address the increased emissions from August 2017 through to December 2019 - the period between operations transfer and the effective date of the updated regulations.

To address this gap, the University suggests inserting transition assistance allocation true-up language similar to that which was previously in the regulations. In the 2013 version of regulations, section 95891(e) provided methodologies for calculating the true-up quantities for emission years 2013 and 2014. Much of the same language could be used to allocate allowances to the Berkeley campus to account for its assumption of ownership starting mid- 2017 of the CHP. At current allowance prices, the University estimates that without the true-up the cost for the complying with the increased emissions would be about \$2.5 million for the period at hand. This cost will be in-part borne by students and will inhibit investments for further greenhouse gas reduction. (UC)

Response: In this rulemaking, CARB has enabled changes to baseline allocation values in limited cases where a change in facility ownership causes a university or public service facility to transition from an opt-in covered entity to a covered entity. The allocation methodology does not include a true-up mechanism to retroactively allocate for changes in baseline allocation levels, but it accommodates potential cases where an increase in transition assistance may be needed. CARB believes that the increased levels of allowance allocation available through updating allocation baselines is sufficient for transition assistance to such covered entities, and as such declines to make the requested change.

Allowance allocation to universities and public service facilities is provided for transition assistance during entry into the Cap-and-Trade Program. This allocation was developed to acknowledge early actions while entities transition to lower GHG emitting technologies. Transition assistance is not intended to make entities whole for all potential Program costs.

D. COVERED SECTORS AND EXEMPT EMISSIONS

D-1. Exemptions

Removing Waste-to-Energy Exemption

D-1.1. Comment:

We firmly believe that the cap & trade program must be designed to ensure equitable treatment across all facilities and technologies operating within a given sector. Therefore, we oppose the proposed inclusion of WTE facilities in the program and the proposed allowance mechanism for WTE facilities as the current proposal fails to provide equitable treatment or the transition assistance needed to avoid an undue economic impact of the two remaining WTE facilities in CA. Instead, we ask that CARB apply the cap and trade program uniformly within the waste management sector by providing full transition assistance to WTE facilities until such time as the entire sector can be brought into the cap-and-trade program.

Although WTE facilities generate electricity, they are primarily waste management facilities, comparable to a landfill that is equipped with a landfill gas to energy system. The Stanislaus and Long Beach facilities both report their GHG emissions to CARB under the North American Industrial Classification System (NAICS) code 562213 for Solid Waste Combustors and Incinerators. This is a subset of NAICS code 5622 for Waste Treatment and Disposal, which also includes 562212 for Solid Waste Landfills. Both facilities operate under Solid Waste Facility Permits issued by CalRecycle. Waste management tip fees represent the vast majority of operating revenues at WTE facilities. In 2017, energy represented only 19% of total operating revenues for Covanta.⁴¹⁶

CARB's Board has specifically called for equity within the waste management sector in a series of board resolutions:

"The Executive Officer shall identify and propose regulatory amendments, as appropriate, so that AB 32 implementation, including the cap-and-trade regulation, aligns with statewide waste management goals, provides equitable treatment to all sectors involved in waste handling, and considers the best available information."⁴¹⁷

[T]he Board directs the Executive Officer to work with CalRecycle, other agencies and stakeholders, and propose by 2013 a comprehensive approach for the most appropriate treatment under the Cap-and-Trade program for all end-of-life management options for Municipal Solid Waste, including but not limited to,

⁴¹⁶ See p34 of Covanta Holding Corporation (2018) 2017 Annual Report and 10-K.

⁴¹⁷ State of California Air Resources Board (2011) Resolution 11-32

<https://www.arb.ca.gov/regact/2010/capandtrade10/res11-32.pdf>

landfills, waste-to-energy, composting, and recycling to be implemented starting January 1, 2015.”⁴¹⁸

The Proposed Regulation does not meet this call for equity in the waste management sector. CARB staff acknowledges this in its Initial Statement of Reasons, stating that “this approach provides equitable treatment of facilities *in the waste-to-energy sector* [emphasis added] and accurately allocates allowances for the purpose of transition assistance through vintage 2024.” Equity within the waste-to-energy sector has never been the issue for the two remaining WTE facilities in California. These two facilities are over 300 miles apart from each other and operate in completely different markets.

The Proposed Regulation also fails to meet the logical intent of the most recent Board Resolution to provide for transition assistance, the original goal of which is to “avoid imparting undue initial economic gain or loss to covered entities through allocation.”⁴¹⁹

“[T]he Board directs the Executive Officer to work with the three existing waste-to-energy facilities that are covered by the Cap-and-Trade program to provide transition assistance for a compliance obligation beginning in 2018 and ending when landfill diversion is required to achieve a 75 percent diversion rate by 2025.”

As currently proposed, we estimate the overall financial impact to the two WTE facilities to be \$62 M over the 12 year period from 2018 – 2030, equivalent to raising tip fees by approximately \$6.40 / ton. Landfills will face no such compliance obligation.

Even without the requirement to purchase allowances, WTE facilities are under financial pressure. According to CalRecycle’s 2015 report, WTE “is actually a more expensive alternative to landfilling in California when compared to the statewide median as well as the surrounding landfills.”⁴²⁰ The Commerce Refuse-to-Energy Facility, permanently closed on June 26, 2018 citing the cost of continuing to operate. All of the waste is now going to landfills and generating addition GHG emissions. Furthermore, we have no ability to pass costs through to our solid waste or electricity customers.

WTE facilities were initially exempted on the basis of science and to ensure parity of treatment across the waste management sector. With CalRecycle’s recognition of the GHG benefits of WTE relative to landfilling (see excerpt below), it was clear that including WTE in the cap and trade program while landfills were excluded would result in unequal treatment within the waste sector, and potentially result in leakage of GHG emissions from a capped source, WTE, to an uncapped source, landfilling.

⁴¹⁸ State of California Air Resources Board (2012) Resolution 12-33
<https://www.arb.ca.gov/cc/capandtrade/res12-33.pdf>

⁴¹⁹ CARB (2010) Initial Statement of Reasons, Appendix J: Allowance Allocation

⁴²⁰ CalRecycle (2015) Landfill Tipping Fees in California
<https://www2.calrecycle.ca.gov/Publications/Download/1145>

“Published LCA studies and best available published direct measurement data support CalRecycle staff’s general conclusions. CalRecycle staff concludes that the three existing California WtE facilities provide net avoided methane emissions over waste otherwise disposed in a California landfill. The net avoided emissions exceed non-biogenic emissions from burning of the fossil fuel-based components such as plastic in the WtE facility.”⁴²¹

Since the initial exemption of the existing WTE facilities in 2012, the recognition of WTE as a source of GHG mitigation has grown. In 2014, CARB itself, concluded that WTE offers GHG reductions relative to landfilling:

“Preliminary staff estimates ... indicate that combusting waste in the three MSW Thermal facilities in California results in net negative GHG emissions, ranging from -0.16 to -0.45 MT CO₂e per ton of waste disposed, when considering that the waste would otherwise be deposited in landfills resulting in higher emissions.”⁴²²

In 2013 and 2014, the Center for American Progress and Third Way have both reviewed WTE and validated its GHG benefits.^{423,424} In addition, the Joint Institute for Strategic Energy Analysis (JISEA) operated on behalf of the U.S. Department of Energy’s National Renewable Energy Laboratory, the University of Colorado-Boulder, the Colorado School of Mines, the Colorado State University, the Massachusetts Institute of Technology, and Stanford University published a report in 2013 after a review of solid waste management options for Boulder’s municipal solid waste concluded WTE was a better option than landfilling:

“We find that MSW combustion is a better alternative than landfill disposal in terms of net energy impacts and carbon dioxide (CO₂)-equivalent GHG emissions.

“Life cycle assessment studies published in the literature have generally been consistent in suggesting that MSW combustion is a better alternative to landfill disposal in terms of net energy impacts and CO₂-equivalent GHG emissions. The results from this study match that expectation.

⁴²¹ CalRecycle. 2012. CalRecycle Review of Waste-to-Energy and Avoided Landfill Methane Emissions. Available at:

<http://www.calrecycle.ca.gov/Actions/PublicNoticeDetail.aspx?id=735&aiid=689>

⁴²² See Table 5 of California Air Resources Board (2014) *Proposed First Update to the Climate Change Scoping Plan: Building on the Framework, Appendix C – Focus Group Working Papers, Municipal Solid Waste Thermal Technologies*

⁴²³ Center for American Progress (2013) *Energy from Waste Can Help Curb Greenhouse Gas Emissions* <http://www.americanprogress.org/wp-content/uploads/2013/04/EnergyFromWaste-PDF1.pdf>

⁴²⁴ Third Way (2014) *Power Book: Energy from Waste*, <http://powerbook.thirdway.org/filter-web-app/energy-from-waste>, accessed November 26, 2014.

In this report, WTE leads to a higher reduction in emissions compared to landfill-to-energy disposal per kWh production.”⁴²⁵

Then in 2016, Berkeley Law released a report earlier this year in response to a request from the Governor’s office, looking at the merits and demerits of energy recovery options for wastes remaining after reaching the state’s 75% recycling goal. The authors conclude that:

“Harvesting these leftover materials as solid waste energy sources could provide multiple environmental benefits:

- complementing intermittent renewable energy, such as wind and solar, to offset fossil fuel- based energy sources and associated greenhouse gas emissions; [and]
- avoiding landfill emissions of methane (a potent greenhouse gas that is 28-34 times as strong as carbon dioxide over 100 years) by diverting wastes to energy, particularly organic wastes;”⁴²⁶

In its 1st update to the Climate Change Scoping Plan, CARB explicitly recognized the risk of higher GHG emissions from uneven treatment in the waste management sector:

“Another approach is to add MSW Thermal facilities to the Cap-and-Trade program in 2015, while leaving other Waste Sector sources out. Under this approach, MSW Thermal plants would have an incentive to reduce their GHG emissions over time through control of input feedstock and other techniques. However, a challenge with implementing this approach is that MSW Thermal plants have a modest potential to reduce their GHG emissions. Over time, they may have to purchase more emissions credits, making them increasingly less competitive compared to traditional landfills. ***This approach would likely result in more GHG emissions if it results in an increase in MSW going to landfills.***” [emphasis added]

CARB already understands how to provide equity within the waste management sector. In the same document, CARB noted two approaches that would provide a level playing field, both of which rely on treating the waste management sector the same way under the cap and trade program:

“Remove MSW Thermal Facilities from Cap-and-Trade post-2015

⁴²⁵ Joint Institute for Strategic Energy Analysis (2013) *Waste Not, Want Not: Analyzing the Economic and Environmental Viability of Waste-to-Energy (WTE) Technology for Site-Specific Optimization of Renewable Energy Options*. <http://www.nrel.gov/docs/fy13osti/52829.pdf>

⁴²⁶ Berkeley Law Center for Law, Energy & the Environment (2016) *Wasting Opportunities: How to Secure Environmental & Clean Energy Benefits from Municipal Solid Waste Energy Recovery*. <https://www.law.berkeley.edu/research/cee/research/climate/waste-to-energy/>

Under this option, MSW Thermal facilities would be removed from the Cap-and-Trade Regulation for the foreseeable future. This approach would put MSW Thermal facilities on a level playing field within the Waste Sector, where none of the methods of handling MSW would be subject to the Cap-and-Trade Regulation. ...

Add MSW Thermal Facilities and Other Waste Sector Sources to Cap-and-Trade in 2015

Under this approach, MSW Thermal facilities and other options for handling waste (such as landfills) would be subject to the Cap-and-Trade Regulation. This would provide a level playing field for power generation and potentially avoid increases in waste disposal at landfills from a reduction in combustion of MSW.”

We recognize that the steps the California Legislature and CARB have taken to divert organics from landfilling will impact the composition of the waste stream that is managed in WTE, including SB 1383. However, we do not think it is appropriate to presume the results of these actions, or their effect on the GHG benefits of WTE relative to landfilling. Therefore, we initially proposed a solution to CARB in comments dated January 20, 2017, which we refined in subsequent discussions, that would have taken organics diversion into account. Under our proposed approach, WTE’s exposure to the cap and trade program would have increased based on the actual organics diversion achieved in practice, on the basis of CalRecycle’s regular statewide waste characterization studies. The proposal was rejected, not on its merits, but because the regulation wasn’t designed to accommodate the approach.

In addition to the GHG benefits described above, California’s WTE facilities provide other important benefits. The facilities in Long Beach and Stanislaus are the only two locations in California permitted to destroy narcotics. Since 1988, SERRF has destroyed 11.2 million pounds of confiscated narcotics and drug paraphernalia for over 121 cities, counties, state, and federal law enforcement agencies. In 2016, Stanislaus processed over 216 tons of confiscated narcotics, firearms and drug paraphernalia for over a 100 cities, counties, state and federal law enforcement agencies.

California’s two remaining WTE facilities operate well within their permit requirements and have taken steps over the years to reduce their environmental impacts:

- In 2011, the Long Beach facility voluntarily commenced operation of an activated carbon injection system, which reduced mercury (Hg) and dioxin emissions by 86%.⁴²⁷

⁴²⁷ The average concentration of Hg and dioxins / furans emissions over 2008-2010 were 33.0 µg / dscm and 6.8 ng / dscm respectively, prior to installation of the carbon injection system. Average emission concentrations over the most recent three-year period, 2015-2017 were 4.5 µg / dscm and 1.0 ng / dscm, respectively, representing reductions in emission concentrations of 86.3% for mercury and 85.6% for dioxins / furans.

- In 2017, the Stanislaus facility filed a permit application to install proprietary Low NOx technology with new lower NOx limits. The \$4 - \$5M capital investment will result in an estimated 30% reduction in annual NOx emissions, once complete. This will reduce formation of PM2.5 in San Joaquin Valley, a nonattainment area for fine particulate.
- In 2013, the Stanislaus facility installed a non-ferrous metal recovery system and upgraded its ferrous metal recovery system. Annually, the two WTE facilities in California recover over 18,000 tons of metal for recycling that would have otherwise been lost in landfills, saving, on a lifecycle basis, over 41,000 tons of CO2e every year relative to producing metals from virgin materials.

By including WTE in the cap and not including landfills, CARB will create the perverse effect of incentivizing more waste to landfills resulting in increased GHG emissions. To resolve this issue, we ask for equitable treatment in the waste management sector, called for in board resolutions from 2011 and 2012. Consistent with CARB’s own conclusions, a level playing field is best achieved by treating the entire waste management sector the same, either within, or outside of, the cap-and-trade program. CARB’s ability to bring landfills under the cap and trade program is restricted until at least 2025 by SB 1383. As a consequence, we propose that the best path forward is to provide allowances equal to the covered emissions from the state’s two WTE facilities as the necessary transition assistance needed to avoid an undue economic loss to WTE as a covered entity relative to landfills. (COVANTA)

Comment:

Waste-to-Energy CARB Draft

September 2018

- The current draft regulation does not treat the waste management sector consistently: the lower GHG option of WTE (**recognized by CARB & CalRecycle, see below**) is capped, but landfills are not.

	GHG Emissions Reduction (-) from WTE Relative to Landfills
CalRecycle (2012)	-0.07 to -0.24 t CO ₂ e / ton MSW
CARB (2014)*	-0.16 to -0.45 t CO ₂ e / ton MSW

* Includes energy and metals GHG benefits

- CARB’s September 2018 proposal still imposes estimated costs of \$62 million from 2018-2030 on two facilities.
- CA’s 2 WTE facilities manage 2% of the amount of MSW that landfills manage – WTE facilities have no leverage in the market to raise prices.

- CARB’s 2018 proposal states, “provides equitable treatment of facilities in the waste-to-energy sector.” [ISOR, p.56] **This has never been the issue for WTE facilities in CA.**
- Earlier board resolutions called for equity in the waste management sector. Yet, landfills are exempt from the cap until at least 2025.

	Cap & Trade Cost, 2018 – 2030 (million 2018 \$)		
	No Allowances	CARB 2017 Proposal	CARB 2018 Proposal
Long Beach	\$56 M	\$47 M	\$39 M
Stanislaus	\$37 M	\$30 M	\$23 M
Total WTE	\$93 M	\$77 M	\$62 M
Landfill	\$0	\$0	\$0

- The risk to CA’s WTE facilities is real: the Commerce Refuse-to-Energy Facility (CREF), permanently closed on June 26, 2018 citing the cost of continuing to operate. All of the waste is now going to landfills and generating addition GHG emissions.
- CARB studied WTE specifically as part of the 1st Update to the Climate Change Scoping Plan.

Add MSW Thermal Facilities into Cap-and-Trade in 2015

Another approach is to add MSW Thermal facilities to the Cap-and-Trade program in 2015, while leaving other Waste Sector sources out. Under this approach, MSW Thermal plants would have an incentive to reduce their GHG emissions over time through control of input feedstock and other techniques. However, a challenge with implementing this approach is that MSW Thermal plants have a modest potential to reduce their GHG emissions. Over time, they may have to purchase more emissions credits, making them increasingly less competitive compared to traditional landfills. ***This approach would likely result in more GHG emissions if it results in an increase in MSW going to landfills.***

Remove MSW Thermal Facilities from Cap-and-Trade post-2015

Under this option, MSW Thermal facilities would be removed from the Cap-and-Trade Regulation for the foreseeable future. ***This approach would put MSW Thermal facilities on a level playing field within the Waste Sector, where none of the methods of handling MSW would be subject to the Cap-and-Trade Regulation.***

Add MSW Thermal Facilities and Other Waste Sector Sources to Cap-and-Trade in 2015

Under this approach, MSW Thermal facilities and other options for handling waste (such as landfills) would be subject to the Cap-and-Trade Regulation. ***This would provide a level playing field for power generation and potentially avoid increases in waste disposal at landfills from a reduction in combustion of MSW.***

[The attached slides discuss criteria and toxic air pollutant emissions from the waste-to-energy facilities in Stanislaus and Long Beach relative to permit levels and relative to the overall emissions within each air district. The slides also provide information comparing Energy from Waste (EfW) to landfills as an end use of waste and comparing lifecycle GHG emissions for various energy sources. Slides also discuss “GHG benefits of EfW,” landfill methane emissions, and the “EfW Process.” The presentation appears intended to support the statements in the comment letter. The slides can be viewed in the attachment to the comment letter at <https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=ct2018>.] (COVANTA2)

Comment:

I'm also in support of the waste-to-energy facility, which would be negatively affected by staff's proposed changes to the cap-and-trade compliance mechanisms before you today. The city has a long history of supporting the Cap-and-Trade Program, as I had mentioned. And I'd also like to share a little bit about why we also choose to use waste to energy.

So back in 1988, our community decided that waste to energy is a cleaner and more sustainable way to manage municipal solid waste as compared to landfills. Those are the two options that we had back then, and they remain the two options that we have today for municipal solid waste. We are proud we take 100 percent of our non-recyclable trash to -- collected curbside to this facility, which has had a significantly smaller footprint than even the smallest landfill. The facility also reduces waste volume by over 90 percent while also supporting metals recycling and narcotics disposal for state, federal, and local law enforcement agencies across Central and Southern California.

We are proud that over the years the city and our private operator have taken the initiative to proactively improve the facility's emissions technologies by installing a carbon injection system, and ammonia injection system, and we continue to use the best available technologies and practices available.

These improvements have allowed us to ensure emissions from the facility consistently fall well below the -- our air permit requirements, and in most cases by 80 to 90 percent. We are proud that we chose to locate this facility in the Port of Long Beach

near many other industrial uses and away from homes. To summarize, our community values waste to energy.

In an effort to buy time for city staff to identify an economically viable option for keeping the facility, our city council just two months ago voted unanimously to allocate 8.7 million to -- in local resources to support facility equipment maintenance and allow for opportunities to process higher value waste. We are also pleased our contracted operator is putting an additional five million towards these improvements. As mentioned, city staff are currently trying to identify an economically viable path forward for the facility.

From a facility management perspective, we are at a cross road. Our power purchase agreement, which we have relied on to support many of the facility's expenses, expires at the end of the year, while the bonds we issued to pay for the facility while also be diffused at the end of the year.

But with that said, the facility does need additional maintenance to ensure that we can continue operating well below air permits as we intend to, but for which significant resources will be needed beyond what was already approved two months ago for long-term improvements. So the question is, is there a way we can make meaningful improvements to the facility to keep it operational long term? If not, then that means that California's seventh largest city will go back to landfilling just like every other city in California has been doing with their waste. And so with that, we're asking simply for parity for waste to energy in landfills. (LONGBEACH)

Comment:

We're a waste energy company that has two facilities in California. We operate the facility for the City of Long Beach in Long Beach, and then we own and operate a facility in Stanislaus, where we process municipal solid waste that would otherwise go to a landfill. By doing that -- you know, these facilities were build to take care of waste.

And so we follow the waste hierarchy, the reduce, reuse, recycle. So we max -- make sure our communities are maximizing recycling efforts, and then we take the stuff remaining from those into our facilities. We combust it at a high temperature, clean the air. Our emission profile is very low.

And we've shared a lot of that data with the -- with the Board. We're concerned that the current regulation and the current amendments do not treat the waste sector evenly, and there's a significant, you know, non-parity here. All we're asking for is to be treated the same as landfills. Landfills were legislatively taken out of the cap. We are in the cap.

We're actually better from a greenhouse gas perspective than landfills. So for every ton of waste we process on a national average, we reduce greenhouse gas emissions by about a ton. It's a little smaller reduction in California, because of your low carbon grid, which is terrific. But both CalRecycle and CARB have both done independent studies

that have shown that waste energy is a far better alternative than landfilling of this material. So we are asking that the Board consider making some additional changes to the amendments and bring parity into the waste sector.

I think we have been brought into the electricity sector into the Cap-and-Trade Program. And that's really not where we fit. We do not -- our existence is not to create electricity.

Our existence is to get rid of waste, which is against the land -- you know, kind of competing with landfills. And so the energy that we generate about nine times more power than a landfill gas project is a terrific co-benefit, but not the primary function.

And so we'd ask that the -- you know, the Board consider this.

The CARB in their 2015 amend -- appendix C was -- basically spoke to this exact question. So they were looking at whether -- if you put waste energy in the cap and you left landfills out of the cap what would happen, and I quote, "This approach would likely result in more greenhouse gas emissions, if it results in the increase MSW going to landfills". And so all we're doing -- all we're asking for is to kind of follow the science here and to remain consistent with what the findings of the staff has been. (COVANTA3)

Response: The commenters request that CARB allocate allowances in an amount equal to covered emissions for covered waste-to-energy (WTE) facilities. The commenters also request parity for WTE facilities and landfills under the Cap-and-Trade Program.

Comments about excluding the waste-to-energy sector from the Program and including landfills in the Program are outside the scope of this rulemaking. The 2016 amendments, which the Board adopted in July 2017 and which went into effect October 1, 2017, ended the limited exemption from a compliance obligation for WTE facilities. This limited exemption was implemented through an allocation of free allowances to the WTE facilities to cover their entire compliance obligation from 2013 through 2017. Beginning in 2018, waste-to-energy facilities incur a compliance obligation and must acquire and surrender compliance instruments in an amount equal to covered emissions. Continuing to provide all allowances needed for compliance would be tantamount to continuing the limited exemption, which has already been terminated in a previous rulemaking.

Regarding the commenter's request for "parity" between WTE facilities and landfills under the Program, landfills are subject to direct regulation to reduce GHG emissions per the 2009 Landfill Methane Control Measure, while WTE facilities are not. The existing Landfill Methane Control Measure requires most landfills to use gas collection and control systems to capture and use methane generated at landfills. There is a cost for compliance and annual reporting under these direct regulations. At the inception of the Cap-and-Trade Program, CARB excluded landfill methane emissions to recognize early actions taken by landfills to limit these emissions. CARB reinforced this determination in the 2012 Cap-

and-Trade Regulation amendments when it did not adopt a landfill methane destruction offset protocol because analysis showed it would achieve few additional reductions beyond those already required by California's landfill regulation.

State policies focus on the highest and best use of waste materials, in particular recycling, composting, and anaerobic digestion. SB 1383 requires implementation of the Short-Lived Climate Pollutant (SLCP) Strategy by January 1, 2018 and codifies the 2030 SLCP emissions reduction targets, which specify reducing landfill methane via diversion of organic materials. Organic waste entering landfills must be reduced by 50 percent from 2014 levels by 2020, and by 75 percent from 2014 levels by 2025. CalRecycle and CARB will collaborate to develop regulations to divert organics from landfills, with regulations to take effect on or after January 1, 2022.

Board Resolution 17-21 directed staff to "...work with the three existing waste-to-energy facilities that are covered by the Cap-and-Trade Program to provide transition assistance for a compliance obligation beginning in 2018 and ending when landfill diversion is required to achieve a 75 percent diversion rate by 2025." In response to this direction, the 45-day amendments specified eligibility criteria for WTE facilities to receive allowance allocation; provided for allowance allocation during the period 2018-2024; and specified an allowance allocation calculation methodology. The 45-day amendments proposed to provide free allowance allocation to WTE facilities based on a historic average of annual covered emissions less the emissions associated with sold electricity that is generated from non-biogenic fuel.

At the Board Hearing on November 15, 2018, the Board noted that, historically, sectors newly covered by the Program have had higher levels of transition assistance during initial years in the Program, and the Board directed staff to continue to evaluate WTE allocation levels and consider providing a higher level of allocation for transition assistance through 2024. In response to Board direction, CARB released a 15-day proposal that bases allocation on the historic average of annual covered emissions for the 2011-2017 data years, without subtracting emissions associated with sold electricity, and the cap adjustment factor, which declines each year in proportion to the overall cap on emissions. CARB anticipates that the revised proposal will result in increasing the level of allowance allocation in the third compliance period from approximately 65 percent of historic covered emissions (under the 45-day proposal) to approximately 90 percent.

In making these changes, CARB has responded to the commenters request by providing additional transition assistance, but is maintaining the constraints on the duration of this assistance given Board Resolution 17-21, Board direction at the November 15th hearing, and SB 1383 requirements.

Extending Deadline for But-For Combined Heating and Power Exemption

D-1.2. Comment:

Summary

During the pre-rulemaking stakeholder phase of this rulemaking, Qualcomm expressed concerns with a technical flaw in how its facilities are treated compared to those of its competitors.⁴²⁸ In addition to public comments, Qualcomm provided documentation to the ARB demonstrating trade exposure that industries within its NAICS code face as a result of California-specific carbon costs. Qualcomm considers some of these submittals to be confidential business information. Qualcomm is hopeful (subject to the ARB's confirmation) that the Proposed Amendments would correct the technical flaw in Section 95852(j) (i.e., the limited exemption for qualified thermal output).

Qualcomm understands that the Proposed Amendments would extend the deadline for filing for limited exemption for qualified thermal output. This extension could allow the ARB to reassess the applicability of the exemption in scenarios where there is more than one cogeneration unit within a facility (See Section 95852(j)). However, the Regulation may lack clarity on this point. As such, the ARB should confirm that each distinct cogeneration "unit" within a facility (as that term is used in Section 95852(j)) can individually qualify for the limited exemption.

Qualcomm understands the amendments in 95852(j) cover a scenario where a cogeneration unit that did not previously qualify the limited exemption (i.e., due to the technical flaw in 95852(j)) will receive retroactive true-up allocations for past compliance periods. Again, the Proposed Regulations lack clarity on this point...

Discussion

1. The ARB Should Clarify the Intent of the September 4, 2018 Amendments to Section 95852.

Board Resolution 12-33 and the "but-for-CHP exemption" were intended to incentivize new, efficient distributed electricity generation technologies, such as Combined Heat and Power ("CHP"). Section 95852(j) sets forth an important exemption that applies to any "facility with a cogeneration unit that meets the requirements of this section." Based on the language in the exemption, Qualcomm believes that the exemption would be calculated for each "cogeneration unit." To date, the Regulations have lacked clarity as to whether Section 95852(j) applies at the cogeneration unit level or at the facility level. There are instances where there are multiple cogeneration units within a single facility boundary. The facility definition set forth in the Mandatory Reporting Regulation is broad and in certain instances encompasses multiple cogeneration units that are

⁴²⁸ Qualcomm Cap-and-Trade comments (July 5, 2018), available at: <https://www.arb.ca.gov/lists/com-attach/12-ct-6-21-18-wkshp-ws-VmdWaFdmBGACNFRh.pdf> ; See also Qualcomm Cap-and-Trade comments (October 27, 2017), available at: <https://www.arb.ca.gov/lists/com-attach/12-ctoct122017wkshp-ws-V2YHNIZmUjFXYwM0.pdf>

functionally separate, but are nevertheless part of the same facility due to common ownership. In these instances, if the cogeneration units are functionally separate, the exemption should be applied separately to each cogeneration unit. If each unit emits less than 25,000 metric tons after applying the exemption, then each unit should individually qualify for the limited exemption. Further, if each unit is individually below 25,000 metric tons (i.e., without applying the but-for CHP methodology), then the facility as a whole should not be subject to a direct cap-and-trade compliance obligation. Qualcomm understands the ARB's amendments to Section 95852(j) would create an avenue for multiple cogeneration units to qualify individually even if they are within a common facility boundary. However, additional clarification on this point is needed to avoid an arbitrary application of Section 95852(j) to similarly situated cogeneration units. (QUALCOMM)

Response: The commenter requests that CARB redefine the limited exemption of emissions from the production of qualified thermal output to be applicable at the unit level rather than at the facility level. CARB declines to make this change. CARB's intent for the exemption is, and always has been, to account for facilities (as defined by MRR) that would fall below the Program inclusion threshold of 25,000 MTCO_{2e} "but for" their installation of combined heat and power (CHP) systems. Pursuant to the Cap-and-Trade Regulation, CARB has always assessed covered emissions and potential exemptions at the facility-level, not vis-à-vis each individual unit, and CARB must continue this approach to ensure the environmental integrity of the Program. Thresholds for inclusion in the Program, and for potential exemption, were developed for operators of facilities, not specific units, and these must be applied consistent with that intent and the clear language of the Regulation.

Since the inception of the Program, CARB has worked diligently with Qualcomm to assess various options to address leakage risk for Qualcomm campuses within the framework of the Program. In 2012, Qualcomm approached CARB to request adding a "but for" CHP exemption to the Program to provide transition assistance to facilities with emissions that would fall below the Program inclusion threshold "but for" their installation of CHP systems. CARB worked with Qualcomm to include this provision in the Program as part of the 2013 Cap-and-Trade Regulation amendments. A facility with a CHP unit may be eligible for the "but for" CHP exemption if emissions from the steam generation and electricity generation are each below 25,000 MTCO_{2e} for each year from 2008 through 2013. At the time CARB adopted this exemption, the existing Qualcomm facility in question met the eligibility requirements as drafted by CARB, but subsequent facility modifications caused the facility to be ineligible for the exemption.

The definition of a "facility" in the Cap-and-Trade Regulation is, in part, "Any physical property, plant, building, structure, source, or stationary equipment located on one or more contiguous or adjacent properties in actual physical

contact or separated solely by a public roadway or other public right-of-way and under common ownership or common control, that emits or may emit any greenhouse gas.” This is consistent with the “facility” definition in the U.S. Environmental Protection Agency’s Mandatory Greenhouse Gas Reporting requirements in 40 Code of Federal Regulations Part 98, which forms the basis of how facilities are defined for the Cap-and-Trade Regulation. Structures, sources, and equipment on contiguous or adjacent property, in actual physical contact, and under common ownership or control clearly meet the definition of a single facility. CARB consistently applies this definition to all facilities in the Program. The “facility” definition is fundamental to the Program, as operators of facilities that emit 25,000 MTCO_{2e} per year or more are covered entities pursuant to the Regulation. Any changes to this definition would have far-reaching consequences for many aspects of the Program and would lead to inconsistencies with other GHG reporting programs. Therefore, CARB has no intention of modifying the “facility” definition, or applying a different “facility” definition to the Qualcomm campus.

For more information on other efforts to address leakage risk for Qualcomm campuses within the framework of the Program, see Response to 45-Day Comment C-1.10.

Fuel Cell Exemption

D-1.3. Comment:

For the past 26 months, Bloom Energy has worked with the ARB to address the direct cap-and-trade compliance obligation imposed on fuel cells. Fuel cells reduce greenhouse gas emissions and improve criteria air pollutants compared to the grid and compared to multiple other electricity generating technologies. However, the ARB regulations assign a compliance obligation to emissions from a fuel cell but treat less efficient combustion technologies as emissions without a compliance obligation. This regulatory treatment has the unintended consequence of increasing GHG emissions and criteria air pollutants, as ARB regulations are leading some customers to choose dirtier grid electricity backed up by diesel generators, or less efficient combustion cogeneration technologies, instead of installing fuel cell technologies. Additionally, since this direct cap-and-trade compliance obligation will prevent some fuel cell projects from proceeding, it will reduce the fuel cell industry’s capacity to make investments to address the immense challenges that currently stand in the way of increasing the use of biogas for electricity generation. Deploying biogas in fuel cells results in even greater greenhouse gas emissions reductions.

This situation pushes a zero-net carbon future further out into the future. These comments reiterate a proposal that Bloom provided in the pre-rulemaking phase of this proceeding. Bloom’s proposal would help enable both GHG emissions reductions and criteria pollutant reductions through the deployment of fuel cells. The formula proposed

herein mirrors the but-for-CHP exemption and would ensure that customers are not penalized by choosing to switch to fuel cells. These changes are within scope of the present rulemaking and we urge the ARB to adopt them expeditiously to advance the mission of the Cap-and-Trade: to reduce the greenhouse gas emissions that cause climate change.

Background

In the original Cap-and-Trade rulemaking, the ARB included fuel cells as an emission source without a Cap-and-Trade compliance obligation (i.e., Section 95852.2). The significance of including fuel cells in Section 95852.2 and the letter the Executive Director sent to Bloom Energy dated May 23, 2013 (Attached below) [The attachment is a letter from CARB Executive Officer to Bloom Energy indicating that fuel cell technologies are exempt from a compliance obligation under the Cap-and-Trade Program but are required to report emissions pursuant to MRR. This document can be viewed in the original comment letter at the comment log for this rulemaking: <https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=ct2018>.] confirming the treatment of fuel cells offered a clear demarcation that fuel cells are GHG reducing with co-benefits that afford them unique treatment in recognition of these important attributes.

In 2016, the ARB amended the Cap-and-Trade Regulation to remove fuel cells as an “emissions source without a compliance obligation” but continued to afford similar treatment to combustion CHP technologies. This change has been problematic, as it dissuades potential customers from procuring fuel cells as a low-carbon intensity (CI) alternative to grid electricity with virtually no criteria pollutants. By having a direct cap-and-trade compliance obligation, some customers do not perceive fuel cells as a low-CI alternative. Moreover, the prospect of having a direct compliance obligation (as opposed to simply paying GHG costs imbedded in gas rates), has led to concerns of new administrative burdens and regulatory risks for potential fuel cell owners and operators—leading customers to choose dirtier diesel generators and/or less-efficient cogeneration technologies.

The number of fuel cell facilities subject to a direct cap-and-trade compliance obligation is relatively small (based on Bloom’s estimates, less than 100,000 MT/year). However, the impact on the fuel cell industry’s ability to market its systems is significant. Additionally, since this direct cap-and-trade compliance obligation will prevent some fuel cell projects from proceeding, it will reduce the fuel cell industry’s capacity to make investments to address the challenges that currently stand in the way of operating fuel cells using biogas. Deploying biogas in fuel cells results in even greater greenhouse gas emissions reductions. This situation pushes a zero-net carbon future further out.

Proposed Solution

To address these concerns and to prevent ARB from inadvertently encouraging California entities from picking dirtier technologies, Bloom proposed in comments on

June 21, 2018 that the ARB should mirror the logic of the but-for-CHP exemption in the fuel cell context. The but-for-CHP exemption allows facility operators to avoid a direct cap-and-trade compliance obligation through a “but-for-CHP” formula. The CHP formula subtracts emissions attributable to thermal energy from the total emissions of the CHP facility. If the resulting emissions are less than 25,000 MT, the facility is exempt from a direct cap-and-trade compliance obligation. Facilities qualifying for this provision are still subject to paying for cap-and-trade costs through their gas purchases from the utility. As noted in the Final Statement of Reasons for the 2013-14 Cap-and-Trade Rulemaking, the CHP exemption ensures that facilities that currently have cogeneration systems are not disadvantaged compared to similar facilities that produce their own thermal energy with boilers and purchase electricity from the grid.”⁴²⁹ Natural gas fuel cells have a much lower CI than the current CI for grid electricity, and the ARB could account for this fact through a similar limited-exemption calculation applicable to natural gas fuel cells.

Under Bloom’s proposal, the ARB would compare natural gas fuel cells to the emissions factor set forth in the California Energy Commission’s Thermal Efficiency Report, which is updated on an annual basis. The ARB would compare a natural gas fuel cell’s emissions rate (on a MWh basis) to the CEC thermal efficiency rate. The “delta” between the two emissions rates would be the amount of emissions avoided by the customer in choosing to switch to a fuel cell system. The ARB would subtract this “delta” from the total facility emissions of the fuel cell. If the resulting emissions are less than 25,000 MT, the fuel cell operator would be permitted to pay for its share of cap-and-trade costs indirectly through the natural gas utility. This proposal is detailed in proposed regulatory amendment text in Attachment A to these comments.

Bloom’s Proposal to Address Fuel Cells is within the Scope of the Present Rulemaking

Bloom has engaged collaboratively with ARB staff—sharing data, making presentations, organizing multiple meetings—to find a solution for the past 26 months. We have been willing partners and—for the sake of our business, our customers, California’s economy, and climate change—desire to resolve this uncertainty.

The proposals Bloom made in the pre-rulemaking process to provide natural gas fuel cells with a transition to using renewable natural gas can be considered to be within the scope of the 2018 Cap-and-Trade Rulemaking.

The relevant legal provisions governing the scoping requirements for California agency rulemakings are set forth in Cal. Govt. Code Sec. 11346.8(c), which provides:

(c) No state agency may adopt, amend, or repeal a regulation which has been changed from that which was originally made available to the public pursuant to Section 11346.5, unless the change is (1) nonsubstantial or solely grammatical in nature, or (2) *sufficiently related to the original text that the public was adequately*

⁴²⁹ See 2014 FSOR at p. 195, available at: <https://www.arb.ca.gov/regact/2013/capandtrade13/ctfsor.pdf>

placed on notice that the change could result from the originally proposed regulatory action. If a sufficiently related change is made, the full text of the resulting adoption, amendment, or repeal, with the change clearly indicated, shall be made available to the public for at least 15 days before the agency adopts, amends, or repeals the resulting regulation. Any written comments received regarding the change must be responded to in the final statement of reasons required by Section 11346.9. (emphasis added)

The term sufficiently related was defined by OAL in regulation to mean:

Changes to the original text of a regulation shall be deemed to be “sufficiently related,” as that term is used in Government Code Section 11346.8, if a *reasonable member of the directly affected public could have determined from the notice that these changes to the regulation could have resulted.* (See 1 Cal. ADC Sec. 42, emphasis added)

Bloom’s proposal for a calculation that mirrors the but-for-CHP exemption is “sufficiently related” to the scope of the present Cap-and-Trade Rulemaking. These changes to the regulation could have resulted based on at least three separate reasons, each of which justify its inclusion in the 15 day language:

1. The ISOR includes numerous changes to Section 95852 – “emissions categories used to calculate compliance obligations.” This is the section of the Regulation where Bloom’s proposal from the pre-rulemaking docket could be included. To a member of the public, it is clear that the rulemaking has a broad scope and there are numerous changes to the various emissions categories that lead to compliance obligations. The ISOR includes changes to the exemption language, including new provisions for waste-to-energy facilities and CHP. While fuel cells are not explicitly listed in the ISOR changes, a member of the public could reasonably anticipate that fuel cells or other technologies could result given the broad nature of the rulemaking and the specific inclusion of new exemption language for other technologies.
2. The ISOR explicitly contemplates changes to encourage biomass derived fuels and better align the program with the LCFS. By providing a transition to RNG use in fuel cells, Bloom’s fuel cell language shares the same policy goals and is sufficiently related to the changes the ARB is making related to how biofuels are covered in the Cap-and-Trade.
3. The ISOR makes explicit reference to the pre-rulemaking workshops, notes that public comments were received, and goes on to include links in the ISOR to the pre-rulemaking record. The ISOR explicitly references the June 21st workshop where Bloom made its proposal. By explicitly referencing the pre-rulemaking record, a member of the public could reasonably anticipate that comments and proposals made in the pre-rulemaking record could become the subject of a 15 day notice.

Conclusion

We urge you to recognize that imposing direct cap-and-trade compliance obligations on fuel cells can actually lead to increased emissions as customers choose dirtier or less efficient electricity generating technologies that do not prompt a direct cap-and-trade compliance obligation...

Attachment B

Limited Exemption of Emissions from the Production of Qualified Fuel Cell Output. Emissions from the production of electrical output from a fuel cell installation shall not have a compliance obligation and shall not count toward the inclusion threshold of section 95812(c)(1) if the requirements of this subsection are satisfied.

A facility with a fuel cell unit may apply for a limited emissions exemption if it meets the following condition for the applicable emissions year, and will remain eligible until the year in which the condition is not met, based on annual emissions data reported pursuant to Section 95100 *et seq.*, of the Mandatory Reporting Regulation: The Limited Exemption from the Production of Qualified Fuel Cell Output will apply when the facility's adjusted emissions ($GHG_{FC\ Adjusted}$) using the following formula is less than 25,000 metric tons of CO₂e:

$$GHG_{FC\ Adjusted} = H_{FC} - GHG_D$$

Where:

" GHG_{FC} " is the annual amount of covered emissions for each calendar year, in metric tons of CO₂e, associated with the production of electric output by a fuel cell installation.

" GHG_D " is the difference between annual covered emissions for each calendar year, in metric tons of CO₂e, associated with the production of electric output by a fuel cell installation and the production of electric output by an alternative natural gas power plant;

Where:

$$GHG_D = GHG_{Alt} - GHG_{FC}$$

" GHG_{Alt} " is the annual amount of emissions for each calendar year, in metric tons of CO₂e, associated with the production of electric output by a hypothetical natural gas power plant, which is calculated as follows:

$$GHG_{Alt} = Output_{FC} \times HR_{Alt} \times CO_{2eNG}$$

Where:

" $Output_{FC}$ " is equal to the annual electric output of a fuel cell installation;

" HR_{Alt} " is the CEC thermal efficiency report "State Average without Cogeneration" heat rate value, which is updated annually. For 2018, the State Average without Cogeneration heat rate value is 7,761 btu/kWh;

“CO₂e_{NG}” is the GHG emissions content per unit of natural gas of 117 lbs/mmbtu

(BLOOM)

Comment:

I want to speak to an issue that was raised in the staff proposal -- or the staff presentation related to the treatment of fuel cells and the potential for a follow-on rulemaking that we understand would be noticed sometime in 2019 to more clearly address fuel cells, and the environmental benefits that are provided by fuel cells. Fuel cells -- Bloom is a developer of fuel cell systems.

And what's important about these systems is they not only provide reliable on-site sources of electricity, but they don't emit any criteria pollutants by virtue of not involving any combustion. The -- in the longer term, Bloom is very focused on developing fuel cells that can run on renewable natural gas.

And at the recent global climate action summit, we worked with Bay Area Air Quality Management District to provide a demonstration project of a cleaning module that can be installed on a conventional Bloom energy server to basically run it on renewable natural gas. And that's part of the longer term vision that the company has, consistent with the goals of SB 1383, and as well as AB 2 197, and AB 32, and SB 32. What's happening right now in the program is that there are some instances where fuel cell systems are included under the Cap-and-Trade Program as a directly regulated entity when fuel cells run on conventional natural gas. And the issue that that creates is that it poses a choice for the customer to basically install the fuel cell and become a regulated entity, and may basically create a disincentive from reducing emissions on site, for example, from diesel generators that may not be included as part of the cap-and-trade threshold, or what may keep them below the cap-and-trade threshold. So what we're looking for is really a signal that we'll provide a transition in the longer term to convert conventional fuel cells to running on renewable natural gas. (BLOOM2)

Response: The commenter requests a limited exemption from the Program for emissions associated with the production of electricity by natural gas-powered fuel cells. CARB evaluated the commenter's proposal, including the assertion that it falls within the scope of the existing rulemaking. The comment is out of scope of the current rulemaking because (1) the provisions regarding emissions without a compliance obligation in section 95852.2 of the Regulation were not amended as part of this rulemaking and (2) only minor changes were proposed to existing exemptions in the Cap-and-Trade Regulation and those exemptions do not pertain to fuel cells. Consistent with CARB's general approach to include fossil fuel emissions in the Program when possible, natural gas-powered fuel cells were brought under the Program cap by amendments the Board adopted in July 2017.

California's 2017 Climate Change Scoping Plan Update discusses the potential further deployment of fuel cells that use renewable fuels or are less carbon intensive than the electrical grid. In a future rulemaking, CARB will evaluate and propose any necessary transition assistance for fuel cells connected to existing natural gas infrastructure where there are demonstrated local air quality benefits. This transition assistance would recognize natural gas fuel cells that provide immediate reductions in GHG emissions and other criteria pollutants by displacing higher carbon intensity energy supplies and also acknowledge the pathway provided by fuel cells for the development of renewable natural gas.

E. ELECTRICITY

E-1. Energy Imbalance Market (EIM) Imported Electricity

Support for 45-Day EIM Purchaser Approach

E-1.1. Comment:

III. GHG accounting for the Energy Imbalance Market (EIM)

LADWP generally supports the proposed Energy Imbalance Market (EIM) Purchaser approach, while concurrently encouraging CARB to continue to work with the California Independent System Operator (CAISO) on enhancements in the EIM market design to directly account for the full and actual GHG emissions from resources supporting California load. LADWP understands that the EIM Purchaser approach "reduces secondary dispatches, but does not eliminate them." LADWP encourages CARB staff to consider potential cost and risk impacts associated with the EIM outstanding emissions accounting approach, and supports minimizing these impacts. In particular, CARB staff should consider the Cap-and-Trade compliance schedule and the timing necessary to allocate, purchase, and/or surrender compliance instruments, and the associated financial risk of unforeseen compliance obligations. (LADWP)

Comment:

Energy Imbalance Market

EDF is pleased with the overall direction CARB has taken in the ISOR when it comes to the reforms under consideration. On balance, we remain supportive of these initiatives. The EIM is a key strategy for California to ensure that excess renewable generation is not curtailed. Since energy generation does not always match energy demand, the EIM creates a market-based mechanism for the export (and import) of these clean energy assets. Generators (those who would use EIM to export) and Load Serving entities (those who would use EIM to purchase and import) electricity need clear market rules and regulatory certainty to maximize the benefits to the state.

At present, the EIM handles a very small amount of real time energy transactions. The rules, as proposed in the ISOR, appropriately reflect the relatively small nature of the EIM. However, the California Independent System Operator (CAISO) is considering

expansion of the EIM from a spot market to day-ahead resources. As discussed on page 72 of the ISOR, the proposals are limited to the current market design and do not contemplate EIM expansion to the day ahead market. EDF encourages CARB to anticipate this expansion where possible in the current regulation and below we suggest certain clarifications and refinements that we believe would be helpful now...

Terminology of Electric Distribution Utility and Load Serving Entity

The ISOR uses the purchaser as the point of compliance. With the rise of Community Choice Aggregation and the recent raising of the cap on Direct Access, California is poised to have a significant percentage of the transactions in the EIM be these non-utility entities. If the Board wants the purchasers of power in the EIM to be the point of compliance, however, then certain clarifications would be beneficial. EDF suggests that clarifying the role of allocation of allowances to non-utility actors, such as the Community Choice Aggregators, needs to be harmonized. EDF suggests that the ISOR utilize the language of “load serving entity” and “electric service provider” consistent with the definitions in Public Utilities Code Section §394. EDF seeks this clarification to ensure that all participating ratepayers receive the benefits of allowance allocation and that market rules are not unfairly tilted from one entity or another. The Electric Distribution Utilities should not be used interchangeably with the load serving entities and electric service providers, and clarifying what is the responsibility of the grid operator vs. the purchaser of the electricity for the EIM would be beneficial. (EDF)

Response: Thank you for the support. CARB made changes in the 15-day package to the definition of EIM Purchaser to address concerns regarding the types of entities covered under the original EIM Purchaser proposal from the 45-day revisions, and concerns related to compliance and potential market impacts of EIM Purchaser requirements. See Response to 45-Day Comments E-1.5 on the revised definition of EIM Purchasers and Response to 45-Day Comments E-1.2 addressing concerns with the EIM Purchaser requirements.

Concerns with 45-Day EIM Purchaser Approach

E-1.2. Comment:

Despite the intention of CAISO and stakeholders to continue to find a long-term solution to the GHG accounting problem, CARB staff now intend to eliminate the ‘bridge solution’ whereby allowances that are unsold from auction are retired to address EIM outstanding emissions and replace it with the so-called “EIM Purchaser” approach. As WPTF understand this EIM Purchaser approach, CAISO and CARB would continue to quantify emissions associated with secondary dispatch, but rather than retire allowances to account for these emissions, CARB would administratively assign a carbon obligation to California entities that purchase power from the EIM. The quantity of the compliance obligation for each EIM purchaser would be calculated by summing for each 5-minute interval the quantity derived by dividing each of the entity’s negative deviation (i.e. the

day-ahead scheduled load minus real-time metered load) by deviations of all California entities and multiplying the resulting by outstanding EIM emissions in that interval...

WPTF strongly opposes the EIM purchaser proposal for several reasons. First, the EIM purchaser approach would provide no substantive benefit over the bridge solution in terms of GHG accounting accuracy or the carbon price signal, as both approaches would result in the same quantity of allowances being removed from the market, and neither approach addresses actual deficiencies in the EIM design... [commenter's second reason is included and addressed in 45-Day Comment E-1.4]

Third, the approach completely violates the underlying philosophy of carbon pricing – that entities can reduce their compliance obligations by altering their GHG emitting activities in response to the carbon price signal. Under the EIM purchaser approach, California entities that participate in the real-time market would potentially be subject to additional carbon obligations due to market conditions and factors over which they have absolutely no control. Because both the quantity of negative deviation and the quantity of outstanding emissions in any interval will often be a consequence of external factors and EIM dispatch, entities participating in the real-time market will not be able to predict and hedge against any additional compliance obligation. This is patently unfair...

Given the clear costs and lack of benefits of moving to the EIM purchaser approach, WPTF urges CARB to rescind the proposal. (WPTF)

Comment:

VI. GHG Accounting for the Energy Imbalance Market (EIM)

PG&E continues to support efforts to accurately account for GHG emissions that are caused by imports into California scheduled in EIM. We recognize that this is a complex problem which must balance several factors. As part of seeking this balance, PG&E provides the following comments.

As PG&E understands the Draft Regulation (as released on September 4, 2018), the California Independent System Operator (CAISO)'s EIM would take into account the GHG allowance costs for resource-specific emissions that result from deemed imports ascribed to resources by EIM in the dispatch and pricing of the energy market. After the EIM runs, ARB would calculate the total emissions resulting from imports in each 5-minute interval using the unspecified emission rate.

The responsibility to procure GHG allowances for outstanding emissions (the difference between the total emissions calculated for imports in a five-minute interval and the resource specific emissions for deemed imports in the five-minute interval accounted for in the EIM) would be assigned to California EIM Purchasers pro-rata based on their five-minute purchases from EIM.

PG&E has two concerns with this proposal:

1. The allowances to cover outstanding emissions will be assigned to California EIM Purchasers after EIM has run. As such, the cost of the allowances for outstanding emissions that will be borne by California EIM Purchasers cannot be taken into account in the EIM dispatch. The EIM Purchasers are exposed to costs which they will be unable to manage. This can make participation in EIM more risky.

2. The CAISO will collect revenue sufficient to pay for allowances to cover emissions from deemed imports at the marginal GHG cost. This revenue will be paid to resources that EIM selected to supply the energy that is deemed imported. For resources dispatched to provide deemed imported energy that do not produce emissions or produce less than the marginal emissions, this revenue will exceed the cost of the allowances that the resource will be required to surrender to cover resource-specific emissions resulting from the deemed imports. Only after EIM has run will ARB calculate the total emissions it ascribes to imports and require the California EIM Purchasers to surrender allowances for the outstanding emissions. As a consequence, the combination of the EIM treatment of allowances for deemed imports and ARB's treatment of allowances for outstanding emissions may over-collect the cost of allowances required for the total emissions from imports.

These two effects can make participation in CAISO's Real-Time market more risky for California participants, leading them to try to reduce their purchases in EIM. This could reduce the economic efficiency of the EIM dispatch and mute the EIM price signals. (PG&E)

Comment:

I. Energy Imbalance Market Comments

PacifiCorp continues to have significant legal and practical concerns with California Air Resources Board (ARB) regulation of secondary dispatch emissions, which result from activity entirely outside of California and with only a causal link to California load. While these concerns have not changed, they are not restated here and rather PacifiCorp's focus is on the proposal to impose a compliance obligation on California entities to account for secondary dispatch emissions in the EIM. There are three primary concerns with the ARB's proposal: 1) it unfairly imposes an overstated compliance obligation on California entities for the activity completely outside of their control; 2) it presents a one-sided picture of the emissions impact of the EIM; and 3) it further exacerbates the discrepancy between the treatment of secondary dispatch emissions in the EIM and the bilateral market. Each of these issues is addressed in turn below.

a. At Minimum, ARB Should Wait to Impose a Compliance Obligation on EIM Purchasers Until the Impact of Changes to the California Independent System Operator (CAISO) Resource Attribution Can Be Assessed

The quantity of secondary emissions occurring in the EIM during any five-minute interval depends on the resource attribution method employed by the CAISO to identify the resources that are imported into the CAISO balancing authority area as well as the combined effect of resource needs and market behavior of all EIM Entities. While EIM Entities establish and schedule their resources, they do not have control over the ultimate dispatch nor do they control the resources that are deemed delivered to California by the CAISO. EIM Purchasers, as proposed to be defined by the ARB, do not have the ability to influence the scheduling and resource needs of EIM Entities. A policy that imposes an obligation on entities for behavior and activities that are happening wholly outside of California and over which they have no control is unfair and punitive. In particular in light of the CAISO's efforts to reduce the quantity of secondary dispatch emissions in the EIM, the imposition of an incremental compliance obligation on specific California entities in this context simply amounts to a penalty...

c. ARB's Proposal Further Exacerbates the Different Treatment Between the EIM and the Bilateral Wholesale Energy Market

Secondary dispatch emissions is not a phenomenon isolated to the EIM. Any specified sale of zero-emitting energy made to a counterparty in California may have cascading effects on energy transaction and load-service decisions made across the West. California's policy preference for zero-emitting resources creates an economic incentive to sell zero-emitting energy to California and to sell emitting energy elsewhere or use it for load-service outside of California. Similar to the EIM, entities in California most likely have little or no insight into the manner in which entities selling non-emitting specified resource energy serve their load or otherwise sell their emitting energy. Similar to the EIM, PacifiCorp would argue that the ARB's jurisdictional reach does not extend beyond its borders to decisions made entirely outside of California. Rather than representing a unique phenomenon, the EIM merely provides more transparency and a market operator able to calculate a secondary dispatch emissions quantity. This differential treatment could disincentivize EIM participation, which as discussed above has been instrumental in reducing overall emissions across PacifiCorp's system. PacifiCorp recommends that the ARB align treatment for the EIM and the bilateral wholesale market. (PACIFICORP)

Comment:

ARB is proposing to eliminate the "bridge solution" (where unsold allowances would be retired), and replace it with the "EIM Purchaser" approach. This approach is discriminatory as it subjects California entities that participate in the real time market to carbon obligations not directly associated with their transactions (and over which they have no control.) The EIM Purchaser approach is contrary to ARB's policies that are intended to allow entities to reduce their obligations by responding to a price signal. Shell Energy urges ARB to reject this proposal. (SHELL)

Comment:

Under ARB's current cap and trade and mandatory greenhouse gas reporting regulations, ARB treats EIM transfers serving ISO demand in California as electricity imports. ARB relies on the ISO's market results as reported by EIM participating resource scheduling coordinators to identify resources that support those transfers and applies a specified source emission rate to those imports. ARB imposes reporting and compliance obligations on EIM participating resource scheduling coordinators representing these resources.

In response to stakeholder concerns that the ISO's least cost dispatch in the EIM may result in secondary or backfill dispatch⁴³⁰ when EIM transfers serve California demand, ARB adopted regulatory changes to account for emissions associated with the potential for secondary dispatch. These changes established an interim "bridge" to account for what ARB identifies as EIM outstanding emissions. To account for EIM outstanding emissions, ARB currently calculates the difference between total EIM transfers at ARB's unspecified source emission rate less the total resource-specific emissions attributed to EIM participating resource scheduling coordinators as a result of the ISO market optimization. ARB retires allowances designated by ARB for auction that remain unsold in ARB's Auction Holding Account for more than 24 months in the amount of EIM outstanding emissions.

II. ARB should maintain its current "bridge" approach for the 2019 cap and trade compliance year.

ARB has proposed to amend its regulations to recognize an EIM Purchaser as the compliance entity for EIM outstanding emissions. Under the proposed amendments, an EIM Purchaser would be defined as "an entity that purchases electricity through the EIM either to serve California load or to deliver or sell the purchased electricity to an entity, or on behalf of an entity, serving California load."⁴³¹

According to ARB's initial statements of reasons, this entity could include scheduling coordinators for load serving entities or generators within the California ISO or another California balancing authority area participating in the EIM.⁴³² ARB has proposed to

⁴³⁰ The phenomenon known as secondary dispatch occurs because least cost dispatch has the effect of attributing EIM transfers to lower emitting participating resources based on their combined energy bid and greenhouse gas (GHG) bid adder. Other, potentially higher-emitting, resources may need to backfill this energy attribution in order to serve load outside of the ISO.

⁴³¹ ARB's *Staff Report: Initial Statement of Reasons*, supporting proposed amendments to the cap and on GHG emission, Appendix A – proposed regulation order at p. 4, available at <https://www.arb.ca.gov/regact/2018/capandtrade18/ct18pro.pdf>, and ARB's *Proposed Regulation Order* to the proposed amendments to the mandatory reporting regulation at p. 1, available at <https://www.arb.ca.gov/regact/2018/ghg2018/proregorder.pdf>.

⁴³² ARB's *Staff Report: Initial Statement of Reasons*, supporting the proposed amendments to the cap on GHG emissions at pp. 69-73, available at <https://www.arb.ca.gov/regact/2018/capandtrade18/ct18pro.pdf>; see also ARB's *Staff Report: Initial Statement of Reasons*, supporting the proposed amendments to the mandatory reporting regulation at pp. 6-8, available at <https://www.arb.ca.gov/regact/2018/ghg2018/isor.pdf>.

calculate the obligation as an EIM Purchaser's share of EIM outstanding emissions. ARB's proposed amendments to the mandatory reporting regulation state:

[E]ach EIM Purchaser must calculate, report, and cause to be verified, energy consumption, expressed in MWs, resolved by imbalance energy procured in the CAISO market used to serve California load, or to deliver or sell the purchased electricity to an entity, or on behalf of an entity, serving California load.

ARB proposes that this calculation occur for every 5-minute real-time dispatch interval based on imbalance energy procured in the ISO market. ARB states that it intends to coordinate with the ISO and EIM Purchasers to design a reporting workbook based on the proposed regulatory requirements that can be easily utilized to report the data required by EIM Purchasers. Starting in 2020, entities would report 2019 data from April 1, 2019 through December 31, 2019, and receive a compliance obligation for 2020, and annually thereafter.

The proposed amendments to ARB's cap and trade and mandatory reporting regulations would (1) create a complicated accounting and compliance regime that may not accurately reflect the cause of any emissions from the potential for secondary dispatch; (2) extend compliance requirements to new entities that may not have a means to recover the costs of compliance and that are not a direct source of emissions; (3) may cause adverse electricity market outcomes; and (4) would over-count secondary dispatch volumes and over-state EIM outstanding emissions...

A. The proposed amendment would create a complicated accounting and compliance regime that may not accurately reflect the cause of any emissions from the potential for secondary dispatch.

EIM transfers to serve California demand can occur for a number of reasons: e.g., economic displacement of a more expensive resource within the ISO, a change in the demand forecast, or congestion of the transmission system. The proposed amendments would attempt to correlate 5-minute transfers that occur through the EIM to serve California demand to scheduling coordinators representing load serving entities and resources that have real-time imbalances. This proposal will require covered entities to gather and ARB to validate a voluminous amount of data for reporting and compliance purposes. The amendments do not recognize that an imbalance from a day-ahead position can occur for a variety of reasons and there is no way to allocate with precision whether an EIM transfer that served California demand addressed that imbalance or whether another resource addressed that imbalance...

C. The proposed amendments could create adverse electricity market outcomes relating to resources response to dispatch instructions and submissions of day ahead schedules.

In establishing a compliance obligation tied to imbalances, ARB may create an incentive for resources to deviate from dispatch instructions. A resource that has a negative

deviation from its day-ahead schedule will face a charge for imbalance energy in the ISO's market, even if that deviation results from an ISO instruction. However, if a resource also faces the risk of a compliance obligation under ARB's regulations, it may not respond to an economic dispatch instruction to reduce its output relative to its day-ahead position. ARB should not create such an incentive through its regulations... (CAISO)

Response: Commenters have expressed concerns related to the 45-Day proposal. In addressing these concerns, it helps to recall the development of the EIM-related provisions in the Cap-and-Trade and MRR Regulations. In 2014, the California Independent System Operator (CAISO) implemented an Energy Imbalance Market (EIM), which allows out-of-state entities to participate in trading of "imbalance" energy in CAISO's real-time energy markets. When importing out-of-state electricity to serve California load, the EIM market identifies, or "deems," electricity from certain out-of-state sources as dispatched to serve California load in part on the basis of the deemed sources' GHG emissions intensity.

Under AB 32, CARB must account for statewide GHG emissions, including all emissions resulting from the generation of electricity delivered to and consumed in California, whether that electricity is generated in-state or imported to California to serve California load and minimize emissions leakage. In 2015, CARB found that the design of EIM does not account for the full GHG emissions experienced by the atmosphere from imported electricity under EIM and results in emissions leakage. Beginning in 2016, CAISO and CARB began coordinating to address GHG accounting inaccuracies in the EIM.

In a rulemaking initiated in 2016 (2016 rulemaking), CARB initially proposed to address this issue by assigning a compliance obligation to entities purchasing EIM electricity ("EIM Purchaser") to serve California. CAISO then developed a proposal (called the Two-Pass Solution) designed to address the GHG accounting issues within the EIM algorithm. This proposal was intended to more accurately capture incremental behavior, and emissions, from power plants importing power to California in response to changes in California load through the EIM market. CARB staff supported the further development of CAISO's two-pass market optimization approach as a mechanism, through reasonable changes to the CAISO algorithm, to provide a rigorous accounting framework for EIM and efficient and timely optimization.

As part of implementing the 2016 rulemaking, which took effect in 2017, CARB implemented a "bridge solution" to account for the full GHG emissions experienced by the atmosphere from imported electricity under EIM. CARB refers to these emissions as EIM Outstanding Emissions. The "bridge solution" was a temporary solution developed in anticipation of CAISO implementing its Two-Pass Solution at a later date. Under the "bridge solution," CARB currently

retires allowances that have remained unsold at auction for greater than 24 months in proportion to EIM Outstanding Emissions.

In late 2017, CAISO conducted testing of the existing EIM and Two-Pass Solution. The testing showed the Two-Pass Solution more fully captured the GHG emissions resulting from electricity serving California load. However, stakeholders in the CAISO public process identified potential issues with the Two-Pass Solution. Based on stakeholder feedback, CAISO decided not to implement the Two-Pass Solution.

In early 2018, CAISO released a new proposal that would limit the amount of electricity available to support EIM imports to California by constraining individual resource bids to amounts above the base schedule. CAISO implemented its new proposal in late 2018, once Federal Energy Regulatory Commission (FERC) approval was received.

CAISO's new mechanism to limit bids is expected to improve the accuracy of GHG emissions accounting, but within any given five-minute interval the EIM model could still be attributing lower emitting resources to serve California load without accurately capturing the emissions resulting from the imported electricity. When the EIM model determines which out-of-state resources are deemed delivered to California in a particular interval, it will always minimize costs by attributing delivery to the cleanest participating resources that elected to be deemed delivered to serve California load. The cleanest resources are deemed delivered regardless of whether the emissions associated with those specific resources are the only emissions used to satisfy the EIM energy transfer to California. Given the inherent design of the EIM model, the system, even with CAISO's mechanism to limit bids, would not address all of staff's EIM GHG accounting concerns.

CARB supports CAISO's mechanism to limit the bid quantity in the EIM and must ensure that our climate programs are accounting for all GHG emissions from electricity serving California load. The MRR calculates EIM Outstanding Emissions as the additional emissions of resources not deemed to California and not currently accounted for in the EIM, but which are serving California load, as further discussed in Response to 45-Day Comment E-1.6. The fact that costs related to these resources are not being captured in the EIM algorithm is evidence of EIM emissions leakage that CARB is addressing with the implementation of the EIM Purchaser provisions of the recently approved Cap-and-Trade and MRR Regulations.

CARB proposed the 45-Day revisions to better account for EIM emissions leakage and to shift the responsibility for addressing this leakage from the State under the temporary bridge solution, to the entities in the electricity sector. To address the commenters' concerns with the 45-Day proposal, staff made 15-Day

changes to provide a simpler and more implementable way to quantify and compensate for EIM emissions leakage than in the 45-Day proposal. The 45-Day proposal would have potentially included in-State generators with negative imbalances as covered entities, in some cases causing entities to be newly covered by the Program. Commenters expressed concern about how such entities would understand and manage their potential obligation and about how the proposed 45-Day compliance obligation could create adverse changes to scheduling and bidding behavior in CAISO's markets. See Response to 45-Day Comments E-1.5 for a further discussion of how the adopted amendments address these commenters' concerns.

The final amendments as adopted by the Board in December 2018 exclude in-State generators and limit EIM Purchasers to electrical distribution utilities (EDU) who purchase electricity from EIM and receive freely allocated allowances. This approach only includes entities already in the Program, specifically the EDUs that participate in CAISO. It is only these entities that will be responsible for addressing EIM emissions leakage.

Utilities primarily focused on two concerns in their 45-Day comments: how to anticipate the size of compliance obligations generated through participation in the EIM and how to then manage that obligation, including how to collect sufficient revenues to acquire and meet the proposed Cap-and-Trade compliance obligation. Both of these concerns are addressed in the 15-Day changes to the Regulation, as EIM Purchaser Emissions would now be addressed through direct retirement of allowances that are freely allocated to EIM Purchasers instead of requiring entities to acquire allowances based on an after-the-fact compliance obligation. The retirement of freely allocated allowances removes the requirement for EIM Purchasers to actively address EIM emissions leakage through a direct compliance obligation.

Some commenters question how CARB is addressing the growing number of community choice aggregators (CCAs) with this approach. CARB has structured the EIM Purchaser requirements to ensure it captures all California customers who benefit from the EIM, including those served by CCAs and electric service providers (ESPs). EIM Purchasers that are investor-owned utilities (IOUs) will be responsible for the share of EIM Outstanding Emissions based on their retail sales and the retail sales of CCAs and ESPs in the IOUs' distribution service territory.

As noted in Response to 45-Day Comments E-1.5, the EIM Purchaser requirements have been modified to limit EIM Purchasers to electrical distribution utilities and to directly retire allocated allowances in the amount of EIM Purchaser Emissions. See Response to 45-Day Comments E-1.3 for further discussion on how the EDU allocation methodology estimates emissions based on utility specific data, including the energy needs of ratepayers served by CCAs and

ESPs, and allocates allowances to address the cost burden of compliance with the Program to ratepayers, accordingly.

Some commenters express concern that the EIM algorithm overcompensates external Participating Resource Scheduling Coordinators (PRSCs) for deemed GHG costs and over collects revenue from in-state EIM Purchasers. As CARB understands the concern, these commenters are stating that CAISO should modify the EIM tariff so that out-of-state PRSCs deemed resources are limited to strict cost recovery for their GHG bids. This modification is outside the scope of this rulemaking and more appropriately addressed through the CAISO stakeholder process. CARB encourages stakeholders to work with CAISO to address the issue.

Some commenters suggest there is the potential for other emissions leakage related to electricity imports. The Regulation includes specific prohibitions related to resource shuffling, and CARB continues to monitor and address emissions leakage as needed and required by AB 32 to ensure the overall environmental integrity of the Program.

Commenters express concern that the EIM Purchaser requirements do not impact the carbon price signal in the EIM. CARB notes that AB 32 requires CARB to minimize emissions leakage, as well as to accurately account for emissions associated with electricity serving California load. The adopted amendments allow CARB to fully account for GHG emissions resulting from electricity generated to serve California load in the EIM. CARB will continue to work with CAISO as it assesses how the EIM market design could be enhanced to improve the carbon price signal and directly account for the full GHG emissions at the time of dispatch when determining which resources support California load. Should such EIM market improvements be implemented, the EIM Purchaser requirements would no longer be necessary.

Some commenters express concern regarding the regulatory purpose and authority of CARB with regards to greenhouse gas emissions and imported power. In particular, one commenter asserts that CARB's jurisdictional reach does not extend beyond its borders to decisions made outside of California. However, in this case, CARB is regulating the conduct of electricity importers in California participating in the EIM. CARB is not regulating entities outside of its borders. Ultimately, CARB has the authority to regulate imported power and electricity importers and related emissions leakage as set forth in the MRR and the Cap-and-Trade Regulations pursuant to AB 32.

CARB also notes that, in addressing EIM emissions leakage, it is not attempting to infringe on an area where FERC holds exclusive jurisdiction. CARB also addressed this concern in the October 2011 FSOR, in Response to Second 15--Day Comment I-21.

See also Response to 45-Day Comments E-1.5 on the revised definition of EIM Purchaser and Response to 45-Day Comments E-1.6 addressing the potential for unintended market impacts through changes to the calculation of EIM Purchaser Emissions.

Timing of Compliance and Allocated Allowances

E-1.3. Comment:

We understand from conversations with staff that CARB is unable to maintain the bridge solution as currently implemented beyond February 2019 because the majority of allowances that remained in the Auction Holding Account have been moved to the Allowance Price Containment Reserve. Because of the CAISO's modification of the algorithm to restrict the output of an EIM participating resource that can be deemed delivered to the California, we expect that the quantity of EIM outstanding emissions – and thus the quantity of allowances that would need to be retired under the bridge solution – will be substantially lower next year. None-the-less, if there are not sufficient allowances available in the Auction Holding Account to cover EIM outstanding emissions, CARB should instead retire allowances allocated to electric distribution utilities. (WPTF)

Comment:

PG&E would encourage CAISO, ARB and stakeholders to continue considering ways to better account for outstanding emissions within the EIM dispatch and pricing. Since this has proven to be a difficult problem, PG&E appreciates ARB's desire to better account for the total GHG emissions effects arising from imports into California after EIM has run. To accomplish this in a timely fashion while reducing the possibility of disturbing the efficiency of the EIM, an approach based on retiring allowances after the fact based on outstanding emissions, rather than requiring EIM Purchasers to purchase allowances for a share of outstanding emissions, seems appropriate. In this vein, PG&E supports the position of the California electric utilities as expressed in the Joint-Utility Group (JUG) comments.

Allocating the reduction of allowances in the subsequent year as is currently done in the existing bridge solution may reduce the possibility of misdirected impacts and the concerns PG&E noted above. If ARB decides that these allowances should be retired from the allowance allocations of individual EIM Purchasers (assumed to be the EDUs), then PG&E recommends that each EIM purchaser's compliance obligation should be consistent with an entity's actual share of EIM purchases, rather than other approaches such as share of total retail sales. PG&E also recommends both the CAISO and the ARB work to provide a transparent methodology for how the total obligation will be measured and included in other transparent obligation data posted by the ARB. PG&E looks forward to continuing to work with ARB and other stakeholders on the details of how such an approach could work. (PG&E)

Comment:

If CARB continues down the path of assessing compliance obligations for individual EIM purchasers, we think that those compliance obligations should be consistent with an entity's annual EIM purchases, not their overall share of total retail sales among EIM participating utilities. And if a compliance obligation is assigned, a utility should have the option of electing whether they wish to retire compliance instruments to satisfy that obligation on their own, or if they would rather have CARB retire allowances on their behalf. This optionality is critical because investor-owned utilities and publicly-owned utilities have different regulatory guidelines for how they can retire compliance instruments. (JOINTELECUTILS)

Comment:

While it is out of the scope of this rulemaking, we believe CARB should also consider allocating additional allowances to EDUs to cover the costs of this newly-discovered compliance obligation, as well as updating the unspecified emissions factor. We believe both of those changes would lessen the impact of CARB's proposal on our customers – who alongside their utilities have no control over the emissions being debated here. (JOINTELECUTILS)

Comment:

SCPPA has reviewed the 45-Day language and discussed this issue [EIM accounting] with CARB staff, our members, and other utilities. We understand this is a complex issue and subject to change during a subsequent 15-Day comment period, but there are some fundamental components for which SCPPA recommends be a part of any final solution: ...

2. Enable future borrowing ability for compliance purposes;...

- Future borrowing would better enable EDUs to comply with, and account for, compliance in future years.

3. Provide POUs with control for retaining, designating, and retiring vintage allowances; and...

- Enabling control for publicly-owned utilities (who do not have an auction consignment obligation) to retain, designate, and retire vintages would enable EDUs to better make use of vintages ahead of higher compliance periods with fewer allowance allocations. (SCPPA)

Comment:

Compliance Obligations under the MRR

Pursuant to the proposed amendments to MRR Section 95111(h)(3), ARB will calculate each EIM Purchaser's "EIM Purchaser's Emissions" for the previous calendar year after

the verification deadline for that year. Under the proposed MRR Section 95111(h)(3)(1), each EIM Purchaser Emissions will be calculated based on:

(1) that EIM Purchaser's energy imbalances; (2) the sum of EIM Purchases for all EIM Purchasers; and (3) the total EIM Outstanding Emissions. In performing these calculations, the ARB will rely on information reported by EIM Participating Resource Scheduling Coordinators, EIM Purchasers, and the CAISO.

Under the current cap-and-trade program, the ARB determines cap-and-trade compliance obligations for an electricity generation facility based on the GHG emissions associated with that facility's generated energy. In calculating compliance obligations of an electricity importer or exporter, the ARB also relies on data about that specific entity's delivered or imported electricity. Because a covered entity's compliance obligations are currently based on the amount of GHG emissions associated with that entity's own operations, energy generators, importers and exporters can fairly accurately forecast their anticipated GHG emissions and timely acquire the necessary cap-and-trade compliance instruments. In contrast to the existing scheme, determination of an EIM Purchaser's Emissions (and accordingly associated compliance obligations) will be based not only on a covered entity's own GHG emissions data, but also on the market-wide emissions data that will not be determined by the ARB until long after the end of an emissions year. Accordingly, it will be infeasible for EIM Purchasers to forecast their compliance obligations for any future compliance year.

DWR's procurement strategy for cap-and-trade compliance instruments relies heavily on DWR's ability to (1) forecast DWR's covered operations, and (2) based on such forecasting, procure the required allowances in a timely and most cost-effective manner. DWR is concerned that the proposed mechanism and timeline for calculating EIM Purchaser's Emissions would make it infeasible for DWR to forecast its cap-and-trade compliance obligations for the coming emissions years and to procure sufficient compliance instruments from the current year's vintage.

DWR proposes that the ARB consider allowing EIM Purchasers to use future vintage allowances to comply with their compliance obligations associated with the EIM Purchaser's Emissions. DWR notes that this change would not eliminate DWR's concern about inability to accurately forecast its cap-and-trade compliance obligations. However, it would allow DWR to remedy its under-forecasting, at least to a certain extent, by procuring and surrendering compliance instruments from future vintages if DWR has insufficient allowances from the current or previous vintages. (DWR)

Response: In 15-Day changes, CARB addresses stakeholder concerns regarding the assessment of an after-the-fact compliance obligation and replaced the requirements proposed in the 45-Day proposal with the retirement of allowances in the amount of EIM Purchaser Emissions from the EIM Purchaser's annual allowance allocation. CARB believes the process of retiring allowances directly from each EIM Purchaser's future allowance allocation eases compliance

and is easier to implement. While CARB understands the commenters' desire for optionality in how EIM emissions leakage is addressed, given the timing of verification, allocation, and compliance deadlines, it is not feasible for CARB to establish multiple mechanisms for implementation to address EIM emissions leakage. As such, CARB is providing a uniform mechanism for how these allowances will be retired to ensure environmental integrity of the Program.

Some commenters request additional allocation of allowances for EIM emissions leakage. As the commenters noted, a change to the methodology for allocating allowances to EDUs is outside the scope of this rulemaking. EDUs are allocated allowances for the purpose of ratepayer benefit based on the estimated cost burden of compliance with the Cap-and-Trade Program. The allocation is calculated multiple years in advance based on estimated emissions anticipated from the sector, including utility-specific load and supply information. The calculation includes estimates of total potential emissions from each utility to serve its load, including utility specific emissions estimates related to imported electricity using the best available information at the time. For investor-owned utilities, this includes the load for ratepayers served by CCAs and ESPs. The estimated emissions for both in-State resources and imports are based on the information provided by each utility in the resource supply forms (Form S-2) filed with the California Energy Commission. The allocation methodology also incorporates estimates for residual purchases, those purchases needed in excess of the resources listed in Form S-2, to serve California load. All residual purchases are assumed to be met with natural gas or unspecified market purchases.⁴³³ By incorporating the electricity needed to serve load and utility-specific projections of the expected resources to serve that load and residual purchases, the EDU allocation captures the total potential cost burden of the Program on ratepayers. CARB believes this methodology also captures the cost burden of EIM emissions. The EIM attributes lower emitting resources to serve California load without fully capturing the emissions resulting from the imported electricity. By assuming residual purchases are at the natural gas emissions or unspecified emissions factor, the EDU allocation methodology conservatively reflects the full potential emissions of electricity imports in the EIM.

In the adopted amendments to MRR, the calculation of EIM Purchaser Emissions is based on a retail sales share. This change addresses the commenters' reporting, calculation, and market impacts concerns with the 45-Day proposal. See Response to 45-Day Comments E-1.6 on the revised calculation of EIM Purchaser Emissions. In addition, the Department of Water Resources, which is

⁴³³ See CARB 2011 Proposed 15-Day Modifications, Appendix A: Staff Proposal for Allocating Allowances to the Electric Sector, p. 4 and CARB 2016 Attachment C, First Notice Of Public Availability Of 15-Day Amendment Text, Proposed Amendments to the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation 2021–2030 Allowance Allocation to Electrical Distribution Utilities , p.10.

not an EDU, does not meet the definition of EIM Purchaser in the adopted amendments, and will not share responsibility for addressing EIM Outstanding Emissions the Program at this time.

Request to Retain Bridge Solution

E-1.4. Comment:

4. TID supports the current “bridge solution” to EIM GHG accounting.

TID supports the Joint Utility Group (JUG) letter laying out the specifics of Utility concerns with the “proposed” solution. TID, as a California Balancing Authority, and while not currently participating in the EIM, TID is evaluating the benefits of joining the EIM. TID is concerned that, in the middle of a potential decision to join, that unanticipated, unrecoverable costs could be put on TID ratepayers, diminishing the potential benefits of TID’s participation in the EIM. TID is also concerned that if it joins the EIM, it could be faced with a situation where it sees a considerable decline in its EDU allowance allocations that may lack a nexus to its actual participation in the EIM (for example, if the “outstanding emissions obligation” were assessed on a retail load share basis). The ARB should continue to work with the CAISO to develop a market-based solution and until further market refinements can be completed, the ARB should extend the existing “bridge solution” indefinitely. (TURLOCKID)

Comment:

The ISO does not support adoption of the proposed amendments. As an alternative, the ISO recommends ARB maintain its existing “bridge” mechanism for EIM outstanding emissions for the 2019 cap and trade compliance year. This approach will allow ARB and stakeholders to monitor planned enhancements to the EIM as well as develop a more accurate measure of the volume and emission intensity of EIM outstanding emissions...

II. ARB should maintain its current “bridge” approach for the 2019 cap and trade compliance year.

...

The ISO encourages ARB not to adopt the proposed amendments and instead continue to utilize its bridge solution. As ARB is aware, the ISO has proposed changes to its EIM design that will reduce the potential for secondary dispatch.⁴³⁴ The ISO is targeting an implementation date for these changes on November 1, 2018. In addition, other states are exploring GHG emission programs which could have the effect of reducing secondary dispatch of resources as a result of EIM transfers to serve California demand. ARB should maintain its current bridge through at least the 2019

⁴³⁴ See, ISO tariff amendment regarding Energy Imbalance Market Bid Adder in Federal Energy Regulatory Commission docket ER18-2341 dated August 29, 2018, available at <https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=15011459>.

reporting year to assess the magnitude of secondary dispatch emissions that may occur as a result of EIM transfers to serve California demand. ARB should use the information we learn from 2019 EIM operations to inform the any going forward regulation changes to account for EIM outstanding emissions.

III. ARB should work with the ISO and stakeholders to develop a more accurate measure of the volume and emission intensity of EIM outstanding emissions...

The ISO recommends that ARB not undertake a rulemaking to adopt changes to its bridge solution until stakeholders have a year of operation using the ISO's pending market enhancement for attributing to EIM participating resources EIM transfers serving California demand. This approach will allow time to assess the effects of the new design. ARB could then use such information to guide what, if any, regulatory changes are necessary to address any remaining secondary dispatch effects. This information could also help ARB develop a more accurate residual emission rate as it assesses whether to establish a new compliance requirement and to which entities it should apply. (CAISO)

Comment:

Second, while we recognize that the bridge solution was intended as an interim solution until such a time that a long-term algorithmic solution could be developed and implemented in the EIM, it is premature to move away from it now. The partial solution that the CAISO has developed will reduce the magnitude of EIM outstanding emissions, and the CAISO will continue to address the GHG accounting issues in a new stakeholder initiative next year. (WPTF)

Comment:

EIM Outstanding Emissions

While NCPA understands CARB's desire to address the emissions from the California Independent System Operator (CAISO) EIM that are deemed "EIM Outstanding Emissions," NCPA has concerns with the proposed amendments that would change the current structure for retiring allowances for this obligation. The issue is extremely technical and one that does not lend itself to an easy solution. Any changes to the current bridging solution should be designed in a way that sends a signal to stakeholders about the potential compliance obligation associated with the EIM, and an opportunity to modify behavior accordingly. Criticisms of the current structure are not addressed in the proposed alternative, as the entities to whom a compliance obligation would be assigned may not currently be compliance entities under the cap-and-trade program, and have no control over the extent to which they will be exposed to compliance obligations for EIM Outstanding Emissions. NCPA urges CARB to retain the bridging solution, and not make changes to the current structure until such time as CARB, working directly with CAISO and stakeholders, can design a compliance structure for EIM Outstanding Emissions that directly links the compliance obligation

with the responsibility for the emissions, and does so in a manner that sends the appropriate signal to the market and market participants.⁴³⁵ (NCPA)

Comment:

E. Energy Imbalance Market

SMUD continues to support use of CARB’s current “bridge solution” for dealing with potential “outstanding” (secondary dispatch) emissions in the Energy Imbalance Market (EIM). The bridge solution covers the identified outstanding emissions in the Energy Imbalance Market (EIM) by retiring allowances from the Cap and Trade market. The 45-Day language, in combination with CAISO’s revised tariff⁴³⁶ approach to reduce secondary dispatch, complicates EIM market participation, and raises the potential that our ratepayers may be overcharged for the obligation.

We continue to oppose asking California ratepayers to shoulder the costs of emissions beyond our state borders – and assigning compliance obligations for emissions that are not within the control participating California utilities. However, if CARB moves forward with a policy to preserve environmental integrity other than the bridge solution, there should be a simple and transparent method for assessing individual compliance obligations and utilities should have the option of electing whether they wish to retire compliance instruments to satisfy that obligation on their own, or if they would rather have CARB retire allowances on their behalf.

The 45-Day language proposal does not solve the “incentive” issue that concerns ARB staff with regard to the bridge solution – that retiring allowances generally does not incentivize reductions in the secondary dispatch problem. Rather, the “EIM Participant” option imposes additional rules and costs on EIM participants simply for being part of the market, not in any manner related to a choice to procure or not procure of GHG emitting resources. It is unclear to SMUD how EIM participants would be able to change their market practices to reduce their imposed obligation.

The option as stated in the 45-Day language and the MRR would create potential Cap and Trade obligations for entities that currently have none, and that are not consciously procuring power that has a GHG emissions signature. This option is likely to simply reduce participation in the EIM market, contrary to the State’s goals.

The current regulation retires allowances for the outstanding emissions identified from the unsold pool of allowances that is gradually being returned to the market slowly over time or transferred to the APCR after 24 months off the market per the Cap and Trade

⁴³⁵ CARB’s proposal to address leakage associated with the EIM should continue to be narrowly construed. In the event that leakage is identified which is not otherwise captured within the program’s current regulatory framework, is important that cap-and-trade program compliance entities with no control over emissions leakage or means to modify behavior to mitigate the leakage not be held responsible for such emissions leakage.

⁴³⁶ CAISO filed its EIM Tariff revisions in August 2018, which propose a new dispatch method for EIM that is aimed at reducing the quantity of secondary dispatch energy from generators outside CA.

regulations. The 45-Day language recognizes the limited supply from this source and changes the source of allowances to retire from the general budget rather than the pool of unsold allowances, but only through March of 2019. SMUD recommends extending the bridge solution retirement at least through the end of 2019. This will give stakeholders more time to understand the overcharging and market participation implications of the EIM purchaser proposal in the 45-Day language. SMUD's recommended language change is:

95911(h)(2): Starting in 2019, ARB will retire allowances from the allowance budget two years after the current allowance budget year that is not already allocated to entities pursuant to sections 95870(a) and 95871(a) in the amount of EIM Outstanding Emissions as defined in section 95111(h)(1) of MRR for data year 2018 and for ~~January 1 through March 31 of~~ data year 2019. Each year, ARB will retire these allowances no later than the surrender deadlines specified in section 95856(d) and (f).

The recommended changes to the regulations above are new and not in track changes, but in the text above that the changes are shown. My current understanding of the 45 day language is that ARB has already made the change recommended in the draft from last week, but only through March 2019. (SMUD)

Comment:

JUG Members support CARB's current approach to socializing the costs of Energy Imbalance Market (EIM) outstanding emissions, and has concerns about the 45-Day language. If CARB moves forward with this proposal, we call for a simple and transparent method for assessing individual compliance obligations and optionality in how a utility retires compliance instruments. The 45-Day proposal, in combination with CAISO's proposed methodology contained in their August 25, 2018 tariff filing at the Federal Energy Regulatory Commission, would complicate EIM market participation and present an obstacle for further EIM participation for entities within California. It's not just utilities saying that. Other EIM participants are increasingly expressing concerns. The issues identified by stakeholders include the concern that California EIM Purchasers would be exposed to costs they cannot manage since costs for allowances to cover outstanding emissions will be determined after the market runs. Additionally, the combination of CAISO's treatment of allowances in the EIM and ARB's proposed treatment of allowances for outstanding emissions may over-collect the costs for allowances to cover total emissions from imports. We support CARB's current method of accounting for EIM outstanding emissions by removing an equivalent number of allowances from the program-wide allowance budget, and still believe it is better for CARB to continue that approach, rather than asking California ratepayers of those entities that participate in the CAISO's Real Time and EIM to now shoulder the costs of emissions beyond our state borders. This misalignment of policy becomes particularly evident when it is recognized that those same California entities will have no control over the actions that may result in outstanding emissions. We

further believe that sufficient allowances remain unallocated from the overall budget to easily continue the current method.

Further, CARB should contrast any EIM outstanding emissions against the GHG benefits of California's renewable exports in the EIM. We think no matter what the solution, CARB should make it clear to the public that EIM produces significant environmental benefits – and those benefits to the atmosphere are just as real as the secondary emissions effect. We know CARB has suggested opposition to counting those environmental benefits, but JUG believes it is worth revisiting in this context. (JOINTELECUTILS)

Comment:

a. At Minimum, ARB Should Wait to Impose a Compliance Obligation on EIM Purchasers Until the Impact of Changes to the California Independent System Operator (CAISO) Resource Attribution Can Be Assessed

...

PacifiCorp recommends that the ARB maintain its current approach at least until it can evaluate the effect of changes made by the CAISO to reduce secondary dispatch emissions in the EIM...(PACIFICORP)

Comment:

8 . Energy Imbalance Market (EIM) Secondary Emissions

SDG&E supports the JUG position on secondary emissions in the California Independent System Operator (CASIO) EIM. The JUG calls for a simple and transparent method for assessing individual compliance obligations and optionality in how a utility retires its compliance instruments. This includes support for the continuation of CARB's current method for ensuring the environmental integrity with regard to EIM outstanding emissions, for contrasting any EIM outstanding emissions against the GHG benefits of California's renewable energy exports in the EIM, and for determining compliance obligations based on an entity's annual EIM purchases, not their overall share of total retail sales among EIM participating utilities. Though out of scope for this rulemaking, SDG&E also supports the JUG suggestion that CARB consider allocating additional allowances to electric utilities to cover the costs of this new EIM compliance obligation, as well as updating the unspecified emissions factor, to help lessen the impact on customers. (SDG&E)

Comment:

My other public power utility colleagues will also be talking about our preference that CARB extend the bridge solution for the CAISO Energy Imbalance Market for an additional year to gather additional information about it, before making changes on what is a very complicated issue that we are dealing with now. (SCPPA2)

Comment:

My comments are limited to one issue, and that is the issue of the outstanding emissions and allocating those obligations as a consequence of the operation of the Energy Imbalance Market. Let me begin with by noting upfront that this is an extremely difficult issue.

It occurs at the confluence of a complicated Cap-and-Trade Program, and perhaps even more complicated wholesale market operation and design. The market is not a closed system.

Actions happen outside the market that affect the market. Actions happen outside California that affect California. We can't control those.

And it's even more difficult -- it's very difficult to control them, and it's even difficult to account for them and allocate obligations accordingly. And so what we've done to date is to take the allowances associated with these outstanding emissions and retire them from the unsold pool of allowances.

And that seemed like a reasonable approach, given the complexity of the issue of the lack of data and the clear right answer going forward. And we'd urge the Board to consider continuing that so-called bridging solution for number of reasons. One, we don't have any data on how this is going to work. The ISO's new market methodology for accounting for these outstanding emissions hasn't been put in place yet.

And we won't -- even though the proposed effective date is April 1, we won't have a lot of data even by that metric. And the market and the market scope continues to change. There is no link to behavior.

No EIM entity within California that may see these costs is going to change its behavior.

And there's no link between their behavior in real-time and the attribution of these costs. So it's fundamental -- violates some fundamental tenets associated with just policy development. EIM reduces carbon emissions. The ISO studies have found that.

And more work outside by some of the EIM entities, show that the dispatch of their fleets, including their coal fleets, have been modified.

And that work continues.

And we should have an opportunity to continue to understand that data and how EIM reduces carbon emissions, and actually furthers the goals that the State is trying to achieve.

And finally, there's an element of no good deed goes unpunished here.

California entities have been -- that are outside the ISO have been encouraged to collaborate closely with the ISO. And to that end, the Balancing Authority of Northern

California and SMUD are set to actually go live with EIM implementation in April of next year. If they had not taken that step, they wouldn't see these costs.

Under the proposal, they will see those costs.

So there seems to be a little bit of -- we could do a little learning here.

And so we would encourage the Board to consider keeping the bridging solution moving forward. (CMUA)

Comment:

We also support the comments regarding maintaining the EIM bridging solution and thank staff very much for all of their efforts on this. (NCPA-MSR-GOLDENSTATEPOWER)

Response:

Commenters request CARB retain the existing "bridge solution" to account for EIM emissions leakage. CARB declines to make this change. The "bridge solution" was always intended to be a temporary solution until CAISO could implement a solution that would fully address emissions leakage in the algorithm directly. There is still emissions leakage that will occur even with CAISO's recent modifications and implementing the EIM Purchaser approach was needed to shift the responsibility for addressing EIM emissions leakage and ensure the environmental integrity of the Program from the State to the entities in the electricity sector. The 15-Day changes accomplish this by placing the responsibility for EIM emissions leakage on electrical distribution utilities that purchase electricity from the EIM and receive freely allocated allowances. See also Response to 45-Day Comments on allocated allowances in E-1.3 and Response to 45-Day Comments on the calculation of EIM Outstanding Emissions and EIM Purchaser Emissions E-1.6.

Definition of EIM Purchaser

E-1.5. Comment:

Compliance Obligations Resulting from Generators' Energy Imbalances under the Cap-and-Trade Regulation

The proposed amendments to Section 95811(b) of the Cap-and-Trade Regulation add a new category of "EIM Purchasers" to the list of covered entities. In Section 95802 of the Cap-and-Trade Regulation and Section 95102 of the MRR, the ARB proposes to define "EIM Purchaser" as "an entity that purchases electricity through the EIM either to serve California load or to deliver or sell the purchased electricity to an entity, or on behalf of an entity, serving California load." The ARB staff has provided the following clarification to this proposed definition: "Under the proposed definition of EIM Purchaser, scheduling coordinators for electricity generators located in California with negative imbalances

may also be considered EIM Purchasers, if they are serving those imbalances through imported electricity in EIM." (Notice of Public Hearing, at p. 17; Staff Report: Initial Statement of Reasons, at p. 72.) The ARB staff further explains that scheduling coordinators for California generation with imbalances_ "will receive a direct compliance obligation for EIM Purchaser emissions." (Staff Report: Initial Statement of Reasons, at p. 72.)

Under the Cap-and-Trade Regulation currently in effect, only GHG emitting generation is subject to the cap-and-trade compliance obligations. According to the ARB staff clarification regarding the new EIM Purchaser definition (as that clarification is understood by DWR), the proposed amendment purports to extend such compliance obligations to all California generators with negative imbalances, regardless of their GHG emitting (or non-emitting) status, so long as those imbalances are served through EIM imports. If DWR is correct in its interpretation of the proposed amendment's scope, then this amendment would amount to a major change to the existing cap-and-trade coverage format, as California generators of renewable and other carbon-free resources would now become covered entities subject to the cap-and-trade compliance requirements . DWR is concerned that this significant change is not apparent from the proposed regulatory text. As drafted, the "EIM Purchaser" definition in Section 95802(a) of the Cap-and-Trade Regulation and Section 95102 of the MRR covers entities that "purchase" electricity through the EIM for the purposes of serving load in California. Nothing in the proposed regulatory language appears to indicate that a California generator's negative imbalance would be considered "purchasing" through the EIM, and therefore would expose such a generator to a direct compliance obligation. If not for the ARB staff's clarification in the staff report, DWR would not have interpreted the proposed EIM Purchaser definition to encompass DWR's carbon-free hydropower generation or renewable resources that DWR acquires under its power purchase agreements.

As a generator and purchaser of energy in the CAISO markets, DWR needs to have a clear understanding of the impacts of the proposed regulatory amendments on DWR's operations and costs of such operations. If the ARB's intent is to extend the cap-and-trade compliance obligations to all California generators with negative imbalances, including generators of renewable and other carbon-free resources, then this intent should be clearly reflected in the proposed regulatory language, so that the regulated community receives a clear notice of this significant regulatory change. (DWR)

Comment:

B. The proposed amendments could extend compliance requirements to new entities that may not have a means to recover the costs of compliance and that are not a direct source of emissions.

If adopted, the proposed amendments could extend the application of ARB's cap and trade and mandatory reporting regulations to a number of new entities. Many of these

entities may not have been allocated allowances under ARB's cap and trade program and therefore may not have a mechanism to cover their costs of compliance. These entities could include scheduling coordinators only serving load (i.e. that are not currently first deliverers under ARB's regulation) and who do not currently receive allowances as utility distribution companies. These entities could also include scheduling coordinators representing distributed and non-emitting resources located in California that are already helping to reduce emissions in California's electricity sector. Entities such as renewable resource owners have likely not planned for the costs of complying with ARB's program through their power purchase agreements. This may result inequitable outcomes that are outside of these entities' control...

C. The proposed amendments could create adverse electricity market outcomes relating to resources response to dispatch instructions and submissions of day ahead schedules...

The proposed amendments could also discourage variable energy resources from submitting day-ahead schedules and real-time bids, thus exacerbating and complicating management of oversupply conditions. The proposed amendments would create an incentive for these resources to always have a positive deviation from a day-ahead schedule so as to avoid a compliance obligation as an EIM Purchaser. By not submitting day-ahead schedules or not submitting real-time bids, a variable energy resource would always avoid being an EIM Purchaser. This incentive directly conflicts with the need for the CAISO to have greater participation in the day-ahead market by variable energy resources. This participation helps ensure efficient unit commitment and price formation. (CAISO)

Comment:

SUMMARY

These comments focus on potential changes to the Energy Imbalance Market ("EIM") language in the Cap-and-Trade rules. AWEA California appreciates the ARB's efforts to address this challenging and complicated issue. During the pre-rulemaking phase of this proceeding, AWEA California expressed concerns with potential amendments that would have placed a Cap-and-Trade compliance obligation on scheduling coordinators of zero emitting resources.⁴³⁷ AWEA California greatly appreciates the ARB's receptiveness to its pre-rulemaking comments and supports the ARB's efforts to understand the technical implications of various methodologies for assessing and assigning the "outstanding emissions obligation" of "secondary dispatch". While AWEA California understands that the "EIM Purchaser" definition (i.e., as proposed on September 4) may be subject to further change, these comments express concerns with an unintended, "as-applied" aspect of the EIM Purchaser definition. As discussed below, AWEA California recommends revising the "EIM Purchaser" definition

⁴³⁷ See March 27, 2018 AWEA California comments, available at: <https://www.arb.ca.gov/lists/com-attach/40-ct-3-2-18-wkshp-ws-UWBcYIRIVjYCNQQy.pdf>

to avoid a scenario where a zero-emission resource operating in California could be assigned a portion of the “outstanding emissions obligation.”

DISCUSSION

AWEA California has actively participated in the California Independent System Operator’s (“CAISO”) stakeholder initiative to develop a long-term “secondary dispatch” solution to replace the current solution that the ARB scoped into the 2016-2017 Cap-and-Trade Rulemaking. Through CAISO EIM -GHG stakeholder initiative, the ISO has reviewed several potential long-term solutions to identify and address emissions associated with “secondary dispatch.” The CAISO has defined “secondary dispatch” to mean:

[A] concern that the EIM GHG design is not fully capturing the impact to the atmosphere that occurs in connection with EIM transfers to serve CAISO load. Briefly, this concern relates to CAISO dispatches of EIM participating resources to serve CAISO load based on minimizing total costs of energy and GHG bid adders. The CAISO’s least-cost dispatch can have the effect of attributing transfers to serve CAISO load to lower-emitting EIM participating resources because these resources face fewer or no costs to comply with ARB’s regulations. In some instances, higher-emitting resources will need “to backfill” this dispatch to serve EIM load outside of the CAISO. The CAISO refers to this phenomenon as secondary dispatch.⁴³⁸

In the September 4, 2018 Proposed Amendments, the ARB would remove the “bridge- solution” and replace it with an emissions obligation that would be assigned to “EIM Purchasers.” EIM Purchaser is defined in the Mandatory Reporting Regulation to mean: “an entity that purchases electricity through the EIM either to serve California load or to deliver or sell the purchased electricity to an entity, or on behalf of an entity, serving California load.”⁴³⁹ In the Initial Statement of Reasons for the Cap-and-Trade Regulation, the ARB acknowledges that “[u]nder the proposed definition of EIM Purchaser, scheduling coordinators for electricity generators located in California with negative imbalances may also be considered EIM Purchasers, if they are serving those imbalances through imported electricity in EIM.”⁴⁴⁰

AWEA California is concerned that the September 4, 2108 proposal for the “EIM Purchaser obligation” could inappropriately place the “outstanding GHG emissions obligation” of “secondary dispatch” in the EIM on clean generation resources, such as wind, solar and hydro, operating inside of California. If implemented, the current

⁴³⁸ See CAISO February 16, 2018 Second Revised Draft Final Proposal, available at: <http://www.caiso.com/Documents/SecondRevisedDraftFinalProposal-EnergyImbalanceMarketGreenhouseGasEnhancements.pdf>

⁴³⁹ See Proposed 17 Cal. Code Reg. Sec. 95102 (September 4, 2018 Proposed Amendments), available at: <https://www.arb.ca.gov/regact/2018/ghg2018/proregorder.pdf>

⁴⁴⁰ See 2018 Cap-and-Trade ISOR, available at: <https://www.arb.ca.gov/regact/2018/capandtrade18/ct18isor.pdf>

proposal would create a situation where zero-emitting facilities operating inside of California are assigned a cap-and-trade compliance obligation when they have negative imbalances associated with their generation facilities. The uncertainty associated with having to participate in the Cap-and-Trade program as a clean energy resource would be most difficult to manage for clean energy resources that also act as their own Scheduling Coordinator and/or do not have contractual terms to address the cap- and-trade obligation that would be imposed by this proposed rulemaking.⁴⁴¹ Some of the Scheduling Coordinators for these resources are not already regulated under the Program and would potentially be subject to an after-the-fact assessment of cap-and-trade costs; they may not be able to be compensated for those costs under their contractual provisions. This outcome is not consistent with the signals the Cap-and-Trade program should send to encourage clean resources and their participation in the wholesale electricity markets. Additionally, AWEA California is concerned that it would be difficult for the ARB to assess when, and to what extent, negative imbalances are associated with EIM imports into California and to energy supplied to each generator. Thus, the proposed rulemaking would not result in any appreciable difference in the Cap-And-Trade program beyond the “bridge solution” that is in place today, but could place a new compliance obligation, with the associated financial obligations, on wind, solar and other clean generation sources in California.

Due to the additional time needed to adopt a durable secondary dispatch solution that has broad stakeholder support, the ARB should rely on the current interim bridge solution” through the 2020 emissions year. AWEA California also appreciates that the ARB does not wish to simply collect secondary dispatch information through the MRR and then remove a corresponding amount of allowances from the state cap-and-trade budget. AWEA California believes that on balance, it is more important to take the time needed to resolve these complex issues before implementing a solution that could have negative impacts on this important market. AWEA California looks forward to working with the ARB in implementing a solution to address the ARB’s concerns regarding secondary dispatch. (AWEA)

Comment:

Because an EIM purchaser is defined as an entity that purchases electricity through the EIM either to serve California load, or to deliver or sell to an entity, or on behalf of an entity, that serves California load, this approach would also assign a carbon obligation to California generators that have a negative deviation from day-ahead schedules in real-time...

Fourth, the EIM purchaser approach would result in carbon obligation for many entities that currently are not covered entities. This includes load-serving entities without generating assets that do not import electricity, as well as California renewable

⁴⁴¹ See AWEA California March 1, 2018 Comments in EIM Stakeholder Initiative, available at: <http://www.caiso.com/Documents/ACCCComments-EIMGHGEEnhancements-SecondRevisedDraftFinalProposal.pdf>

generators. This creates additional administrative burden and unfairly penalizes these entities.

Fifth, if carbon obligation on generators for negative deviation are sufficiently high, the EIM purchaser approach would create an incentive for California generators to ignore CAISO dispatch instructions and instead dispatch to the day-ahead schedule. The EIM purchaser approach would also impair the CAISO's efforts to get variable renewable resources to participate in the day-ahead market, as this would subject a renewable resource to a carbon penalty whenever its real-time dispatch does not meet its forecast/scheduled dispatch. (WPTF)

Comment:

WAPA understands the proposed amendments provide for covered entities to report power purchased through the CAISO energy imbalance market (EIM). WAPA also understands CAISO will provide 5-minute data for each scheduling coordinator identification codes (SCID) to ARB and for covered entities' use in preparing their MRR reports. EIM purchases will incur a compliance obligation as determined by ARB sometime after verification of MRR reports.

Currently, WAPA does not directly participate in the EIM Markets. As a result, the proposed amendment's primary impact to WAPA will be through energy imbalance. In particular, WAPA uses four SCIDs to serve the loads identified above: WFLS, WDOE, WPUL, and WNAS. WAPA uses the separate SCIDs for ease of breaking out the various CAISO charges that WAPA passes through to customers. With four SCIDs there may be times when one or more SCIDs will be short, while at the same time, one or more of the other SCIDs may be long. If each SCID is looked at individually, WAPA could appear as an imbalance purchaser in every 5-minute interval, when if taken as a whole, there may not be an imbalance. This may increase WAPA's compliance obligation. Therefore, WAPA requests ARB or CAISO provide an option for combining certain SCIDs for those entities with multiple SCIDs reported in the 5-minute data provided by CAISO. WAPA has additional SCIDs that should not be combined with those listed above. Combining the SCIDs for multiple SCID entities, as requested by those entities, will accurately capture when those entities are actually purchasing imbalance energy. (WAPA)

Comment:

First Purchaser as the point of compliance

As discussed in the ISOR on page 70, the point of compliance for electricity sold into California would be the first purchaser of the imported electricity. In general, EDF supports this approach of having the point of compliance be when the electricity first enters the California grid. EDF is concerned, however, that the concept as proposed may create seams issues with the rest of the electricity sector's compliance obligations. Primarily, the state uses the first deliverer. As the EIM expands, there may be

instances where the compliance obligation should remain with the deliverer and not the purchaser. If the EIM were left isolated, then there may not be a problem, but as the EIM expands there is a potential for market confusion of responsibility between deliverer and purchaser. Part of California's success has been in having a clear set of distinctions between the load and the source, and this proposal introduces uncertainty. We recommend that the ISOR rationale be expanded to explain how under a day ahead EIM, the linkages between first deliverer and first purchaser coordinate, and suggest that this issue may be revisited once the CAISO expansion of the EIM has been finalized. (EDF)

Response: In response to commenters' concerns, staff modified the definition of EIM Purchaser in the 15-Day package to limit the entities responsible for EIM Outstanding Emissions to EDUs receiving allowance allocation who are purchasing electricity directly or indirectly from the EIM. The 45-Day proposal would have included in-State generators among the entities responsible for EIM Outstanding Emissions, including zero-emitting resources with negative imbalances as obligated entities. These entities are not responsible for EIM Outstanding Emissions in the adopted amendments. Changes in the 15-Day proposal reduced the number of entities responsible for EIM Outstanding Emissions to only include existing participating entities, specifically, the EDUs who purchase from the EIM and receive freely allocated allowances, as suggested by several commenters.

MRR was also changed to shift from apportioning EIM Outstanding Emissions based on reporting of 5-minute data, to apportioning the EIM Outstanding Emissions to each EIM Purchaser based on each EIM purchaser's share of annual retail sales. The combination of these changes removes the incentive for EIM Purchasers to alter scheduling and bidding behavior and improves ease of compliance and implementation. See also Response to 45-Day Comments E-1.6 on the calculation of EIM Outstanding Emissions and EIM Purchaser Emissions.

Calculation of EIM Outstanding Emissions and EIM Purchaser Emissions

E-1.6. Comment:

LADWP recommends minimizing EDU reporting requirements by CARB obtaining EIM data directly from CAISO based upon settlement data on an annual basis, as opposed to five-minute basis as currently proposed, and allow publicly-owned utilities the option to designate allowances for compliance with the EIM Obligation. (LADWP)

Comment:

CAISO ENERGY IMBALANCE MARKET (EIM) GHG ACCOUNTING METHODOLOGY

SCPPA appreciates the ability to comment on CARB's collaboration with the California Independent System Operator (CAISO) towards solidifying accounting of GHG

emissions generated from both inside and outside of California as “EIM Outstanding Emissions” and “EIM Purchaser Emissions.” Depending on availability, CARB’s incorporation of MRR §95111(h)(2) and §95111(h)(3)(B) will likely be a heavy burden on SCPPA Members that have limited staff resources to comply with this requirement going forward. The amended regulation includes an additional requirement for data reported in 5-minute increments; whereas, currently this data is only required on an hourly basis. This change is significant, and could cost hundreds of thousands of dollars in new or enhanced system requirements to comply, not including the cost of independent verification. Compliance reporting is important and takes substantial time to complete, and providing data to this level of granularity exponentially complicates the task. This could require hiring additional staff, and may be especially difficult for smaller utilities, whose share of EIM Outstanding Emissions are likely diminutive, to expend significant resources to justify these investments.

SCPPA has reviewed the 45-Day language and discussed this issue with CARB staff, our members, and other utilities. We understand this is a complex issue and subject to change during a subsequent 15-Day comment period, but there are some fundamental components for which SCPPA recommends be a part of any final solution:

1. High accuracy on compliance obligation determinations;...
 - Higher compliance obligation accuracy could be achieved by better subdividing what the EIM contributes to, and that the rest come from specific generation sources or imports. This will better enable CARB to see what is in and out of the EIM. If the calculation to use total retail sales without subdividing is maintained, the outcome could disincentive procurement of clean energy resources because this approach does not recognize zero-emission energy sources serving California loads and could make paying a penalty a less expensive alternative...
4. Minimize EDU reporting requirements by obtaining data directly from CAISO based upon settlement data...
 - Requiring annual reporting, as opposed to hourly or five-minute data for determining shares of EIM Outstanding Emissions, is a far more feasible ask for EDUs, especially smaller ones that are both budget- and staff-constrained. The settlement data CAISO already processes would likely provide the most accuracy while also reducing reporting burdens on EDUs. (SCPPA)

Comment:

1. Default unspecified emissions factor

One issue that merits close attention is the role of unspecified power in the cap-and-trade program, and GHG emissions accounting more generally. Under the regulations, electricity imports from specified power plants receive source-specific greenhouse gas emissions factors. But many California utilities import significant quantities of electricity from “unspecified” sources (Weissman, 2018). Under AB 1110, unspecified sources are

defined as “Electricity that is not traceable to specific generation sources by any auditable contract trail or equivalent.”⁴⁴²

In the MRR and cap-and-trade regulations, unspecified resources are assigned a default, time-invariant emissions factor of 0.428 tCO₂e per MWh.⁴⁴³ This factor was developed in 2010 and was based on the average western grid supplies from the years 2006 through 2008 (Kaatz & Anders, 2016). Using this factor as the default, there is the potential for coal-fired generation to be classified as unspecified power for delivery to California at a substantially lower cost than it would face if made as a specified transfer.

Calibrating the unspecified emissions factor in a way that accurately reflect the emissions intensity of unspecified imports is challenging for two reasons.

First, the choice of default emissions factor changes the incentive market participants face when determining whether or not to reveal the source-specific emissions of their electricity imports. In other words, the composition of unspecified imports will depend in part on how the default emissions factor is calibrated. Electricity resources that are more GHG-intensive than the default factor (e.g., coal) may prefer transactional arrangements that are reported as unspecified imports, whereas those resources that are less GHG-intensive than the default factor (e.g., renewables) may prefer to find transactional arrangements that reveal them as specified sources, and therefore enable them to reduce costs. The default factor should be chosen with this supply-response in mind.

A second, related challenge stems from the significant heterogeneity in the emissions intensity of sources supplying the California electricity market. The average emissions intensity of generators that comprise unspecified imports could be very different from the average emissions intensity across all suppliers. It can thus be very challenging to identify the marginal resources that ramp up in response to increased demand for California imports.

We note that electricity import data from CARB and the California Energy Commission appear to be diverging, especially with respect to unspecified power (see CARB, 2018c; CEC, 2018). Additional analysis could be helpful to understand the causes of these differences and what, if anything, they mean for accuracy in tracking electricity emissions. There is nothing inherently problematic with different definitions of unspecified power that are used for different purposes. At the same time, however, differences in data reporting may enable analysts to evaluate whether market participant are responding strategically to default emissions factor and associated incentives...

Meanwhile, we note that under both the bridge solution and the proposed regulatory changes that would apply beginning in 2019, leakage in the EIM is calculated based on

⁴⁴² Cal. Pub. Util. Code § 398.2(e).

⁴⁴³ Cal. Code Regs., title 17, § 95852(b)(1)(C) (citing id. at § 95111(b)(1) (specifying the default unspecified emissions factor)).

the assumption that the “true” EIM emissions are captured by CARB’s unspecified emissions factor. Therefore, the effectiveness of this approach depends on the relevance and accuracy of CARB’s unspecified emissions factor. As discussed in Section: Default unspecified emissions factor [another section of IEMAC comments] the unspecified emissions factor has two important shortcomings. First, it is based on older data that may no longer be representative of actual average WECC-wide emissions. Second, it is a time-invariant estimate of average emissions, not an estimate of the marginal emissions that result from the effect of California’s climate policies on electricity imports at any given point in time. The subcommittee believes that further analysis of these issues is warranted...

6) Unspecified emissions factor. CARB should evaluate the unspecified emissions factor and consider updating it. The current factor is based on outdated data and may no longer be representative of unspecified imports in the current market environment. We specifically recommend that CARB consider how the choice of a default emissions factor may affect market behavior; higher default emissions factors are likely to encourage relatively low-carbon resources to self-identify as “specified” resources to avoid the higher default emission factor applied to unspecified resources, potentially improving the quality of data on California’s electricity imports. Additionally, CARB should evaluate whether a default parameter that is calculated as an average is a reasonable proxy for the marginal emissions associated with electricity imports. (IEMAC)

Comment:

Energy Imbalance Imports Net and Gross

The ISOR proposes a ratio of purchased MWh of electricity to total transactions. In general, EDF supports this methodology. EDF seeks clarification on a principle, which is that compliance should be on all imported electricity through EIM, and not just the net imports. EDF suggests that the type of purchases that are required to comply with the ISOR, as discussed on page 72, need to be more clearly defined. For example, an entity could import 10 MWh and in the same day export 9 MWh of electricity. The daily net purchase attributed to that entity would be 1 MWh. In this scenario, it is unclear from the language in the ISOR whether the compliance obligation would be the 10 MWh or the 1MWh. Since the 9MWh that are being exported through EIM are already captured in other parts of the regulation, it would be natural to exclude them consideration. However, we do not believe this is how the ISOR is intended to be interpreted. EDF contends that the compliance obligation should not be 1 MWh, but rather the full 10MWh that was imported. EDF suggests that the language listed in the ISOR be updated to ensure that the ratio as described on page 72 be total purchases and not net purchases. As discussed in this section, the language modifications proposed in the ISOR is to prevent leakage. This clarification is even more important for the anticipated EIM expansion. EDF encourages the Board to make revisions to the

ISOR now anticipating that there will be additional imports and exports of electricity that go beyond the ratio contemplated under a day ahead system. (EDF)

Comment:

Among other efforts, the ISO's implementation of the western EIM has facilitated the integration of increasing amounts of renewable energy resources in the Western Interconnection that have helped reduce greenhouse gas emissions from the electricity sector. The EIM is an extension of the ISO's real-time market that helps balance supply and demand in the ISO balancing authority area as well as in EIM Entities' balancing authority areas. The use of the EIM permits other balancing authority areas to take advantage of the ISO's real-time market processes and facilitates transfers of power across the combined ISO and EIM footprint based on available transmission capability. Since its inception, the EIM has facilitated economic transfers of energy between the ISO and EIM Entities.

These transfers have in part supported the operation of non-emitting clean resources. For example, in the second quarter of 2018, the EIM allowed the ISO to avoid the curtailment of over 129,128 MWh of renewable output in the ISO balancing authority area that displaced an estimated 55,267 metric tons of carbon dioxide equivalents.⁴⁴⁴ As the EIM footprint grows and more renewable energy resources develop in the West, the EIM will continue to facilitate these emission reductions. ARB's regulations do not account for these emission reductions, but ARB should acknowledge that the EIM creates significant emission reduction benefits across the region as ARB considers rule changes related to EIM outstanding emissions...

D. The proposed amendments would over-count secondary dispatch volumes and over-state secondary dispatch emissions.

ARB's proposed amendments would calculate a compliance obligation for every 5-minute EIM transfer at the unspecified source emission rate to reflect the assumption that a secondary dispatch is occurring in connection with each 5 minute EIM transfer to serve California demand. This assumption is not correct and over-counts both the volume of secondary dispatch as well as the GHG intensity. The proposed amendments over-counts the volumes because they apply to the full MW of an EIM transfer to serve California demand rather than the actual MW associated with the secondary dispatch. For example, if during an interval there are EIM transfers to serve California demand and the EIM participating resources are all dispatched above their base schedule, then no secondary dispatch will occur. Under this scenario, the resource-specific emissions accurately reflect the emissions intensity of the EIM transfer serving California demand even if the attributed resources are non-emitting. The

⁴⁴⁴ Western EIM Benefits Report Second Quarter 2018 dated July 31, 2018 at 13, available at https://www.westerneim.com/Documents/ISO-EIMBenefitsReportQ2_2018.pdf.

proposed regulations, however, would apply the unspecified source emission rate to the full transfer quantity.

III. ARB should work with the ISO and stakeholders to develop a more accurate measure of the volume and emission intensity of EIM outstanding emissions.

The ISO acknowledges that ARB's interim bridge relies on an approach that also overstates the volumes of emission intensity of secondary dispatches that may occur in connection with EIM transfers to serve California demand. However, this assumption should not be made for a permanent solution in ARB's regulations. Secondary dispatches will not occur in all intervals. The ISO completed a re-run of market results from several trading days in October 2017 to assess the impact of its new design on secondary dispatches. For this time period, the ISO observed a 40 percent decrease in secondary emissions using its pending market enhancement. The ISO believes ARB needs to work with stakeholders to assess how to identify a more accurate assessment of secondary dispatch volumes that may give rise to EIM outstanding emissions.

The proposed amendments would also create a compliance obligation that overstates the emission intensity of secondary dispatches that do occur. Based on the re-run of market results from October 2017 using the ISO's pending market enhancement, the average emission rate of EIM participating resources that moved from their base schedules to address the need for secondary dispatches was four times less than the unspecified source emission rate used by ARB. The ISO believes ARB needs to work with stakeholders to assess how to identify a more accurate emission rate for EIM outstanding emissions...(CAISO)

Comment:

b. EIM Purchasers Should Receive an Allocation of Credit for Emissions Reductions Occurring Outside of California

If the ARB is going to apply a compliance obligation to entities in California for emissions and activity occurring across the West, it should seek ways to credit those entities for emissions reductions occurring across the West that may have a causal connection to California's participation in the EIM. Enabled in part by the EIM, PacifiCorp re-operationalized its owned generation fleet in 2016, leading to significant emissions reductions. This trend has sustained through 2018 with a reduction of approximately five million tons of carbon dioxide per year, when measured against a five year average. These emissions reductions would not have been possible without California's participation in the EIM. However, while overall PacifiCorp emissions have decreased significantly, PacifiCorp's California Cap-and-Trade compliance obligation has increased over this same time period due to increased energy exported to California via the EIM. This creates the overall impression that California's participation in the EIM has had a negative impact on overall greenhouse gas emissions when in fact the opposite is true.

Presumably, if the emissions reductions described above occurred inside California or if the entire West was under an emissions cap, entities with a compliance obligation would receive “credit” for the reductions by virtue of being responsible for fewer emissions. This is the fundamental concept of a cap: that entities under it have the ability to reduce their obligation by reducing emissions. The ARB’s approach to regulating secondary dispatch emissions ignores this fundamental. If the ARB is going to apply an obligation to California entities for emissions outside of California over which they have no control, it should also seek ways to credit entities with corresponding emissions reductions occurring outside of California that may have a causal connection to California’s participation in the EIM. (PACIFICORP)

Response: Under AB 32, CARB must account for statewide GHG emissions, including all emissions resulting from the generation of electricity delivered to and consumed in California, whether that electricity is generated in-State or imported to California to serve California load. AB 32 also directs CARB to minimize emissions leakage to the extent feasible as CARB implements the Cap-and-Trade Program. The design of EIM is a known source of emissions leakage, which CARB has a mandate to address. The adopted amendments address EIM emissions leakage by ensuring it is addressed by the electricity sector. The adopted amendments do so by placing the responsibility to ensure environmental integrity of the Program for EIM emissions leakage on electrical distribution utilities that purchase electricity from the EIM and receive freely allocated allowances.

Even with the CAISO’s recent changes to limit the quantity of electricity deemed to serve California load, the EIM algorithm still attributes lower emitting resources to serve California load without fully capturing the emissions resulting from the imported electricity. When the EIM model determines which out-of-state resources are deemed delivered to California in a particular interval, it will always minimize costs by attributing delivery to the cleanest participating resources that have elected to be deemed delivered to serve California load. The cleanest resources are deemed delivered regardless of whether the emissions associated with those specific resources are the only emissions used to satisfy the EIM energy transfer to California. As CAISO’s EIM Greenhouse Gas Enhancements 3rd Revised Draft Final Proposal states “the [current] proposal reduces secondary dispatches, but does not eliminate them.”⁴⁴⁵

In order to calculate the EIM Outstanding Emissions, CARB calculates the full GHG profile as the amount of MWhs imported to California under EIM, multiplied by the default emissions factor, and adjusted for transmission losses (“Total California EIM Emissions”). To avoid assigning a double compliance obligation for EIM Purchasers, CARB subtracts out the emissions associated with the

⁴⁴⁵ See <http://www.caiso.com/Documents/ThirdRevisedDraftFinalProposal-EnergyImbalanceMarketGreenhouseGasEnhancements.pdf>.

model's deemed delivered MWhs ("Deemed Delivered EIM Emissions") from Total California EIM Emissions, to establish EIM Outstanding Emissions. EIM Outstanding Emissions represent the emissions leakage that need to be accounted for within the reporting program and that is used to calculate EIM Purchaser Emissions.

Until future modifications to the EIM algorithm allow direct identification of the complete emissions supporting EIM transfers at the time of dispatch, the default emissions factor is the best identification of the emissions rate of these marginal plants and should supplement the emissions reported directly through the current deeming algorithm. The default emission factor is appropriate because it reflects the emissions of power plants on the margin of western electricity markets and in doing so reasonably approximates the emissions effect of marginal changes in that market in response to changes in California demand.

Some commenters have requested an update to either the default emissions factor calculation or the methodology for calculating the default emissions factor. Updates to the default emissions factor were outside the scope of the MRR and Cap-and-Trade Regulation rulemakings. Nevertheless, CARB staff conducted a review of the 0.428 MTCO₂e/MWh default emission factor that was adopted as part of the 2010 MRR. That value was calculated based on coordination with Western Climate Initiative (WCI) partners and an analysis of the average marginal generation for power plants located in the Western Energy Coordinating Council (WECC).⁴⁴⁶ Marginal generation includes plants that are assumed to be capable of generating additional electricity in response to a marginal increase in electricity demand. In the WCI analysis, the calculation of emissions from marginal generation included all fossil fuel-fired power plants in the WECC with a capacity factor of less than 60 percent that do not include a combined heat and power (CHP) component. Renewable and hydroelectric resources, as well as fossil fuel-fired plants with a capacity factor greater than 60 percent, were excluded and considered either to serve baseload or to not be available for export to California. The resulting unspecified source emission factor is similar to the emission factor from an average single-cycle natural gas power plant. Though that value was adopted as part of rulemaking activities in 2010, CARB believes that the emission factor is still an appropriate approximation of the emissions rate associated with power plants on the margin of western electricity markets. While increases in renewables and decreases in coal-fired electricity generation have meant that the emissions intensity of generation in the WECC has decreased since the original analysis was performed, marginal generation resources are still broadly similar. CARB recently reviewed the WCI's original methodology and current data from plants in the WECC, and CARB believes that

⁴⁴⁶ <http://www.westernclimateinitiative.org/document-archives/Electricity-Team-Documents/Default-Emission-Factor-Calculators/Default-Emissions-Calculator---Announcement-and-Description/>

a full analysis of the current marginal generation rate (unspecified emissions factor) would result in a marginal rate similar to the one currently in place due to the methodology used to calculate that factor. In response to one commenter's concerns about coal power being reported as unspecified power, CARB notes that, pursuant to MRR, when first deliverers import coal-fired electricity under long-term contracts, they must report the electricity as specified power at the resource-specific rate.

One commenter notes that CARB and the California Energy Commission (CEC) definitions of unspecified power appear to be different. The commenter is correct. "Unspecified power" under MRR is not the same as "unspecified power" in other contexts. For in-State power, CARB receives GHG emissions data directly from the source—power producers—through the MRR which supports the Program. Therefore, CARB knows the GHG emissions produced by all power plants operating in California. There is no in-State "unspecified power" under this form of emissions accounting. For CARB's programs, all "unspecified power" is associated with electricity imports. However, for CEC purposes of the Power Content Label, the context is specific to the resource mix of the individual utilities or CCAs. In this context, "unspecified power" has a different meaning from the CARB definition and can include in-State electricity.

In response to comments on accounting for the export benefits of EIM by crediting exported electricity emissions against imported electricity emissions, such netting is not allowed under MRR or the Cap-and-Trade Regulation. This ensures that California is fully accounting for emissions from electricity, whether generated in-State or imported, to serve California load. CARB's regulations also do not allow crediting exports against electricity imported under EIM. CARB's regulations do not support this type of accounting as it would not fully account for emissions from electricity generated in-State, which is required by AB 32. There is no crediting for any goods or energy produced in-State and exported for final use out-of-state.

In response to commenters' concerns that the use of 5-minute EIM data to calculate EIM Purchaser Emissions would be overly complex and could have unintended impacts on CAISO market behavior, staff made 15-Day changes to the Regulation that instead require that EIM Purchaser Emissions be calculated using annual retail sales information, most of which is already reported pursuant to MRR. The adopted amendments ensure a simpler and easier to implement approach to assigning EIM Purchaser Emissions. Some commenters suggested CARB use annual EIM data to calculate EIM Purchaser Emissions and also requested higher accuracy in calculating EIM Purchaser Emissions. The recommendation to use annual EIM data (as opposed to annual retail sales as in the adopted amendments) presents potential unintended impacts on market behavior similar to the use of 5-minute EIM data as the use of annual EIM data

could also unintentionally incentivize EIM Purchasers to alter their behavior in CAISO's markets. As such, CARB declines to make this change. Using annual retail sales information avoids potential market impacts as retail sales information does not impact electricity market behavior and ensures the responsibility is shared equitably by EIM Purchasers based on size.

EIM Purchaser Requirements and MJRP Entities

E-1.7. Comment:

II. MJRP Comments

PacifiCorp is a multi-state utility that provides retail electric service to approximately 1.8 million retail customers located in California, Idaho, Oregon, Utah, Washington and Wyoming. In California, PacifiCorp serves approximately 48,000 customers in Del Norte, Modoc, Shasta and Siskiyou counties. PacifiCorp is not a part of the CAISO balancing authority area. Rather, PacifiCorp operates two balancing authority areas (PacifiCorp West (PACW) and PacifiCorp East (PACE)) that span its six-state service territory, including California. As an MJRP under MRR, PacifiCorp's compliance obligation is calculated by developing a system emission factor for PacifiCorp's entire system including imports and exports. The system emission factor is multiplied by PacifiCorp's load to determine its compliance obligation. Given this unique situation, the ARB's proposal with respect to EIM Purchasers creates two issues, described below.

a. Secondary Emissions Associated with PacifiCorp's California Load Service Are Already Accounted For in the System Emission Factor

EIM transfers used to serve PacifiCorp load in California are imported to PACW or PACE from adjacent EIM Entity balancing authority areas. The CAISO does not create a resource specific- attribution for energy delivered to PacifiCorp balancing authority areas via the EIM. For purposes of developing PacifiCorp's Cap-and-Trade compliance obligation, EIM transfers to PACW and PACE are considered unspecified purchases. Accordingly, a compliance obligation is assessed for these transfers based on California's default emissions factor. Due to this approach, concerns regarding secondary dispatch emissions are not the same for EIM transfers to PACE or PACW as those related to EIM transfers to the CAISO balancing authority area.

Through the application of the default emissions factor, PacifiCorp's California customers are already fully accountable for any secondary EIM dispatch emissions that may occur outside of PACW and PACE. Due to this, PacifiCorp should not have a compliance obligation, nor lose any allocated allowances, to account for secondary EIM dispatch emissions for EIM transfers to the CAISO balancing authority area. Treating PacifiCorp as an EIM Purchaser would unfairly penalize its California customers by making them pay twice for the same emissions.

b. The Default Emissions Factor Should Apply to EIM Energy Transfers From PacifiCorp's System to the CAISO Balancing Authority Area When Calculating PacifiCorp's System Emission Factor

Specified sales, including energy transferred to the CAISO balancing authority from PacifiCorp's system via the EIM, are subtracted from PacifiCorp's system emission factor when determining PacifiCorp's Cap-and-Trade compliance obligation. This means that specified sales to California via the EIM that are zero-emitting have the effect of increasing the compliance obligation associated with PacifiCorp's California load. This increase translates to increased costs for PacifiCorp customers. Under the ARB's current proposal, the default emissions factor will be applied to these energy transfers. PacifiCorp requests that these specified sales be reflected in PacifiCorp's system emission factor calculation consistent with this treatment. (PACIFICORP)

Response: PacifiCorp serves load in multiple states, including a region of northern California. Because only a portion of the load served by PacifiCorp is located in California, PacifiCorp is responsible for accurately accounting for, and meeting the compliance obligation associated with, the emissions that serve its California load. PacifiCorp does not face a Cap-and-Trade Program compliance obligation for any emissions serving its non-California load.

Since PacifiCorp does not know the resources serving its California-based load at the time of dispatch, CARB views PacifiCorp's reporting of its California load served by EIM imports at the default emissions rate, pursuant to MRR, as appropriate for accurate emissions accounting. This type of reporting of unspecified imports is consistent with all other electricity imported to California where the source of the electricity is unknown. PacifiCorp contends that the reporting of the EIM electricity to serve its California load at the default emissions rate should fulfill any obligation it may have to account for EIM emissions leakage.

CARB disagrees. The adopted amendments ensure that CARB is accounting for California's GHG emissions and minimizing emissions leakage, as required by AB 32. The amendments also ensure the environmental integrity of the Program for EIM emissions leakage by placing the responsibility for addressing the leakage on entities in the electricity sector. Similar to other EDUs, PacifiCorp is benefitting from the EIM and receiving allocated allowances to address the cost burden of complying with the Program for its California load. Therefore, PacifiCorp must share in the responsibility of ensuring the environmental integrity of the Program for EIM Outstanding Emissions through a direct retirement of a portion of its allocated allowances. CARB does not see a nexus between the reporting of the mix of resources available to PacifiCorp to serve its California load, as required under MRR, and EIM Outstanding Emissions, which accounts for emissions leakage in EIM.

CARB encourages PacifiCorp to work with CAISO to refine the EIM definition of California load. This could help ensure PacifiCorp's California load more accurately reflects the resource mix used to serve that load at the time of dispatch. If all MRR requirements for specified electricity are met, this would allow PacifiCorp to report its imports to serve its California load at resource specific rates, but it would not alleviate PacifiCorp from the direct retirement of allocated allowances for purposes of addressing EIM emissions leakage. CARB will monitor this issue, including any changes at the CAISO, and propose future regulatory amendments as appropriate.

Resource Shuffling and EIM

E-1.8. Comment:

3. Resource Shuffling in Regional Electricity Markets

Concerns have also been raised about resource shuffling in the context of the CAISO Energy Imbalance Market (EIM). The EIM is a real-time, bulk power market that dispatches electricity generating resources to meet short-term supply imbalances across much of the Western U.S. Out-of-state power plants are dispatched to CAISO if and only if they elect to become subject to the cap-and-trade program and submit a "GHG Bid Adder" that is based on facility-specific GHG emissions factors and the California cap-and-trade market price.

The GHG Bid Adder affects the EIM operator's dispatch order such that lower-carbon resources are preferentially dispatched to serve California load. Low- and zero-carbon resources outside of California thus have an incentive to opt in to the EIM to serve CAISO load. However, as relatively clean out-of-state resources are called on to supply California, higher-carbon resources may be reallocated to serve non-California EIM load. This is sometimes called "backfilling" or "secondary dispatch" (CARB, 2018b: 70-73; CAISO, 2018).

CAISO, CARB, and other stakeholders have been experimenting with ways to address this problem. Until recently, CAISO was testing what it called a "two-pass solution" where the EIM market algorithm would be run twice: once without the carbon price, and again with the carbon price included from entities' bids. By comparing these two real-time optimization results, CAISO hoped to identify resources that were being re-allocated across state borders in response to the carbon price.

However, some observers criticized the method's use for determining which resources should be deemed dispatched to California on the grounds that the two-pass solution could enable gaming of electricity market bidding strategies (Hogan, 2017). CAISO has since moved away from the two-pass approach. In principle, however, this approach could still be used to estimate the policy-induced increase in emissions from generating resources outside of California, even if CAISO adopts another method for determining which out-of-state resources are dispatched to serve CAISO load.

More recently, CAISO developed an alternative approach to mitigating leakage in the EIM that restricts the volume of power out-of-state generators can bid to serve CAISO load (CAISO, 2018) and filed for EIM tariff amendments with the Federal Energy Regulatory Commission in August 2018. FERC's regulatory review is ongoing as of this writing. (IEMAC)

Response: Addressing changes to the way the EIM algorithm works is outside the scope of both CARB's authority and this rulemaking. However, CARB is optimistic that CAISO's recent change to restrict the volume of deemed delivered electricity in EIM to only that above the base schedule will reduce the magnitude of EIM Outstanding Emissions. CARB will continue to work with CAISO and stakeholders to develop possible solutions to EIM emissions leakage in CAISO's algorithm. See Response to 45-Day Comments E-1.4 regarding why CARB declines to retain the bridge solution.

Market Incentive Analysis and Public Data

E-1.9. Comment:

2. Accounting for CAISO EIM emissions

As noted above, CARB initially supported CAISO's two-pass market optimization approach as a mechanism to provide a rigorous accounting framework for EIM emissions accounting. However, based on stakeholder feedback, CAISO determined not to implement the two-pass solution and instead has proposed a mechanism to FERC that limits the amount of energy an out-of-state power plant can bid to deliver to serve CAISO load (CAISO, 2018).

In the current cap-and-trade regulations, CARB has developed what it calls a "bridge solution" to address emissions leakage in the EIM market. Under this bridge solution, CARB must first estimate emissions leakage that has occurred. CARB does this by assuming that the true emissions associated with EIM imports is determined by the unspecified emissions factor, and therefore that the calculated leakage from EIM imports is the difference between the unspecified emissions factor and the source-specific emissions of resources that the CAISO EIM algorithm deems to be dispatched to serve CAISO load (ARB, 2018d: 15-16). Then, CARB will retire allowances to account for outstanding EIM obligations from the pool of allowances that remain unsold from the 2016-17 auction collapse. In the new proposal, CARB proposes to retire allowances from future program budget years to account for estimated emissions leakage associated with EIM transactions in 2018 and Q1 2019, rather than retiring allowances from the pool of temporarily unsold allowances from undersubscribed auctions (CARB, 2018b: 73).⁴⁴⁷

⁴⁴⁷ Such a change may be necessary because the pool of unsold allowances from undersubscribed auctions is temporary and may not be available on an ongoing basis. See the Managing Allowance Supply subcommittee report [see 45-Day Comment B-2.6] for more details.

Beginning in Q2 2019, CARB proposes to calculate EIM-wide leakage using the method as for the “bridge solution” and assign this leakage in the form of annual compliance obligations for EIM importers on a basis that is proportional to their share of total EIM electricity imports (CARB, 2018b: 72). From this point forward, there would be no need to retire allowances to account for leakage in the EIM because the calculated leakage would be assigned to EIM importers on an ongoing basis. Again, the leakage is calculated based on the difference between the source-specific emissions from power that CAISO deems delivered to California and the unspecified emissions rate, which is taken as the “true” emissions profile of EIM imports. Under the proposal, EIM importers would face compliance obligations that are equal to the emissions associated with source-specific imports that CAISO deems to be delivered to California plus a proportional leakage factor (CARB, 2018b: 72-73).

Based on a preliminary review, we believe that retiring allowances to account for emissions leakage from resource shuffling is a reasonable approach to preserving the environmental integrity of the cap-and-trade program, provided that this leakage can be credibly estimated. CARB’s proposal to retire allowances first from the pool of unsold allowances, and later, directly from future budget years, is a sensible way to accomplish these ends.

However, there may be additional economic consequences to the proposed solutions that merit additional analysis. CARB’s “bridge solution” would retire allowances that would otherwise be made available for sale to the entire market, reducing market-wide supplies and increasing the market-wide cost of program compliance to account for leakage. Under this approach—whether allowances are retired from the pool of temporarily unsold allowances from undersubscribed auctions, or future allowance budget years—the cost of mitigating leakage in the electricity sector is borne by all market participants.

In contrast, the proposal for Q2 2019 and beyond would impose the costs of mitigating leakage in the electricity sector on the electricity importers directly, rather than across all sectors in the cap-and-trade program. This could increase the costs of purchasing electricity imports via the EIM, which could in turn affect electricity importing decisions more broadly. It is possible that these effects would induce importers to switch away from EIM imports, where CARB calculates the “true” emissions at the unspecified emissions factor rate, and instead prefer bilateral contracts with the same low-carbon resources, which would be eligible for source-specific emissions accounting outside of the EIM and without mitigating leakage.

The subcommittee has not had sufficient time to review CARB’s proposed methods in detail and therefore cannot express a final view on these important matters. However, it is clear that the concept behind CARB’s new proposal will alter electricity market incentives. The market implications of these incentive changes will be important to study and monitor going forward...

5) **EIM leakage.** CARB should report its calculation of GHG emission obligations in the CAISO Energy Imbalance Market, including both the outstanding GHG emission obligations related to CARB’s “bridge solution” for 2017, 2018, and Q1 2019, as well as for the new compliance obligations that will be imposed on EIM importers beginning in Q2 2019. CARB’s analysis of these obligations should be transparent and publicly accessible. Furthermore, we recommend that CARB and other stakeholders monitor the effect of the proposed compliance obligations associated with mitigating leakage in the CAISO EIM. Not only does the estimate of leakage need to be accurate (see Recommendation 6, below), but the potential for the remedy to cause leakage to shift to sectors that lack leakage mitigation solutions should be carefully tracked. Additional analysis to compare the potential consequences of imposing leakage mitigation requirements on electricity importers versus the market as a whole would be helpful in understanding whether these risks are large or small. (IEMAC)

Response: With respect to the comments on potential market impacts of the 45-Day EIM Purchaser requirements, see Response to 45-Day Comments E-1.5 and E-1.6. Additional background on EIM emissions leakage can be found in Response to 45-Day Comment E-1.2.

In addition, CARB released public data on EIM Outstanding Emissions for 2016 and 2017 in the Compliance Instrument Report posted publicly in early October 2018 and in the 2015 – 2017 Compliance Report posted in early December 2018. The 2016 EIM Outstanding Emissions amount was also publicly posted as part of the GHG Inventory-2018 Edition and in the 2016 Compliance Report, and the 2017 Outstanding Emissions amount will be included in the next GHG Inventory release in early 2019. CARB will continue to make information on EIM Outstanding Emissions publicly available and will continue to study and monitor impacts of the adopted amendments going forward.

Future Modifications to EIM

E-1.10. Comment:

For several years, the California Independent System Operator (CAISO), CARB and stakeholders have worked to develop changes to the EIM algorithm that would ensure that electricity imports to California and their associated emissions are correctly accounted. The CAISO’s recently adopted proposal to restrict the quantify of an external resources output that can be ‘deemed delivered’ to California to the increment above that resource’s base schedule will reduce the incidence of secondary dispatch, and thus ‘outstanding EIM emissions’, but will not solve the problem completely. For this reason, WPTF expects and supports continued discussion of GHG accounting in the context of the CAISO’s 2019 initiative to extend the day- ahead market. (WPTF)

Comment:

The ARB staff acknowledges that the proposed mechanism for attributing EIM emissions to EIM Purchasers is not perfect and commits to continue working with CAISO in developing a better system for directly accounting for EIM Emissions. (Staff Report: Initial Statement of Reasons, at p. 72.) DWR supports the ARB's and CAISO's continued work on this issue and hopes that a mechanism could be developed that would allow for a more accurate attribution of EIM emissions to the resources that are directly responsible for those emissions. (DWR)

Response: Thank you for the support. CARB will continue to study, assess, and report on EIM emission leakage. Please see Response to 45-Day Comments E-1.6 on future improvements to the EIM algorithm.

E-2. Miscellaneous*Aligning RECs and GHG Data***E-2.1. Comment:**

4. Renewable Energy Certificate (REC) and GHG accounting

Finally, there may be additional complexities associated with the accounting systems used to track power, GHG emissions, and RECs. One commenter (the Center for Resource Solutions) notes that CARB does not require electricity importers to retire the renewable energy certificates (RECs) associated with out-of-state renewables, yet nevertheless counts these electricity imports as zero-carbon resources for the purposes of the mandatory reporting regulation (MRR) and therefore for compliance obligations under the cap-and-trade program. As a result, the RECs associated with these renewable electricity imports are available for use outside of California and could, if counted by external parties as zero-carbon resources, lead to double-counting of GHG emission savings.

We are unable to independently investigate these concerns due to the IEMAC's expedited schedule but believe that this issue merits analysis going forward. Additional work is needed to understand whether this approach leads to inconsistencies with state or regional mechanisms for tracking power, RECs, and GHG emissions, as well as whether additional data disclosures would allow other jurisdictions to harmonize their approaches and policy preferences with California's accounting decisions. We take no substantive position on these issues at this time...

7) Harmonizing electricity, RECs, and GHG data. CARB works with the California Energy Commission and the California Public Utilities Commission to collect data on electricity imports, renewable energy certificates, and GHG emissions. Ensuring consistency between the data used across agencies is an important priority. Additional analysis to evaluate the different approaches California's regulators are using to track

electricity imports and their environmental attributes would be helpful. In light of the potential for double-counting of GHG reductions associated with “unbundled” RECs that are used by out-of-state parties yet associated with electricity delivered to California, additional analysis could help evaluate (1) whether the risk of double-counting of GHG reductions is significant, (2) whether alternative accounting mechanisms would better address the multiple needs of REC and GHG reporting systems, and (3) whether additional data reporting could enable external jurisdictions and private actors mitigate the risk of double-counting for any particular accounting system in used in California. (IEMAC)

Response: This comment is out-of-scope of this rulemaking. CARB is not proposing to change the way RECs are treated in MRR or the Cap-and-Trade Regulation. In addition, as the commenter notes, CARB already works closely with the California Energy Commission (CEC) and California Public Utilities Commission (CPUC) to ensure its programs, including accounting for RECs, are aligned.

REC Retirement and Policy Interactions

E-2.2. Comment:

Overlapping Policies/ Report on Emissions Leakage and Resource Shuffling

One item is mentioned in Chapter 2: Overlapping Policies, and in Chapter 3: Subcommittee Report on Emissions Leakage and Resource Shuffling. This item concerns **renewable energy certificates (RECs) and greenhouse gas accounting**. After the September 21 in-person meeting of the committee, we received a comment from the Center for Resource Solutions that expressed concern that CARB does not require electricity importers to retire the RECs associated with out-of-state renewables, yet nevertheless counts these electricity imports as zero-carbon resources under the cap-and-trade program. As a result, the RECs associated with these renewable electricity imports are available for use outside of California and could, if counted by external parties as zero-carbon resources, lead to double-counting of GHG emission savings. This issue about the effect of overlapping policies on the integrity of the market for RECs is not particular to California; it has surfaced in other venues. Assuredly, the desire of the state agencies is to strengthen renewable markets and not to undermine them. I urge CARB to consider safeguards against the issues that might arise because of the interaction of these policies. (IEMAC – Burtraw appendix)

Response: This comment is out-of-scope of this rulemaking. CARB works closely with the CEC and CPUC to ensure continued alignment of California’s climate and energy programs. CARB, CEC, and CPUC continue to engage with other states to ensure there is a clear understanding of how California’s programs account for GHG emissions in the Cap-and-Trade Program and renewable electricity in the Renewable Portfolio Standard Program.

Request to Study Resource Shuffling

E-2.3. Comment:

- GHG reductions in the electricity sector are driving statewide trends. Electricity imports are potentially subject to resource shuffling. CARB should review and update core resource shuffling accounting methods in the current and proposed regulations. A more comprehensive assessment of the extent to which resource shuffling has occurred would be complicated and inevitably imprecise, but would help to target and inform any mitigation actions going forward...

B. Resource shuffling

Resource shuffling is a specific type of leakage that can occur in energy markets. It is most commonly discussed in the context of electricity markets, but it can also occur in other energy markets, such as those for transportation fuels. The issue is most easily illustrated by example. Suppose a utility once imported power from a carbon-intensive coal plant prior to the cap-and-trade program's existence. In response to the new carbon price, the utility might decide to divest its contract with the coal plant and replace it with natural gas-fired electricity. While this swap will reduce the carbon intensity of the utility's imports, and therefore reduce its compliance obligations under the cap-and-trade program, it may not reduce net greenhouse gas emissions to the atmosphere if the divested coal-fired electricity is purchased by a utility outside of the cap-and-trade program.

Under California's cap-and-trade program, electricity importers are responsible for submitting compliance instruments to cover the greenhouse gas emissions associated with all imports.⁴⁴⁸ As a result, electricity importers have a financial incentive to divest imports from high-carbon resources and replace them with low-carbon resources.

Energy modeling studies have identified a significant potential for resource shuffling in the electricity sector (Chen et al., 2011; Bushnell and Chen, 2012; Bushnell et al., 2014; Borenstein et al., 2014).

Much of the progress California has made in reducing its greenhouse gas emissions in the electricity sector has been attributed to reductions in emissions from imports (CARB, 2018a: Figures 7-8). This underscores the importance of assessing the potential for electricity resource shuffling. In what follows, we identify four potential "channels" through which resource shuffling can manifest in the electricity sector. We then highlight some cross-cutting issues which we see as particularly pressing.

1. Bilateral Contract Shuffling

To the extent that California's climate change policies increase the cost of importing power generated by carbon intensive, out-of-state resources, electricity importers have

⁴⁴⁸ Cal. Code Regs., title 17, § 95852(b).

an incentive to shift the type and duration of private bilateral import contracts towards less emissions intensive resources. If the electricity generated by the relatively more emissions intensive resources is shuffled to out-of-state consumers, California's GHG accounting will overstate the extent to which emissions have actually declined. This "contract shuffling" can occur via short-term bilateral trades, or it can manifest via the systematic divestment of California utilities' legacy ownership positions in, and long-term contracts with, out-of-state coal-fired facilities (Cullenward & Weiskopf, 2013).

Although CARB's regulations nominally prohibit resource shuffling,⁴⁴⁹ CARB decided to exempt a range of so-called "safe harbor" practices—first via an informal guidance document in late 2012 (Cullenward, 2014a) and subsequently via formal rulemaking completed in 2014.⁴⁵⁰ Among the exempted "safe harbor" practices are any trades affecting legacy coal contracts subject to the provisions of SB 1018's Greenhouse Gas Emissions Performance Standard⁴⁵¹ and transactions in the day-ahead and real-time electricity markets operated by the California Independent System Operator (CAISO).⁴⁵² For a deeper discussion of how these safe harbors might operate in practice, see Cullenward & Weiskopf (2013: 21-26).

After CARB released its safe harbor exemptions to the prohibition on resource shuffling, California load-serving entities divested several major legacy coal contracts (Cullenward, 2014b). These divestitures reduced GHG emissions as reported in California's cap-and-trade program and GHG inventory. To the extent that electricity generated by affected coal plants was simply re-directed to out-of-state electricity customers, some resource shuffling and associated emissions leakage has already happened. To more rigorously estimate the extent to which resource shuffling has actually occurred, one would need to carefully construct a credible counterfactual scenario against which to measure the unit dispatch outcomes we actually observe.

2. Resource Shuffling via Retail Choice

As California embraces various new customer retail choice models in the electricity sector, another potential channel for resource shuffling is emerging. California electricity customers are beginning to transition from legacy retail service providers (e.g., an investor-owned utility) to become customers of new entrants (e.g., a community choice aggregator (or CCA)). According to one projection, by the mid-2020s, CCAs and direct access customers could be responsible for 85% of retail load in California investor owned utilities' service territories (CPUC, 2017: 3).

Many CCAs are contracting with existing out-of-state electricity resources, particularly in service of high-renewable energy retail choice programs. Historically, incumbent utilities have relied on relatively emissions-intensive out-of-state resources. If a CCA

⁴⁴⁹ Id. at § 95852(b)(2).

⁴⁵⁰ Id. at § 95852(b)(2)(A).

⁴⁵¹ Id. at §§ 95852(b)(2)(A)(2), (7).

⁴⁵² Id. at §§ 95852(b)(2)(A)(2)(10).

procures existing clean energy resources that were previously delivered to load-serving entities outside California, those external entities might replace them with higher-carbon alternatives. As demand for electricity supplied by incumbent utilities declines, the relatively emissions-intensive, out-of-state resources that once supplied California utilities in the past could be re-allocated to out-of-state customers in the future, leading to GHG emissions leakage.

There is some preliminary evidence that CCA procurement may be leading to resource shuffling (Rivard, 2018). Given the growing role played by CCAs, we see the potential for resources shuffling in the CCA context as a topic worthy of further investigation...

4) **Resource shuffling.** The leakage subcommittee believes that the research and policy communities could benefit from further study of the extent to which emissions leakage caused by resource shuffling may have occurred in response to the cap-and-trade program's carbon price signal, including with respect to divestment of legacy coal contracts and ownership interests pursuant to SB 1368. (IEMAC)

Response: This comment is outside the scope of this rulemaking as it does not recommend any specific changes to the amendments. Notwithstanding that, CARB notes that ensuring the integrity of the Cap-and-Trade Program is key to the continued success of the Program. CARB does not regulate community choice aggregators (CCAs). CARB regulates electricity emissions, including emissions associated with electricity serving CCAs, upstream, either at the point of in-State generation or at the point of first delivery for electricity imports. CARB will continue to closely study and monitor any activity that appears to constitute resource shuffling to ensure enforcement of the resource shuffling prohibition and any activity that may entail leakage, and CARB will take necessary steps to prevent emissions leakage. This includes monitoring changes in the use of coal to generate electricity. For example, in 2017 as part of monitoring electricity sector emissions, CARB evaluated the 2016 decrease in emissions from imported electricity and included this information in its annual public release of GHG emissions data. This decrease in imported electricity emissions for that year stemmed from decreased electricity production at both Navajo Generating Station and Intermountain Power Project and an increase in low cost competing generation sources.⁴⁵³

F. AUCTION AND RESERVE SALE ADMINISTRATION

⁴⁵³ [Mandatory Greenhouse Gas Reporting 2016 Emissions Year Frequently Asked Questions](#) (November 6, 2017)

F-1. Scheduling and Administration

Support for Reserve Tier and Price Ceiling Unit Sales Processes

F-1.1. Comment:

III. Post-2020 Reserve Sales Mechanism and Sales at the Price Ceiling

PG&E supports ARB Staff's proposal to continue to use the existing Regulation provisions for the proposed Post-2020 Reserve Sales. PG&E also agrees with ARB Staff's proposal for the Price Ceiling sales structure, which allows covered entities to purchase allowances prior to a compliance event. (PG&E)

Response: Thank you for the support.

Support for Reserve Tier Purchasing Restrictions

F-1.2. Comment:

With respect to the price ceiling, WPTF supports the restriction of price ceiling sales to California covered entities and only up to the quantity of instruments needed for the next compliance event. (WPTF)

Comment:

Ceiling Price Units

SCPPA supports the eligibility criteria outlined in (b)(1) that would restrict price ceiling sales only to California covered entities (and opt-in covered entities) that carry a compliance obligation, and (b)(2) that would limit those entities from purchasing only the amount of compliance instruments needed to meet their compliance obligations. Both criteria are reasonable, and will help ensure affordable electricity prices for customers – particularly our low-income customers. (SCPPA)

Response: Thank you for the support.

Sale of Price Ceiling and Reserve Tier Units at Regular Auctions

F-1.3. Comment:

6. Recommendations for cap-and-trade regulatory amendments

1) We encourage the state to investigate simplifying the program by providing for the sale of price ceiling units as well as sales of allowances from the cost containment price tiers in the regular auction by assigning reserve prices to the availability of those compliance instruments. (IEMAC)

Comment:

Price Ceiling Considerations

A second item is mentioned in Chapter 7: Price Ceiling Considerations. This concerns the **structure of the auction and the sale of allowances from the cost containment reserve and price ceiling units**. If these compliance instruments entered the market, they would do so outside of the regular allowance auction through a secondary process. They would be deposited directly into compliance accounts and would not be transferable. In recommendations for Chapter 7, we encourage CARB to investigate simplifying the program by providing for the sale of allowances from the cost containment price tiers and the sale of price ceiling units in the regular auction by assigning reserve prices to the availability of those compliance instruments and selling them at the auction-clearing price. In the chapter, we do not present a thorough motivation for this important reform. I want to do so here.

The two-stage process of issuing compliance instruments—the regular auction and subsequent conditional direct sale—introduces complexity. One does not need to make a fetish of simplicity to observe that increasing complexity makes the program harder to understand and raises costs for participants. Sometimes additional detail is needed to solve a problem, and sometimes it provides opportunities for unintended outcomes, as applies in this case. The time lag between the primary auction and the availability of additional compliance instruments conditional on the price in the regular auction creates a situation in which regular auction participants may need to factor in expectations about the behavior of others, introducing a strategic setting that entices auction participants to bid a price different than their marginal cost of abatement.

One appeal of a uniform price auction for a single good is that it provides participants with a robust incentive to bid their true willingness to pay, that is, there is no expected gain from engaging in strategic bidding in response to expectations about how others might bid. In auction theory, there is no guarantee that the same attribute applies in a multi-unit auction such as the auction for emissions allowances, but there is a general sense based on experience in laboratory settings and in the field that entities will approximately do so. This is helpful because it relies on information that bidders have.

The issuance of allowances through two sequential and separate events can result in two different prices for the issuance of allowances because if entities bid their true willingness to pay in the regular auction it is possible for the clearing price to be above one or more price tiers. However, if bidders anticipate the price to be near a price tier at which additional allowances or price ceiling units would enter the market, they have a strategic incentive to reduce their bid in order not to win an allowance at a price above the price tier. These strategic considerations complicate the decision of compliance entities but have no benefits for environmental or market integrity.

In our Chapter 7 recommendations, we suggest a simple program reform that would address this concern. This reform would issue all compliance instruments using information provided during the regular auction. Allowances sold at the price tiers and price ceiling units would be available at reserve prices specific to each tier, in a directly analogous way to how the auction price floor is implemented. This approach is used to

issue allowances at cost containment price tiers in the Regional Greenhouse Gas Initiative, where the process has worked effectively. In California, if allowances issued from the cost containment reserve could be issued proportionately among all eligible winning bids and could be deposited directly into compliance accounts. Or, auction participants could indicate whether they want to be eligible to receive these allowances. This reform would simplify the administration of the allowance auction and the participation activities of compliance entities. We encourage CARB to consider this reform. (IEMAC – Burtraw Appendix)

Response: The proposal in the IEMAC comments to sell Reserve or Price Ceiling Units through the auction would require changes to the auction settlement rules, which have not been proposed for changes as part of this rulemaking. As such, the proposal in the comment is out of the scope of the adopted amendments.

As to the substance of the comments, CARB originally considered making the reserve allowances available at auction as a simple augmentation to the auction supply based on a price trigger. CARB adopted the existing Reserve sale approach in response to stakeholders' expressed preference for sales from a window at fixed prices.

The time lag between the auction and the Reserve sales was intended to allow auction participants to know the auction results before a Reserve sale. Staff allowed for a similar time lag between the Reserve and price ceiling sales because the potential for depletion of the Reserve tiers means that entities could not be certain of the number of allowances they would obtain at a single Reserve sale. Moreover, staff modified section 95915(d) to require that price ceiling sales, pursuant to AB 398, can only be held once allowances are depleted in the two Reserve tiers. See also Response to 45-Day Comment F-1.5.

CARB staff agree with the conclusion reached in the comment that the availability of the Reserve at fixed prices could cause entities in the auction to place a limit on their bid prices equal to the tier prices. However, the intent of the Reserve tiers is to create a pause in the growth of prices, to give covered entities time to invest in emissions reductions, and for CARB to assess market conditions.

CARB will continue to consider potential changes for improvement to the auction, Reserve, and Price Ceiling mechanisms and assess whether potential future modifications are appropriate.

Separate Auctions for Separate Reserve Tiers

F-1.4. Comment:

In addition, the auction structure should be modified so that allowances from both price containment points are not offered at the same time...

SMUD also contends that the price containment point auctions should be separate auctions, so that the supply from the second price containment point is not offered at the same time as supply from the first and not offered until supply from the first price containment point has been sold. Again, SMUD believes that the price containment points should be pauses where stakeholders consider additional investments in abatement technologies, rather than prematurely accessing the supply from the next price containment point. With sufficient allowances in each price containment point (67 million in the first point, 100 million in the second), market participants should naturally turn to the market for a period of time prior to accessing the second point's supply (or turning to the additional supply available at the price ceiling level).

In practice, SMUD believes that participating entities will likely only submit bids for the lowest Tier available for auction after the switch to the two-tier structure post- 2021 (it is also likely that there will be no reserve auction participation through 2020). However, it is still important to provide certainty to the market about how the price containment point auctions are structured. To ensure separate auctions, SMUD suggests the following changes be applied to the post-2021 Reserve sales:

95913(d)(2) For any Reserve sale that will be offered, the Reserve sale administrator shall provide all eligible participants with notice of the number of allowances available for sale and the terms of the sale at least 30 days prior to the sale.

(A) For Reserve sales prior to 2021, the Reserve sale administrator shall offer all of the allowances in the Reserve for any Reserve sale offered.

95913(i) Purchase Determinations.

(1) **For Reserve sales prior to 2021**, the reserve sale administrator will conduct sales from each tier in succession, beginning with the lowest priced tier and proceeding to the highest priced tier. **For Reserve sales after 2020, the reserve sale administrator will conduct sales from each tier separately. A reserve sale for the second tier shall not be held until the allowances from the first tier have been sold.**

(A) The Reserve sale will continue until either all allowances made available **in each sale** pursuant to sections ~~95870(a), 95871(a), and 95911(g)~~ are sold ~~from the Reserve~~ or all the accepted bids are filled.

Section 95913(4)(B) is no longer needed after 2020, as bids will not be submitted for the second Tier during a first Tier auction.

95913(4)(B) **For Reserve sales prior to 2021**, If allowances remain in the tier after the sales pursuant to section 95913(ih)(4)(A) are completed, the reserve sale administrator will assign a random number to each bundle of 1,000 allowances for which entities submitted a bid for the tier above the current tier

being sold. Beginning with the lowest random number assigned and working in increasing order of the random numbers assigned, the reserve sale administrator shall sell a bundle of allowances to the bidder assigned the random number until the remaining allowances in the tier are sold or all accepted bids have been fulfilled. The price for the allowances sold under this procedure will be the price for the tier from which they are sold, not the bid placed.

95913(6) **For Reserve sales prior to 2021**, after completing the sales for each tier the reserve sale administrator will repeat the processes in sections 95913(ih)(4) and (ih)(5) above for the next highest price tier until all bids have been filled or until the Reserve is depleted. At that time the reserve sale administrator will inform the Executive Officer of the sales from the Reserve to each participant. **After 2020, the reserve sale administrator will inform the Executive Officer of the sales from the Reserve after each Reserve auction in which bids are accepted.**

SMUD notes the section correction included in the above paragraph should occur even if ARB does not accept SMUD's broader reserve sale timing recommendations. Finally, SMUD suggests a reordering of the wording of section 95913(h)(1)(E) to avoid confusion about the meaning. This section describes the allowances that will make up the main amounts of supply for the price containment Tiers. SMUD suggests the following wording change:

95913(h)(1)(E) In 2021, the Executive Officer shall divide evenly between the two new Reserve tiers **the remaining two-thirds of the allowances allocated pursuant to section 95870(a), as well as** the allowances allocated pursuant to section 95871(a), less the allowances allocated pursuant to section 95913(h)(1)(D)~~as well as the remaining two-thirds of the allowances allocated pursuant to section 95870(a).~~ (SMUD)

Response: Staff disagrees with the proposal advanced in the comments and has not modified the adopted amendments.

The existing "roll-down" mechanism allows entities to purchase from the lower tier(s) if they bid to a higher tier and allowances still remain at the lower tier. Thus, allowances are not sold from the second tier until the first is depleted, so there would not be a need for a separate sale. However, CARB expects that with the greater difference between the price containment points in the adopted amendments compared with the existing structure, bidders would be less likely to use the "roll-down" approach and just bid to the lowest tier; especially as market participants will prefer to purchase allowances at the lowest prices possible. Under the adopted amendments the difference between the first and second new Reserve tier prices would be over \$10 (in constant \$2018). Unless covered entities are unable to find instruments below the second Reserve tier price, this should create the pause that the commenter desires.

Moreover, as staff noted in the November 2018 Board hearing,⁴⁵⁴ staff and third party market analysts do not expect prices will increase rapidly. First, the new Reserve tiers are sufficiently large (in 2021, approximately 21 percent and 28 percent of the 2021 allowance budget) that it would be difficult to deplete the Reserve due to one year's shortfall. This would also tend to provide a "pause" in price increases. The regulations that came into effect in October 2017 directed 52.4 million allowances to the Reserve. AB 398 directs these to the two new Reserve tiers. The adopted regulatory amendments redirect an additional 22.7 million to the two new Reserve tiers from the supply that would otherwise have gone to auction. The larger Reserve tiers should provide a greater pause in any escalation of market prices.

Second, CARB is required to report to the Legislature, in consultation with the Independent Emissions Market Advisory Committee, if two consecutive auction settlement prices exceed the lower of the two new Reserve tier prices. The report would include an assessment of the potential for prices to reach the price ceiling for multiple auctions. This report, should it become necessary, would provide an additional signal for the market to look for additional reductions.

In addition, the proposed changes would require additional expense and time to conduct the separate sales. While staff cannot predict how it may modify the systems in the future, staff believes the approach taken in the amendments achieves much of what the comment intends and in a more efficient manner.

Timing of Price Ceiling Sales

F-1.5. Comment:

However, it is not clear why the price ceiling sale would be offered after the first tier of the reserve has been completely depleted, rather than after both tiers have been depleted. (WPTF)

Response: Staff agrees with the comment and has modified section 95915(d) to specify that a price ceiling sale would not be conducted until after all allowances have been sold from both tiers of the new price containment Reserve tiers.

F-2. Other Program Requirements

Maintaining Banking Rules

F-2.1. Comment:

Banking, Cap Adjustments, and Holding Limits

CCEEB supports banking as an integral component of Cap-and-Trade. Without banking, Cap- and-Trade becomes something more akin to a carbon tax. Banking has

⁴⁵⁴ <https://www.arb.ca.gov/board/mt/2018/mt111518.pdf>

allowed for investment, while lowering the costs of achieving the state’s greenhouse gas reduction goals. Additionally, it helps reduce volatility in the market.

Current banking rules that allow use of pre-2021 compliance instruments – including offset credits procured under existing protocols post-2021 – should be maintained to support market continuity, allow compliance entities to adequately plan for their compliance obligations, maintain investment in high quality offset projects, and avoid potential price volatility and market disruption. As such, compliance instruments should not have expiration dates, and those in private accounts post-2020 should not be de-valued. (CCEEB)

Comment:

I. Banking and Holding Limits

PG&E concurs with ARB Staff’s evaluation⁴⁵⁵ that existing banking rules, holding limits and other program provisions already meet the directive of AB 398 to “discourage speculation, avoid financial windfalls, and consider the impact on complying entities and volatility in the market.” Therefore, PG&E supports the maintenance of current banking rules, which support market continuity, allow compliance entities to adequately plan for their compliance obligations, help maintain investment in high-quality offset projects, and avoid potential price volatility and market disruption. (PG&E)

Comment:

SMUD supports the 45-Day language that continues the banking structure from the current Cap and Trade program into and through the 2030 program extension. SMUD thinks that a good banking structure is an essential component of a well- designed Cap and Trade program. To the extent that a bank of allowances has developed in the current program, SMUD believes that reflects early emission reductions, which is evidence of a successful program. Thus, a program change at this time sends the wrong message that successful reductions will be viewed simply as oversupply. (SMUD)

Response: Thank you for the support.

Maintaining Banking Rules and Other Program Aspects

F-2.2. Comment:

CIPA is supportive of CARB’s proposal to leave many of the other market aspects unchanged, including banking rules, program allowance budgets, and general structure of the program. These consistent policy signals allow for longer-term decisions and investments to be made by Program stakeholders. (CIPA)

⁴⁵⁵ ARB. Staff Report Appendix D – AB 398: Evaluation of Allowance Budgets 2021 through 2030. Page 6-7

Response: Thank you for the support.

Adjusting Banking Rules

F-2.3. Comment:

Attachment 1: October 12, 2017 Workshop Comments...

2. CARB should address market overallocation and adjust banking rules per AB 398 requirements in order to ensure the cap and trade program operates effectively to help California meet the 2030 emissions reduction targets and 2050 goals...

B. Banking and holding rules should allow obligated parties to manage risk, but not offer windfall profit opportunities to speculators or substitute for real emissions reductions.

The negative effects of overallocation are magnified by current banking rules, which allow market participants to hold allowances across compliance periods. Because prices are currently near the reserve price, which increases five percent annually plus an adjustment for inflation, the purchase of cap and trade allowances at today's prices offers investors bond-like certainty of stock-like returns, or potentially much, much more if prices rise significantly.

Allowance banking should be available for the purposes of encouraging early action to reduce emissions, and to allow flexibility for firms that cannot precisely predict emissions over time. It should not serve to create a windfall financial instrument for third party traders with access to capital and no compliance obligation or interest in achieving the 2030 emissions reduction targets.

CARB should assess options for reducing the incentive to treat cap and trade allowances as merely high-yield/low-risk financial instruments. Among other options, CARB should consider shortening the period during which banked allowances may ultimately be surrendered or forbidding the banking of allowances across three-year compliance periods. If allowances are purchased at the end of the surrender period, CARB should consider a system under which unused allowances can be returned and their purchase price credited towards allowances purchased in the next period. CARB should also consider adjusting allowances' compliance value over time to reflect changes in the reserve price and/or cap decline rates. Banked allowances' compliance value may be adjusted to reflect their relative value against a shrinking cap. One way to accomplish this would be to treat banked allowances as a deposit against future allowance purchases' reserve price plus the dollar amount above the reserve price at which the banked allowance was purchased, but requiring the party surrendering the banked allowance to make up the difference between the clearing price and the reserve price in the surrender year. Another option is to adjust the compliance value of banked allowances by an amount proportionate to the increased cap stringency and increased reserve price. For example, under a simplified formula, if 100 allowances are purchased

in year x at a reserve price of \$15, if the reserve price rises to \$30 in year y, the 100 banked allowances may be surrendered for a compliance value of 50 tons. CARB should evaluate these and other variations on banked allowance value adjustments to ensure that banking can continue to serve its intended purpose to encourage early action and allow compliance flexibility, without encouraging financial speculation in the cap and trade market, and to fulfill the requirements of AB 398. (NEXTGEN)

Response: Staff disagrees with the comment. The commenters' concern with windfall profits is misplaced. Entities would only make a profit if the price they receive in the future is higher than the current purchase price plus the interest costs incurred by the entity as it holds the allowances into the future. That is, they profit only if they accurately forecast that the present market balance is not as tight as they expect the market will be in the future. Their actions raise the current carbon price, which is expected to incent more reductions by covered entities. In the meantime, they bear considerable risk. CARB designed the program to include voluntarily associated entities (VAE) precisely to engage in this practice. Staff chose to allow these other market participants to increase liquidity in the market and to facilitate the buying and selling of allowances between emitters and counterparties. In addition, more market participants make it less likely for a particular market player to affect the price of allowances by acquiring too many.⁴⁵⁶

The above case would not be expected to result in windfall profits. Competition between VAEs for the available supply should prevent windfall profits, as would existing purchase and holding limits. The more likely source of windfall profits would be changes in the regulation that would raise allowance prices. Staff cannot think of a more effective way to create windfall profits than to unexpectedly reduce allowances issued under the cap, perhaps by retiring allowances unsold at auction or from future vintages not yet released to auction. An unexpected reduction in supply would immediately increase the value of all allowances held. This would create unexpected profits for the "third party traders" the comment refers to and increased costs to covered entities.

See Response to 45-Day Comments F-2.4 and F-2.7 for further discussion on purchase and holding limits and disclosure requirements that CARB staff believes mitigate the concerns of windfall profits.

Finally, the crediting approach proposed by the commenter is also unworkable. Allowances are sold at many different prices. The tracking system does not allow for entities to track individual allowances, because entities cannot see serial numbers. Any accounting needed for the crediting approach would be a monumental burden on the tracking system. It would also remove all incentive

⁴⁵⁶ Proposed Regulation to Implement the Cap and Trade Program, Staff Report: Initial Statement of Reasons, October 28, 2010, p. II-4.

for entities to engage in holding for intertemporal arbitrage, which is needed to reduce market price volatility over time.

Banking Rules and the Role of Speculators

F-2.4. Comment:

Attachment 2: March 2, 2018 Workshop Comments

2. Several Interacting Factors Affect the Market's Ability to Drive Cumulative Reductions Expected by the Scoping Plan and Achieve the 2030 Target, Given Current Oversupply

d. Banking Rules

In addition to addressing market oversupply, CARB should consider adjustments to current allowance banking rules. Current banking rules, which provide for holding limits, but no restrictions on the length of time banked allowances may be held or any means of adjusting banked allowances' value to account for the need to hit not just cumulative, but also annual emissions targets, do not prevent speculative behavior that may artificially increase near-term allowance prices and costs to Californians if CARB addresses the current market oversupply.

Staff noted in its presentation that there is not currently strong evidence of allowance hoarding or speculative behavior in the market. This is not an indication that present rules are adequate to prevent speculative behavior. Rather, it is an indication that many market participants do not currently anticipate future allowance scarcity. But if the cap and trade market must begin driving pollution reductions at the levels anticipated in the Scoping Plan, and we are to achieve the 2030 target, allowances must necessarily become increasingly scarce, and the program must begin driving more reductions than can be expected if prices remain at or near the auction reserve price.

CARB should therefore not rely on present banking practices continuing indefinitely and should proactively prepare for how banking practices are likely to change in a market with an expectation of increasingly scarce allowances.

We therefore reiterate our previous comment on this topic: [Commenter quotes content from Attachment 1: October 12, 2017 Workshop Comments provided above.]
(NEXTGEN)

Response: See the Response to 45-Day Comment F-2.3 for a discussion of the role of voluntarily associated entities in a carbon market. As in the previous comment, the commenter asserts that speculation would “artificially increase near-term allowance prices and costs to Californians.” Staff notes that this assertion ignores the normal role of speculation in stabilizing market prices between time periods. Otherwise, the above comment contains only a recommendation that CARB prepare for changes in banking practices in the future. This would be outside the scope of the adopted amendments.

However, staff would like to take the opportunity to remind the commenter that the existing regulation has processes that self-correct an overabundance of allowances and do make provision for changes in relative scarcity between periods.

If allowances are unsold at auction, they may be returned to auction only if demand increases and results in two consecutive auctions resolving with a settlement price above the Auction Reserve Price (ARP). If the allowances remain unsold for 24 months, they are diverted to the Reserve. AB 398 includes legislative direction on the treatment of unsold allowances after 2020, and the recently adopted regulatory amendments are consistent with AB 398. As indicated in Appendix D to the ISOR for this rulemaking, this mechanism has already been proven effective. Due to the low demand for allowances through 2017, at least 39 million allowances will be transferred to the Reserve and removed from general circulation. These allowances are then available for sale to covered entities at fixed prices that are currently significantly above the ARP. Thus, the existing mechanism prevents allowances from entering the market when prices are too low, and releases them when prices increase. This mechanism increases in effectiveness if there is a longer period of reduced demand for allowances.

Staff would also like to take the opportunity to remind stakeholders that competitive speculative activity can help stabilize market prices over time. In several previous rulemakings, staff provided the basic rationale for allowing voluntary market participants. For example, in the October 2011 Final Statement of Reasons, CARB stated:

We are allowing non-covered entities to hold compliance instruments to ensure that the market prices instruments to reflect the likelihood that the price of instruments will increase over time. We expect that the covered entities will undertake the cheapest direct reductions early, undertaking more expensive reductions later. This increasing cost of direct reduction should lead to higher instrument prices over time. In an efficient market, the expectation that prices will be higher in the future should cause market participants to purchase and bank additional allowances early. This causes the prices to rise early in the program, signaling to market participants that they should be more aggressive in pursuing direct reductions.

We are concerned that excluding financial participants would prevent the market from giving a price signal that reflects expected future increases in the cost of direct emission reductions. Covered entities may not have the financial ability to purchase and hold allowances for later compliance periods. If we exclude financial participants, prices may not reflect anticipated future scarcity and covered entities will not receive the correct price signal supporting the need for additional current direct reductions.

The correct price signal should lead to less volatile price changes over time.

While it is true that speculative participants do not have compliance risk, they do run the risk of financial loss if they overestimate the rate of price increases. Finally, we have a number of regulatory provisions to deter market gaming, including prohibited practices, holding limits, purchase limits, and disclosure of corporate affiliations.⁴⁵⁷

Finally, with respect to the commenter's assertions regarding banking rules, staff notes that Appendix D to the ISOR of this rulemaking reiterates the purpose and benefits of the existing banking rules. CARB has included rules allowing banking of compliance instruments since the beginning of the Program, recognizing that banking creates flexibility and an incentive to make early reductions and encourages long-term commitment to the system from stakeholders. As assessed in Appendix D, staff believe that the existing banking provisions of the Regulation, in conjunction with holding limits and other requirements of the Program, already discourage speculation, avoid financial windfalls, and consider the impact on complying entities and volatility in the market. As such, staff has established such banking rules and has not proposed any modifications to the existing banking rules as part of the adopted amendments. See also Response to 45-Day Comments B-1.3 and B-2.1 for a discussion of modelling conducted in support of the adopted Regulation, and a further discussion of CARB's position that no changes are necessary at this time to allowance budgets or banking rules.

Sunsetting Banked Allowances After 2020

F-2.5. Comment:

1. CARB should sunset surplus credits banked through 2020, as those excess credits, if they are allowed to carry forward after 2020, will substantially reduce the amount of reductions achieved in the 2020-2030 period...

1. Allowances banked through 2020 should sunset after 2020 in order to avoid postponing or precluding new, on-site reductions in the 2021-2030 period.

AB 398 directs CARB to address concerns regarding overallocation of allowances.⁴⁵⁸ California's cap-and-trade program is projected to generate between 190 and 300 million surplus allowances through 2020,⁴⁵⁹ with each allowance representing a ton of

⁴⁵⁷ Final Statement of Reasons, p. 753, October 2011.

⁴⁵⁸ Health & Safety Code § 38562(c)(2)(D),

⁴⁵⁹ Busch, Chris, Recalibrating California's Cap-and-Trade Program to Account for Oversupply: An original quantitative analysis and policy recommendations (March 2017), p. 16
https://energyinnovation.org/wp-content/uploads/2017/04/RecalibratingCA_Cap-Trade_2017.pdf
(accessed 10/19/18).

CO₂-equivalent GHG emissions. Since the cap-and-trade program went into effect in 2013, emissions from facilities subject to the cap have consistently been lower than the projected business-as-usual baseline, which has allowed covered polluters to acquire excess allowances at relatively low prices, as well as free allowances, that they have been able to trade and bank for future use.

At the same time, the price of offset credits has also stayed low, in part because the price of offset credits is dictated largely by the price of allowances, which have been readily available at low prices. This has allowed for the purchase of offset credits at low prices to use at a later date when the price of allowances may rise, and contributes to the current surplus of credits.

The expected surplus of allowances by 2020 is potentially greater than the 294 MMT in reductions that ARB estimates must come from cap-and-trade between 2021 and 2030. As a result, the reductions required under cap-and-trade through 2030 could feasibly be met in large part with the excess carbon credits leftover from the pre-2020 period, if those credits are allowed to carry forward for use in 2020-2030.

If GHG emissions have been lower than business-as-usual projections as a result of general economic factors and larger market forces (i.e., non-carbon market) or because the business-as-usual projection is too high for any reason, and cannot be attributed to climate policies, then the excess allowances are not the result of real reductions in the covered sectors. In that case, surplus allowances that are the accident of larger market trends would be treated the same as reductions attributed to climate policies, and would undermine future real reductions.

It is critical to determine the extent to which the existing surplus of allowances and credits can serve to postpone new, on-site reductions in the years after 2020. If there is a significant probability that the surplus of banked allowances will postpone new, on-site reductions, then the cap-and-trade regulation should contain options for retiring and/or devaluing pre-2021 allowances in private accounts after 2020. (CENTERBIODIV)

Comment:

We strongly recommend that CARB take proactive and transparent action to reduce the current overallocation of allowances in the cap and trade market, including creating requirements to retire pre-2021 banked allowances after 2020.⁴⁶⁰ (CEJA)

Comment:

(3) CARB should take early and transparent action to identify allowance oversupply issues.

We strongly recommend that CARB use a transparent process to take early action in reducing the current overallocation of allowances in the cap and trade market, including

⁴⁶⁰ See generally March 21, 2018 CEJA and APEN Comments.

creating requirements to retire pre-2021 banked allowances after 2020. The current oversupply of allowances has been documented by multiple analyses. An analysis conducted by Energy Innovation found that an estimated “cumulative oversupply through 2020 for the combined WCI market at 270 million metric tons (MMT) with an uncertainty interval of 200-340 MMT.”⁴⁶¹ The Legislative Analyst’s Office has shared a similar analysis.⁴⁶²

Overallocation and oversupply of allowances will hinder California’s ability to achieve its SB 32 mandate, as many legislative and independent analyses have shown. As the Senate Environmental Quality committee stated in their July 12th analysis, “When there is overallocation cap-and-trade ceases to be an effective tool as the allowances replace the need to reduce emissions.”⁴⁶³ The analysis further found that:

Allowing for an overreliance on allowances and offsets results in delays of true emission reductions. If ARB focuses on cumulative reductions in the Scoping Plan and cap-and-trade design processes, oversupply and banking will lead to delays in control measures being adopted, ultimately resulting in statewide emissions being substantially above the target in 2030.⁴⁶⁴

AB 398 requires CARB to: “[e]valuate and address concerns related to overallocation in the state board’s determination of the number of available allowances for years 2021 to 2030, inclusive, as appropriate.”⁴⁶⁵ We have yet to see a substantive proposal from CARB to address the well-established overallocation concerns, as directed in AB 398. CARB should develop such a proposal, which should include establishing requirements for the retirement of pre-2021 banked allowances after 2020. (CEJA)

Response: Staff disagrees with the comments and has not made the proposed changes to the adopted amendments.

The allowance caps are set to help the state achieve its statutory mandates. CARB notes that the 2016 Edition of the Greenhouse Gas Inventory demonstrates the state has achieved emissions below the 1990 level 4 years earlier than mandated by AB 32. Having emissions below the allowance caps and reducing emissions to meet statutory mandates is a desirable outcome. AB 398 contains a specific provision directing the California Air Resources Board (CARB or Board), in adopting a post-2020 Cap-and-Trade Program, to evaluate and address concerns related to overallocation in the state board’s determination

⁴⁶¹ <http://energyinnovation.org/wp-content/uploads/2018/02/WCI-oversupply-grows-February-update.pdf> at p. 3.

⁴⁶² July 12, 2017 Senate Environmental Quality Analysis (citing LAO letter).

⁴⁶³ July 12, 2017 Senate Environmental Quality Analysis.

⁴⁶⁴ July 12, 2017 AB 398, Analysis from the Senate Environmental Quality, available at https://leginfo.legislature.ca.gov/faces/billAnalysisClient.xhtml?bill_id=201720180AB398.

⁴⁶⁵ Cal. Health & Safety Code § 38562(c)(2)(D).

of the number of available allowances for years 2021 to 2030, inclusive, as appropriate. (Health & Safety Code § 38562(c)(2)(D).)

In response to the direction in AB 398, staff focused on whether the allowance budgets (caps) established from 2021 through 2030 need to be adjusted to account for any unused allowances from 2013 through 2020. Concerns have been raised about the possibility that the potential pool of unused allowances hinder the ability of the post-2020 period of the Cap-and-Trade Program (Program) to deliver the greenhouse gas (GHG) emission reductions needed to achieve the 2030 target established by Senate Bill (SB) 32 (Chapter 250, Statutes of 2016). Based on the current best available data, CARB determined that while there may be unused allowances in the early years of the Program, the design features of the Program and the established declining caps reinforce a steadily increasing carbon price signal through the next decade. This analysis can be found in Appendix D to the Staff Report (Appendix D: AB 398: Evaluation of Allowance Budgets 2021 through 2030).

Further, sunsetting any existing unused allowances or removing allowances from the post-2020 caps would increase allowance prices and prices would increase higher and sooner than would occur under the adopted amendments. While this could potentially result in additional GHG emissions reductions beyond those needed to achieve the statutory targets, this would increase the potential for leakage and result in a less cost-effective Program.

Notwithstanding this, staff notes that in adopting the amendments, Board Resolution 18-51 directs staff to continue monitoring allowance supply, and to quantify and report to the Board, by no later than December 31, 2021, the volume of unused allowances from 2013 to 2020, including volumes held in private accounts, and the potential for unused allowances to hinder the ability of the Program to help achieve the SB 32 target. The Board further directed that CARB staff will hold a workshop in 2019 to discuss potential methodologies to evaluate this topic. See Response to 45-Day Comments B-2.1.

Finally, the existing regulation also includes several methods to self-correct for potential supply issues. Allowances cannot be sold at auction for less than the Auction Reserve Price (ARP), which increases annually. If they remain unsold at auction, they cannot re-enter the auction until two consecutive auctions have resolved above the ARP. If allowances remain unsold for 24 months after 2020 they are diverted to the Reserve. The adopted amendments apply this same diversion to the two new Reserve tiers. Once diverted to the Reserve, they would only be released to the market if market prices rise to the two new Reserve tier prices. The adopted amendments set the values for these two prices in 2021 at about \$39 and \$50, expressed in real 2018 dollars. Staff considers these prices high enough to ensure that temporary oversupply would not continue to depress prices. See also Response to 45-Day Comment F-2.4.

Banking Between Compliance Periods

F-2.6. Comment:

Additional Cost Containment Actions: SMUD reiterates recommendations that CARB should continue to develop and consider policies that decrease the demand for allowances, such as electrification, and policies that provide supply flexibility when needed in order to foster stable market prices at levels below the price ceiling. The best market structure is one where the price ceiling influences the market by providing political certainty to help drive abatement but is never reached (not because it is set high, but because abatement actions flourish and keep prices below the ceiling). SMUD suggests that it is appropriate for CARB to consider structural changes including:...

- Policies that ensure that the amount of offsets allowed under the lowered and constrained offset limit can be fully utilized in the market, such as offset banks, offset limit trading or spreading, etc.; and
- A limited amount of banking to smooth the transition between compliance periods, similar to the banking allowed within compliance periods, but only available for a transitional time as one compliance period ends, and another begins. (SMUD)

Response: CARB has not proposed changes to the banking rules, and the recommendation in the comment is out of the scope of the adopted amendments.

In addition, staff does not believe the recommendation is workable, as uncertainty over the fate of compliance instruments between compliance periods creates uncertainty over pricing of instruments during a compliance period. This would occur because entities will consider the value of banked allowances in the next period when setting prices for current transactions.

Staff also concludes that the proposal to have variable banking would make it impossible for voluntarily associated entities to provide liquidity to the market. These entities would have no basis to determine how many allowances to carry out into a new compliance period, or how to price any transaction, if there is uncertainty over the value of allowances carried forward. Similarly, offset project operators could not know the value of their offsets, because the value would depend on when they were used for compliance.

For the comment related to offset limits and banking of offsets, CARB staff notes that the only quantitative usage limit changes proposed as part of this rulemaking relate to modifying the limits pursuant to AB 398. As such, comments on offset banking and offset trading or spreading are outside the scope of this rulemaking and no further response is required. See Response to 45-Day Comment G-2.2 for a further discussion of offsets usage limits according to the adopted amendments.

Increasing Holding Limits

F-2.7. Comment:

ARB should also consider whether changes to the holding limit are necessary now that Cap-and-Trade extends beyond 2020. The reduction of the market due to an increased cap decline will further reduce the holding limit and reduce options to obligated parties. The extension of Cap-and-Trade creates the opportunity to evaluate whether the existing holding limit supports the additional program period. CCEEB would appreciate consideration for increasing an entity's holding limit as we believe this will help reduce market volatility as the cap declines. (CCEEB)

Response: CARB has not proposed modifying the holding limits as part of this rulemaking, and the comment is therefore out of the scope of the amendments. Notwithstanding this, CARB disagrees with the comment's recommendation. The holding limit is determined by the joint allowance budgets of linked programs. These budgets decline for each jurisdiction each year. As the allowance budgets decrease, a fixed holding limit would allow individual market participants to hold a greater share of the market. However, if additional jurisdictions' programs were to link with California, the joint allowance budgets could increase, and the holding limit along with them. Covered entities may use the limited exemption to exclude allowances they need for compliance from inclusion in the holding limit calculation. As such, staff concludes that no upward revision to the holding limit is needed. As staff explained in the FSOR for the 2010 amendments to the Regulation, holding limits are needed for covered entities because, absent a holding limit, any market participant would have the ability to accumulate sufficient instruments to exercise market power. Staff constructed the holding limit to balance the covered entity's need to accumulate with the potential for market power. Once the covered entity has accumulated instruments to cover its compliance needs, the holding limit treats it the same as any other market participant.⁴⁶⁶

G. OFFSETS AND OFFSET PROGRAM IMPLEMENTATION

G-1. General Offsets

Support for Regulatory Compliance Changes

G-1.1. Comment:

Offsets

SCPPA generally supports §95973, "Requirements for Offset Projects Using ARB Compliance Offset Protocols" as use of offsets are an important component of a necessary cost containment mechanism. (SCPPA)

⁴⁶⁶ California's Cap-and-Trade Program, Final Statement of Reasons, October 2011, pp. 771-72.

Comment:

VERA is supportive of the following staff proposals:...

- Appendix E's recognition of the relationship between offset compliance and occupational and health and safety regulations...

Scope of Regulatory Compliance

VERA supports the inclusion of Appendix E's clarification on the scope of regulatory compliance. This amendment allows for offset projects to not be subject to invalidation for non-GHG related "occupational health and safety" issues that may have inadvertently occurred at some point during the crediting period but have no impact on the integrity of the offsets. The language requires full compliance prior to offset submittal requests, which is appropriate and supported by VERA. (VERA, 3DEGREES)

Comment:

ACR supports the following staff proposals:

- Appendix E: Offset Project Activities Within the Scope of Regulatory Compliance Evaluation. This amendment appropriately limits the impact of occupational health and safety regulations and regulatory reporting requirements on offset issuance. (ACR)

Comment:

Regulatory Conformance

Bluesource supports the inclusion of Appendix E's clarification on the scope of regulatory compliance. This amendment allows for offset projects to not be subject to invalidation for non-GHG related "occupational health and safety" issues that may have inadvertently occurred at some point during the crediting period but have no impact on the integrity of the offsets. (BLUESOURCE)

Comment:

§95985. Invalidation of ARB Offset Credits

Finite supports the proposed amendment to §95985(c)(2) which corresponds to the changes made in §95973(b)(1) to allow for prorating periods of noncompliance for forest project reporting periods if an invalidation event has occurred. These changes further increase consistency and parity in eligibility and invalidation provisions across the different protocol types. (FINITECARBON)

Comment:

Appendix E – "Offset Project Activities Within the Scope of Regulatory Compliance Evaluation"

We commend ARB staff for providing additional flexibility regarding procedural or administrative violations that do not impact the integrity of the ARB offset credits. Since this addition focuses on the resolution of noncompliance issues, we would appreciate future clarity from ARB staff around when such issues will be considered “resolved.” (CLIMACTRESERV)

Comment:

§95973. Requirements for Offset Projects Using ARB Compliance Offset Protocols

Finite strongly supports the proposed amendment to §95973(b)(1) limiting the temporal scope of regulatory compliance for eligibility for forestry projects in the same way it has already done for mine methane capture, livestock and ODS offset protocol types. Regulatory compliance requirements should be enforced equitably across all project types. Everyone in the system – including project developers, regulated entities, and offset buyers – benefits from increased consistency, uniformity and equity across the offset market. (FINITECARBON)

Comment:

Regulatory Compliance

We support ARB’s proposed changes to the regulatory compliance provisions.

- We support the changes in § 95973(b)(1) that allow forestry projects to quantify the period of time that a project is out of compliance rather than automatically counting the entire reporting period for any instance of noncompliance. However, we encourage ARB to consider the recommendations of the California Forest Carbon Coalition (CFCC) regarding how the beginning and end of the period of non-compliance are defined. Given our experience developing projects throughout the country, we believe that ARB’s proposed amendments along with the recommendations of the CFCC provide important clarification while also being sufficiently general as to apply to jurisdictions outside of California. (NEWFORESTS)

Comment:

We'd like to express our strong support for the Cap-and-Trade Program, and in particular for the offset program, which is the most rigorous and robust offset program in the world. We appreciate your technical amendments on materiality and regulate -- regulatory compliance, and encourage you to continue improvements related to program implementation, efficiency, and transparency. We work with a range of landowners from Native American tribes to private forestland owners. And we've seen first hand how the offset program has provided a host of benefits, in addition to greenhouse gas reductions, from forest health improvements to economic opportunities

in rural communities. So we want to thank you for your efforts on this program and encourage you to further strengthen the program going forward. (NEWFORESTS2)

Comment:

We hope that you will support the Cap-and-Trade Program. Appreciate your help and look forward to your vote on this item. Thanks. (CFCC2)

Comment:

Forest offsets and offsets generally lead to real additional benefits, both for the environment and local communities. The second thing is I want to thank you and your staff for the good and hard work that you do. We know it's a tough -- a tough job, and we really feel like we've been treated fairly. And the third, and you've heard from our colleagues from the coalition, we hope you'll take a serious look at our proposed suggestions on how to improve the program and the offset project opportunities in a way that we think both achieve the pub -- underlying public benefit and make it usable for forest project operators. (URFC)

Comment:

Finite also supports the clarification on the scope of regulatory compliance in Appendix E, which allows offset projects to remain eligible for offset issuance as long as any noncompliance related to requirements regarding occupational health and safety regulations, statutes, or laws, or the timely submittal of periodic reports required by permits, regulations, statutes, or laws, during the reporting period, has been resolved prior to the submittal of a request for issuance of ARB offset credits. However, Finite would appreciate clarity regarding when such issues will be considered "resolved" for the purposes of satisfying this requirement. (FINITECARBON)

Comment:

Appendix E – “Offset Project Activities Within the Scope of Regulatory Compliance Evaluation”

We commend ARB staff for providing additional flexibility regarding procedural or administrative violations that do not impact the integrity of the ARB offset credits. Since this addition focuses on the resolution of noncompliance issues, we would appreciate future clarity from ARB staff around when such issues will be considered "resolved." (CLIMACTRESERV)

Response: Thank you for the support. With respect to several commenters' request for clarity on when noncompliance issues are considered resolved, due to the number of potential regulatory agencies (local, state, and federal) that could issue violations and the different practices these regulatory agencies use, it is not possible to have a universal definition of "resolved." CARB staff expects resolution will occur once the action that led to the regulatory noncompliance has stopped and

that any deficiencies have been rectified. This could be demonstrated by submitting any past due reports, or currently being in compliance with health and safety laws and regulations.

Ozone-Depleting Substance (ODS) Projects and Regulatory Compliance Changes

G-1.2. Comment:

It is common that regulatory bodies with jurisdiction over an offset project will issue notices of violation retroactively. Further, clear communication from the regulatory body documenting dates of non-compliance is not available in all instances. These factors complicate the determination of regulatory compliance for facilities hosting offset projects, in particular identification of the specific date and time that a facility falls out of and returns to compliance.

For these reasons, we support the proposed revisions above [commenter copied over the revision to section 95973(b)(1)(B)] because they provide means for ARB staff to determine dates of non-compliance when notification from the regulatory body lags the offset project reporting and verification process or is non-existent altogether. It is our interpretation that under the proposed amendments cited above, a facility could provide monitored data to ARB to demonstrate when offset project operations fulfilled or did not comply with relevant environmental and health and safety laws and regulations. Such documentation provided by the offset project facility would allow ARB to make a determination about the specific period of non-compliance during which the offset project is ineligible to receive credits.

Compliance offset projects play a crucial role helping ARB achieve its emission reduction targets for the State as well as incentivizing GHG emission reduction economy-wide. The proposed amendments to determining dates of non-compliance are necessary in order to reduce uncertainty amongst potential market participants and provide confidence to Offset Project Operators that they will be able to assess dates of non-compliance at the time of verification. §95973(b)(1)(B) as currently written potentially discourages participation in the Compliance Offset Program from facilities located in jurisdictions that do not routinely provide correspondence or documentation explicitly stating the dates of facility non-compliance. The proposed amendments above would create a level playing field for all offset project facilities wishing to participate in the Compliance Offset Program.

How the proposed amendments pertain to an ODS destruction facility. Under the Compliance Offset Protocol: Ozone Depleting Substances Projects (November 14, 2014), a destruction facility must demonstrate regulatory compliance for the duration of a destruction event. Any non-compliance at the facility that coincides with a destruction event may invalidate the offsets associated with the event. Because destruction facilities participating as offset project hosts also destroy numerous non-ODS material during their course of business, the potential for non-compliance is omnipresent and thus a

clear procedure is needed to determine dates of non-compliance if a violation is discovered.

Non-compliance at such facilities is typically determined from continuously monitored emissions data, as compiled in facility Title V emission reports, and submitted to the relevant regulatory agency on an ongoing basis. Regulatory bodies may aggregate violations from reported emissions exceedances into a single notice issued many months after such exceedances occurred and potentially after relevant offset project reporting and verification deadlines have passed. Further, such violations may not explicitly identify dates and times of non-compliance complicating the determination of whether any overlap ODS destruction events.

In this context, it is nearly impossible for the destruction facility to demonstrate regulatory compliance consistent with the standard that “the offset project is deemed to have returned to regulatory compliance” when “the relevant local, state, or federal regulatory oversight body determines that the project is back in regulatory compliance.” We support the proposed amendments to §95973(b)(1)(B) as a solution to this issue.

If accepted, the proposed amendments would allow an ODS destruction facility to provide ARB with air emissions reports provided to local regulatory bodies to demonstrate conformance (and non-conformance) with jurisdictional air quality and facility permit requirements.

If our interpretation of the proposed amendments is incorrect, we request that CARB include additional language in the proposed revisions or provide written clarification to confirm a process such as that outlined above for a destruction facility to demonstrate regulatory compliance would be permissible. The following sentence in the amendments could be augmented to explicitly identify Title V reporting as additional evidence that could be submitted to ARB to demonstrate that a facility has returned to regulatory compliance: *“Documentation should be dated, official correspondence, with the relevant regulatory agency, such as a consent decree, inspection report, or other such documentation, identifying that the project has returned to regulatory compliance.”*

Such revision will provide clarity to facilities offering ODS destruction services to the market and help to ensure that any destruction events undertaken and the associated offsets generated meet ARB’s standards for integrity in the Cap and Trade and Compliance Offset Programs. We encourage ARB’s efforts to make the Compliance Offset Program more accessible to market participants and welcome the proposed amendments in furtherance of this objective. (FIRSTENVIRO)

Comment:

With regard to Section 95973(b)(1)(E)(3), ACR supports the provision to remove from offset eligibility only those days during which a forest carbon project is in regulatory non-compliance. However, ACR suggests that CARB allow ODS destruction projects the same type of protections against undue loss of offsets accorded to livestock and mine

methane projects in Section 95973(b)(1)(E)(1) and forestry projects in Section 95973(b)(1)(E)(3). Voiding all ODS destruction that occurs under a Certificate of Destruction, as stated in Section 95973(b)(1)(E)(2) is overly punitive and unnecessary. Destruction facilities retain detailed records that would enable only ODS destroyed during a non-compliance event to be discounted from a project. (ACR)

Comment:

ODS OFFSETS

With regard to Section 95973(b)(1)(E)(3), IETA supports the provision to remove from offset eligibility only those days during which a forest carbon project is in regulatory non-compliance. However, IETA suggests that CARB allow ODS destruction projects the same type of protections against undue loss of offsets accorded to livestock and mine methane projects in Section 95973(b)(1)(E)(1) and forestry projects in Section 95973(b)(1)(E)(3). Voiding all ODS destruction that occurs under a Certificate of Destruction, as stated in Section 95973(b)(1)(E)(2) is overly punitive and unnecessary. Destruction facilities retain detailed records that would enable only ODS destroyed during a non-compliance event to be discounted from a project. (IETA)

Response: Thank you for your support.

For ODS projects it is not possible in most situations to remove days from a project. The official weights used to calculate GHG emissions reductions are taken at the beginning and end of the destruction as required by the protocol. Since there is not a weight taken immediately before and after the violation in most cases it is not possible to accurately calculate the emissions reductions that are ineligible for ARB offset credits. However, if the ODS container is on a calibrated weigh scale that meets all requirements of the protocol during destruction, then these weights can be used as the beginning and ending weights for a destruction event. The destruction events would be under multiple Certificates of Destruction, but could use the same composition analysis, since it is the same container. The destruction events can begin and end at any frequency (minute, hour day) as long as the weights are taken appropriately. This would result in destruction events that are in regulatory compliance since the entire period the project was out of regulatory compliance has been removed from the destruction event.

Support for Use of Offsets

G-1.3. Comment:

We are pleased that AB 398 codified the use of offsets in the Program and support CARB's efforts to promote the importance of well-managed forests, which were highlighted in the recently released report by the UN Intergovernmental Panel on Climate Change as critical to climate change mitigation efforts. Forests are key to limiting average global temperature rise as they provide one of the only readily

available, cost-effective means of directly removing and storing GHG emissions at scale, while also providing a host of additional benefits such as shading and cooling, wildlife and pollinator habitat and water filtration and storage capacity. (FINITECARBON)

Comment:

WSPA also strongly supports CARB's larger vision to expand the supply of national and international offsets to encourage greater global participation and large-scale natural lands GHG emission reduction and carbon conservation. We are encouraged that CARB is restarting positive conversations and potential rulemaking for tropical forest opportunities. We also look forward to continuing to work with CARB staff to improve the process to issue CA-certified offsets. (WSPA2)

Comment:

Phillips 66 supports the continued use of offsets as a necessary component of the climate program and an important cost-containment provision within the Regulation...

Phillips 66 also supports CARB's larger vision to expand the supply of national and international offsets to encourage greater global offset project development and large-scale natural lands GHG emission reduction and carbon conservation. We are encouraged that CARB is restarting positive conversations and potential rulemaking for tropical forest opportunities. (PHILLIPS66)

Comment:

SDG&E is appreciative of the continued support for Cap-and-Trade offsets as they provide real, additional, quantifiable, and verifiable GHG emission reductions. Offset projects can provide reductions from uncapped sectors like agriculture and forestry, and in some cases, can be achieved at lower cost than other GHG emission reductions, reducing the overall cost of the Cap-and-Trade Program and thereby its economic impact on California consumers. (SDG&E)

Comment:

The Legislature's decision to codify offset use recognizes that offsets benefit the Program and California's environment and economy in both rural and urban areas throughout the state. Therefore, implementing the program in a way that fully utilizes the new statutorily authorized limits is key to keeping with legislative intent for the Program to have post 2020 cost-containment provisions. The staff report again highlights some of the major benefits of the offset program—cost containment and production of real reductions outside of capped sectors. VERA concurs with these staff positions. (VERA, 3DEGREES)

Comment:

And as part of that [AB 398 process] work, we worked with the legislature, and they codified, for the first time, the use of offsets. So now there's a statutory mandate to have offsets in the program, which we think is great. We think that maximizing the use of offsets, as presented in the slide show today, helps with cost containment. And offsets, just a reminder, are real, quantifiable, enforceable, verifiable, and permanent reductions outside of cap sectors. I think you're going to hear from many folks today that are supportive of offsets. We are supportive. (VERA2)

Comment:

VERA strongly supports California's efforts to reduce statewide GHG emissions through a market-based program, including the use of high-quality carbon offsets. (VERA, 3DEGREES)

Comment:

We strongly support California's efforts to reduce GHG emissions through a market-based program, including the use of high-quality carbon offsets. (FINITECARBON)

Comment:

We commend ARB for its efforts to improve and strengthen the cap and trade program, including the continued use of high-quality offsets for the purposes of cost-containment, GHG reductions outside of the capped sectors, and a host of environmental and economic co-benefits. (NEWFORESTS)

Comment:

Direct Environmental Benefits (DEBS)

CLFP supports California's use of a market-based program, including the use of high-quality carbon offsets in the cap-and-trade program. CLFP views offsets as critical component in achieving the statutory GHG emission reductions at the lowest cost possible – as mandated under California's climate legislation. And, while disappointed that available percentages were reduced for post-2020, nevertheless CLFP urges CARB staff to continue to work to maximize the benefits of offsets' ability to contain costs and support the development of new innovative projects and technologies.

However, CLFP cautions CARB not to lose sight of the cost-containment aspects of offsets when addressing DEBS. A direct environmental benefit in the State should be viewed broadly in order to maximize the benefits to the program while recognizing the science behind the fundamental nature of GHGs and global climate change.

CLFP believes maximizing offsets will have a direct positive benefit within California, including within designated disadvantaged communities, by promoting economic development associated with new and expanding offset projects within the state, and mitigating the cost impacts of the program. (CLFP)

Comment:

We are pleased that AB 398 codified the use of offsets in the Program, yet at the same time must acknowledge that halving the prior offset utilization limits will result in increased costs to California businesses, consumers and ratepayers. We continue to support CARB's efforts to maximize the benefits of offsets to contain costs and support the development of new innovative projects and technologies on a scale not achievable through command and control regulations. We believe an effective component to help accomplish the Programs' lofty goal—establishing a program in which other jurisdictions can participate—is to maximize the ability of entities to use offsets under the new AB 398 parameters.

VERA members are fully committed to the fundamentals of environmental integrity, ensuring that offsets are real, quantifiable, permanent, verifiable, additional and enforceable GHG reductions, as required under the Program. There are many provisions in this proposed regulatory package that VERA strongly supports. Our comments below highlight those issues as well as some outstanding concerns we have [subsequent comments addressed elsewhere herein]. It should be highlighted up front that maximizing offsets will have a direct positive economic and environmental benefit within California, including within designated disadvantaged communities.

We have been an active participant in this rulemaking process and previously submitted detailed comments.^{467,468,469}

VERA stands by those recommendations, incorporates them by reference in this comment letter and would like to provide additional comments based on staff's 45-Day package proposal...

VERA has been working with a multitude of other stakeholders, including non-offset developers, that have previously submitted comments in support of offsets during the informal rulemaking process.⁴⁷⁰ These comments highlighted the many diverse reasons to support the offset program. Many commenters presented supporting data and well reasoned arguments on behalf of offsets—VERA supports these well-reasoned positions.

[CARB note: The three previously submitted comments letters referenced in the footnotes focus mainly on expanding the number of projects that qualify as providing DEBS. The March letter expressed general support for the use of offsets in the Program; for the quantitative usage limits codified by AB 398; and for acceptance that any project which can show a direct reduction of an air pollutant, or which benefits waters of the state, has direct environmental benefits to the state. The letter expressed opposition to CARB retroactively evaluating previously issued offsets for DEBS. The

⁴⁶⁷ <https://www.arb.ca.gov/lists/com-attach/1219-ct-4-26-18-wkshp-ws-UWRVfiZmVTYGLQQ1.pdf>

⁴⁶⁸ <https://www.arb.ca.gov/lists/com-attach/37-ct-6-21-18-wkshp-ws-V2ABKgMwUDMCKQc2.pdf>

⁴⁶⁹ <https://www.arb.ca.gov/lists/com-attach/35-ct-3-2-18-wkshp-ws-UWIGLVJiA2YLIAMy.pdf>

⁴⁷⁰ <https://www.arb.ca.gov/lispub/comm2/bccommlog.php?listname=ct-6-21-18-wkshp-ws>

letter requested that CARB update invalidation provisions, update regulatory compliance requirements, and improve administrative efficiency of the Compliance Offset Program. Finally, the letter recommended that CARB review and update existing offset protocols independently of the Offset Task Force's mission to promote new in-state protocols.

The May letter expressed general support for the use of offsets in the Program; for the quantitative usage limits codified by AB 398; and for acceptance that any project which can show a direct reduction of an air pollutant, or which benefits waters of the state, has direct environmental benefits to the state. The letter expressed opposition to CARB retroactively evaluating previously issued offsets for DEBS. The letter requested that CARB update invalidation provisions and regulatory compliance requirements. Finally, the letter made specific recommendations for livestock, forestry, mine methane, and ODS projects as well as administrative efficiency of the Compliance Offset Program.

The July letter reiterated general support for the use of offsets in the Program; for the quantitative usage limits codified by AB 398; and for acceptance that any project which can show a direct reduction of an air pollutant, or which benefits waters of the state, has direct environmental benefits to the state. The letter also expressed support for proposed changes to regulatory compliance requirements for forestry projects and requested that CARB consider a similar approach for all offset protocols. The letter expressed concern about proposed regulatory language that would prohibit GHG emission reductions for which an offset project is receiving credits from qualifying the project to meet the DEBS requirement. The letter also expressed concern about retroactively evaluating previously issued offsets for DEBS. Finally, the letter requested that CARB update invalidation provisions.

None of these letters were submitted during the formal 45-day comment period, and as such CARB staff is not required to respond to these comments here. No further response is required. However, CARB staff would like to note that issues raised by the commenters are addressed in Responses to 45-day Comments G-1.6, G-1.8, G-1.9, G-3.1, G-3.2, G-3.4, G-3.20, G-7.1, and G 9.1.] (VERA, 3DEGREES)

Comment:

Our comments are focused on the cost-containment aspects of the Proposal, including... new rules surrounding the use of offsets...

CIPA supports CARB's approach to offsets in this regulatory package. We believe it is a reasonable approach to implementing the provisions of AB 398. The staff report accompanying this proposal reaffirms some of the major benefits of the offset program, including cost containment and creation of real reductions outside of regulated sectors. (CIPA)

Comment:

PG&E generally supports Staff's proposal on offsets and offset program implementation. We appreciate Staff's recognition of the important cost-containment and compliance flexibility role that offsets play in the market. (PG&E)

Comment:

VERA is supportive of the following staff proposals...

- The construction of § 95854(b)—Quantitative Usage Limit on Designated Compliance Instruments— Including Offset Credits (VERA, 3DEGREES)

Comment:

ACR supports the following staff proposals...

- Construction of section 95854(b), Quantitative Usage Limit on Designated Compliance Instruments—Including Offset Credits. (ACR)

Comment:

We specifically support CARB's proposals on the following offset-related issues...

- The construction of § 95854(b) – Quantitative Usage Limit on Designated Compliance Instruments – Including Offset Credits (JOINTELECUTILS)

Comment:

The GUG also supports the consensus positions of the California electric utilities as outlined in the Joint-Utility Group letter on the following topics:... 3) Support of ARB's approach to Offset provisions. (JOINTGASUTILS)

Comment:

ACR joins with numerous stakeholders in supporting an ambitious cap-and-trade program that tackles planet-warming emissions across all sectors. Emissions reductions outside the cap, as offsets, generate revenue and jobs for rural, agricultural, disadvantaged, and Native American communities, while lowering costs to consumers.

The Intergovernmental Panel on Climate Change's recent special report, *Global Warming of 1.5 °C*, made clear the drastic changes needed in limited time.⁴⁷¹ The scope and severity of the challenge necessitate that no emissions reduction opportunities be left off the table and that we tackle short-lived climate pollutants (SLCPs) to buy time to implement long-term solutions. Offsets, therefore, play a vital role. They reach beyond sectors covered under the cap-and-trade program and offer opportunities to address methane and fluorinated gases that have amplified 20-year

⁴⁷¹ <http://www.ipcc.ch/report/sr15/>

global warming potentials. We simply do not have the luxury to neglect readily available climate action...

Executive Order to Achieve Carbon Neutrality

By committing the State to carbon neutrality by 2045, with Executive Order B-55-18, Governor Brown reaffirmed California's global climate leadership.⁴⁷² Notably, the Executive Order highlights the necessary role of sequestration in forests, soils, and other natural landscapes to achieve this goal. As a result of the offsets program and OPRs, the protocols and the infrastructure for quantification and verification are largely in place. Offsets have played an important role in California's progress to date, and ACR is ready to continue the journey to reach carbon neutrality. (ACR)

Comment:

IPRE commends CARB for its leadership in combatting climate change. Its Cap-and-Trade Program serves as an important national and international model. The offsets program enables this model to be more than an inspiration: it provides a means for communities outside of the state – including EJ communities – to partner with California in the global fight against climate change. By creating incentives for others to partner with California, CARB's offset program has been a critical component of California's global leadership on climate issues. [The commenter included this text twice, once in their main comment and once in their Exhibit B.] (IPRE)

Response: Thank you for the support.

General Support but Concern with AB 398 Limits

G-1.4. Comment:

We are pleased that offsets will continue to play a role in the program as stipulated by AB 398; however, at the same time we must acknowledge that halving the prior offset utilization limits will result in increased costs to California businesses, consumers and ratepayers. Furthermore, California's climate leadership and influence in jurisdictions and industries that are more reluctant to act on climate will be hampered given the requirement that a portion of offsets used provide Direct Environmental Benefits to the State. (BLUESOURCE)

Comment:

I'd also like to thank staff for preparing amendments that were largely in support of. My company, Bluesource, we've been involved in developing projects for the program since its inception. We've worked on 26 projects so far that have generated around 10 million tons of climate benefit. We're really proud of that.

⁴⁷² <https://www.gov.ca.gov/wp-content/uploads/2018/09/9.10.18-Executive-Order.pdf>

We've worked really hard, and we've been able to hire folks in state. These are current and future climate leaders, folks that are passionate on this issue.

And based on that, I want my -- my comments are going to focus on largely the DEBS issue.

And if we take a step back for a second, it's been -- always been my understanding that the program was designed, California's program, to extend beyond California's borders in terms of inspiring change, the concept of climate diplomacy. And I think we need that more than ever.

I mean, you step outside this building and take a breath, and you have a frightening reminder of the need for climate diplomacy right now. And so also the California program was based on science based -- it's a science-based program.

And within that is the idea that a reduction that takes place anywhere creates a benefit everywhere. I firmly believe that.

And for us, the view of a reduction in offset utilization is not only going to increase cost to ratepayers, but it's going to hamper the ability to inspire others to follow and create these types of projects. (BLUESOURCE2)

Response: Thank you for the support. With respect to the commenter's concerns with the lower offset usage limits and the direct environmental benefits requirements, CARB staff notes that the amendments align with the statutory requirements of AB 398. CARB staff also notes that as indicated in the ISOR (pp. 49-55), offsets continue to play an important role in the Program, and modifications to the regulation were made to comport with the new limitations in AB 398. No further response is required.

General Offset Support

G-1.5. Comment:

The Reserve is supportive of the changes made by ARB staff to improve operation of the Compliance Offset Program. (CLIMACTRESERV)

Comment:

G. Changes to Offset Policies

SMUD supports the comments provided by The Verified Emission Reduction Association (VERA), and like VERA appreciates the opportunity to continue working with the Board and CARB staff on this component of the Cap and Trade program.

SMUD has previously supported offsets as a critical cost-containment tool, and more importantly, as a method to include non-capped sectors and other jurisdictions in California's leading efforts to address Climate Change.

SMUD agrees with VERA in supporting the following staff proposals:

- Definition of Direct Environmental Benefit and Ceiling Price Unit
- The construction of § 95854(b)—Quantitative Usage Limit on Designated Compliance Instruments—Including Offset Credits
- Determination that in-state projects using CARB-approved offset protocols meet the DEBS definition
- Inclusion of a pathway for out-of-state offsets to demonstrate Direct Environmental Benefits to California
- Inclusion in § 95977.1(b)(3)(M) of a materiality provision
- Revised provisions for regulatory compliance in § 95973(a)(2)(C)
- Appendix E’s recognition of the relationship between offset compliance and occupational and health and safety regulations (SMUD)

Comment:

§ 95987. Offset Project Registry Requirements

- We support the addition of a fourth project status of “Monitored” if ARB offset credits have been issued to the project, but no further ARB Offset credits will be issued and the project is still required to monitor, report, and verify the permanence of the GHG removal enhancements. Forest projects that are merely monitoring the GHG reductions that have already been achieved for 100 years should be eligible for a unique status that allows for lower intensity and lower cost monitoring and verification requirements over the long time horizons required by the Protocol, perhaps with the assistance of remote sensing technology which is rapidly decreasing in cost as of this writing. (NEWFORESTS)

Comment:

We submitted comments about DEBS. We're supportive of the statutory language being used. We're supportive of some of the other technical changes that are being made for materiality and regulatory conformance. (VERA2)

Comment:

First, I simply want to echo the comments by several industry folks regarding the excellent work that's been done on offsets... (CHEVRON)

Response: Thank you for the support.

With respect to the commenter supporting a project status of “Monitored,” the comment requests lower cost and lower intensity monitoring and verification requirements, suggesting the use of remote sensing. This portion of the comment is outside the scope of the current rulemaking. Monitoring and verification requirements are found in sections 95976 and 95977.1 of the

Regulation, respectively, as well as the Compliance Offset Protocol. The relevant portions of these sections as well as the Compliance Offset Protocols were not part of this rulemaking. However, CARB staff would note that under certain situations, the verification frequency may be reduced for projects that could be classified as “Monitoring” (see section 95977(c)).

Program Improvements

G-1.6. Comment:

Administrative efficiency

We appreciate ARB’s efforts to increase efficiency in administration of the offsets program, and we encourage additional improvements in this area.

§ 95987. Offset Project Registry Requirements and § 95977.1. Requirements for Offset Verification

- We support the proposed changes to rely on the Offset Project Registries (OPRs) appropriately, particularly for: 1) reviewing the documentation from the third-party verification and maintaining an issues log from their review, and 2) submitting information related to a project’s request for issuance of ARB offset credits. Currently, there is substantial duplication of effort between the third-party verification, the OPR’s review and ARB’s review. This duplication of effort leads to inefficiencies, delays in review, regulatory uncertainty and increased cost of participation. We encourage ARB to rely on accredited third-party verifiers and approved offset project registries as the primary and secondary lines of review. (NEWFORESTS)

Comment:

3. CARB Offset Efficiency Improvements: We suggest CARB work towards greater efficiency and transparency in administration of the offsets program by 1) moving to a risk-based review process that reduces the administrative burden and staff time required to review projects without sacrificing quality, 2) relying more heavily on approved and accredited Verification Bodies and Offset Project Registries for project review assistance, and 3) making offset project guidance transparent and available to all program participants. (CFCC)

Comment:

Program Efficiency

The regulatory package attempts to update some of the more onerous administrative aspects of offset approval and issuance. Bluesource is appreciative of this effort, but believes more can be done.

Bluesource believes there are a number of steps CARB can take to make the offset program less costly, less time-intensive for staff, more efficient and more transparent. To that end, we offer the following program suggestions for your consideration:

- Rely on accredited third-party verifiers and approved offset project registries as the primary and secondary lines of review.

These administrative efficiencies would benefit both CARB, offset developers and the market waiting for approvals of contracted projects. Bluesource recognizes that some improvements have been made on a case-by-case basis, but these recommended improvements should benefit the program systemically. (BLUESOURCE)

Comment:

Offset Project Review Efficiency

- We encourage ARB to maintain the same high level of rigor in offset project review, while achieving efficiencies in the review process by adopting a risk-based approach to review. CARB should focus limited staff time on high risk areas that could lead to material impacts on credit issuance while reducing review time when risk is low. (NEWFORESTS)

Comment:

Program Efficiency

Bluesource believes there are a number of steps CARB can take to make the offset program less costly, less time-intensive for staff, more efficient and more transparent. To that end, we offer the following program suggestions for your consideration:

- Reduce review cycle time by adopting a risk-based review to increase efficiency without sacrificing quality.
- Increase review process transparency and communicate guidance to all program participants to reduce repetitive inquiries. (BLUESOURCE)

Comment:

Program Transparency

- Currently, project developers and verifiers seek guidance from ARB directly on specific project-related questions, but that guidance is not made public or shared with other program participants. We encourage ARB to increase review process transparency and communicate guidance to all program participants to reduce ARB staff time while ensuring ARB's interpretations and standards are uniformly implemented. (NEWFORESTS)

Comment:

Program Efficiencies

The regulatory package attempts to update some of the more onerous administrative aspects of offset approval and issuance. VERA is appreciative of this effort, but believes more can be done. VERA believes there are a number of steps CARB can take to make the offset program less costly, less time-intensive for staff, more efficient and more transparent. To that end, we offer the following program suggestions for your consideration:

- Reduce review cycle time by adopting a risk-based review to increase efficiency without sacrificing quality. CARB should focus limited staff time on high risk areas that could lead to material impacts on credit issuance while reducing review time when risk is low.
- Rely on accredited third-party verifiers and approved offset project registries as the primary and secondary lines of review.
- Increase review process transparency and communicate guidance to all program participants to reduce ARB staff time while ensuring ARB's interpretations and standards are uniformly implemented.

These administrative efficiencies would benefit both CARB, offset developers and the market waiting for approvals of contracted projects. VERA recognizes that some improvements have been made on a case-by-case basis, but these recommended improvements should benefit the program systemically. (VERA, 3DEGREES)

Response: Thank you for the support for the adopted amendments that improve program efficiency.

With respect to the suggestions on administration, offset guidance, and relying more heavily on registries and verification bodies, no changes were proposed in this rulemaking to modify the level of regulatory oversight or review that CARB will continue to maintain over the compliance offset program. As such, these comments are outside the scope of this rulemaking. CARB appreciates the commenters' suggestions as a means to further improve program implementation efficiency and will continue to assess these suggestions.

Partial Issuance

G-1.7. Comment:

§ 95980.1 Process for Issuance of Registry Offset Credits

- Currently, a project may request partial issuance of ARB offset credits for a reporting period, but this same flexibility is not available to projects requesting issuance of registry offset credits. Therefore, a project is required to pay credit issuance fees to the Offset Project Registry on the entirety of a reporting period's credits, even if it will only be requesting issuance of a portion of the eligible credits. We recommend adding to Section 95980.1 a new subsection (e) that

mirrors the language currently in Section 95981.1(b)(5)(a) that states, “An Offset Project Operator or Authorized Project Designee may request that only a portion of the eligible GHG reductions and removal enhancements for the applicable Reporting Period be issued ARB Registry offset credits ~~in the request for issuance.~~” (NEWFORESTS)

Response: The adopted amendments did not make any modifications to section 95980.1, nor was this section included in the Notice for the rulemaking. As such, the comment is outside the scope of this rulemaking and no further response is necessary.

Invalidation Provisions

G-1.8. Comment:

Update to the Invalidation Provisions

VERA believes the time is ripe for more substantial changes to the invalidation provisions of the Regulation. California offsets have proven to be highly reliable sources of real, additional, quantifiable, permanent, verifiable and enforceable GHG emission reductions. The current invalidation framework of buyer liability limits offset usage for all but the largest entities, thus raising the costs of the program. Given the renewed push for new in-state offset protocols, updating these provisions can be an important consideration in increasing demand for such new developments.

California should consider updating the framework for invalidation such that invalidations due to fraud are covered by seller liability, and invalidations due to material overstatement and regulatory nonconformance are covered by an Environmental Integrity Account or “buffer pool.” VERA has previously commented on this issue and looks forward to addressing this in rulemaking in the near future.

Having a clear and simple mechanism to mitigate risks associated with invalidation should make it easier for stakeholders to participate in the offset market, thus stimulating the development of new offsets projects inside and outside of California and removing an obstacle to access the cost containment benefits provided by emissions reduction projects. VERA understands this change is not anticipated in this rulemaking, but encourages CARB to address at its earliest possible time. (VERA, 3DEGREES)

Comment:

The emphasis on in-state projects requires a new review of the regulations regarding offset invalidation. California offsets have proven to be reliable, eligible, real sources of enforceable GHG emissions reductions. Unfortunately, they are only available to obligated entities that can carry the risk of buyer liability. Shell Energy believes ARB must update the offset invalidation provisions to clearly assign seller liability in the event of fraud while providing a “buffer pool” or environmental integrity account to cover invalidation associated with material overstatement and regulatory non-conformance.

Establishing a mechanism that provides transparency and assigns liability according to specific types of invalidation will increase demand resulting in the development of more offset projects, both in-state and out-of-state. It is time to update the offset invalidation to ensure all obligated entities have access to this important cost containment product.

Finally, Shell Energy appreciates ARB's acknowledgement that offset projects should not be subject to invalidation for non-GHG related occupational health and safety violations that have no impact on the validity of the offsets themselves. ARB must be more specific, however, and include both violations of the Occupational Health and Safety Administration and the Federal Mine Safety and Health Act as well. ARB protocols specifically recognize projects that capture and destroy methane in abandoned mines; clarifying the language to include both OSHA and MSHA violations in Appendix E is reasonable and should be clarified...

Shell Energy supports Staff's efforts to clarify and narrow the types of activities that could render an offset project invalid. Offset project developers need certainty as they initiate projects and programs that meet the DEBS offset eligibility criteria. Offset project developers also require certainty as to the actions that would cause an offset project to be determined invalid. (SHELL)

Comment:

Invalidation

Bluesource believes it is time for invalidation to be revisited in a substantial way as the current methods of replacing invalidated credits drastically limit the cost containment benefits of the offsets program. This will be more and more important as the cap declines more aggressively beyond 2020. Having a clear and simple mechanism to mitigate risks associated with invalidation should make it easier for stakeholders to participate in the offset market, thus stimulating the development of new offset projects inside and outside of California and removing an obstacle to access the cost containment benefits provided by emissions reduction projects. Bluesource understands this change is not anticipated in this rulemaking but encourages CARB to address at its earliest possible time.

Specifically, Bluesource recommends the formation of an Environmental Integrity Account (EIA) comprised of 3% of all offsets issued. This EIA should be used to replace invalidated credits for events of invalidation resulting from material overstatements and events of regulatory nonconformance. Sellers, specifically the OPO or APD, should be responsible for invalidations related to the double-selling of credits into CARB's program and another crediting program, but in no other event should any market participant (the buyer or the seller) bear the burden of replacing invalidated credits, as that would defeat the purpose of the EIA.

With respect to the current system of statutory limitations on invalidation, Bluesource believes the process of double verifications to reduce these periods from 8 to 3 years

places an unnecessary burden on CARB staff and offset developers alike. We believe these double verifications are of questionable value given the highly robust review completed by CARB staff following verifier and OPR reviews. This, in conjunction with the extremely low percentage of offsets invalidated or brought under formal invalidation investigation (roughly 0.1% of the offset credits issued to date), leads us to the conclusion that double verifications to reduce the invalidation period from 8 to 3 years are an unnecessary part of the program that does not contribute to program integrity. Instead, all offset credits issued should initially have a 3-year invalidation period. (BLUESOURCE)

Comment:

3. The Regulation's Invalidation Provisions Should Be Revised

On Slide 38 of its presentation at the April 26 Workshop, CARB invited stakeholder input on “[r]evising invalidation provisions to further narrow types of activities or actions that could result in an invalidation.” In response to a question posed by IPRE during the workshop, CARB staff clarified that it invited input not only on narrowing the invalidation provisions but also on reconsidering the Buyer Liability approach to invalidation altogether. Staff expressed particular interest in getting input on these issues as they relate to forest offset projects.

IPRE supports and endorses the May 10 comments of the California Forest Carbon Coalition. Many forest offset projects are on or are part of larger tracts of forest lands where timber is harvested. Like California, many states have extensive timber harvesting regulations, and thus minor infractions of environmental, health and safety (“EHS”) regulations are not unusual on forest lands. These NOV’s may have nothing to do with a forest offset project on or a part of these lands and yet under the current language of the Regulation’s invalidation provisions such NOV’s may result in the offsets generated by those projects being invalidated. That can be a particularly devastating result for forest offset projects because – unlike, say, ODS projects – the vast majority of a forest project’s offset credits are issued at one time. If an unrelated NOV happens to occur during the same narrow period, virtually the entire project’s offsets could be invalidated.

This same concern extends to other types of EHS regulations. We are aware of at least one significant forest offset project in Kentucky that was registered with CARB but recently was abandoned due to concerns about potential invalidation. In that instance, after having made significant investments in the forest offset project, the forest owner could not obtain adequate assurance that the offsets generated by its project would not be invalidated in the event that mining operations were conducted beneath the surface that might give rise to EHS violations (mines are subject to many regulations such that minor NOV’s are not unusual) – even though the two activities would be wholly unrelated, one above ground and one below. Thus, in this particular instance, with the collapse of the forest project, the owner of the land will have little choice but to pursue

coal mining at its property. That surely is not a result that California's climate policies are intended to further. (IPRE)

Response: As the commenters note, the modifications to the invalidation provisions proposed as part of this rulemaking were narrow in scope, and the requested modifications would be more appropriately considered as part of a future rulemaking. As such, these comments are outside the scope of the current rulemaking. CARB staff would need to assess the requested modifications to determine if they could be considered in a future rulemaking. Additionally, CARB staff notes that the buyer liability requirement in the Regulation continues to ensure the integrity of the offsets program and that, despite some of the concerns raised by commenters, CARB has issued over 143 million offset credits to date.

CARB staff disagrees that a change is necessary in Appendix E. Appendix E contains a general reference to any violation of "occupational health and safety regulations, statutes, or laws" issued by any agency. The limitation on the regulatory compliance evaluation applies to all health and safety violations regardless of issuing agency. Thus, there is no need to identify OSHA or the federal Mine Safety and Health Administration (MSHA) specifically.

Compliance Offset Protocol U.S. Forest Projects

G-1.9. Comment:

Compliance Offset Protocols

4. Update the Existing Forest Offset Protocol:

We encourage ARB to include in the 2019 rulemaking the update of existing protocols as well as the adoption of new protocols.

- However, we also believe that the existing set of approved offset protocols can and should be modified to encourage greater adoption and more in-state GHG reductions. We encourage ARB to consider updates to the existing Forest Offset Protocol, which has comprised the majority of ARB Offset Credits issued to date. Changes to the Forest Protocol to reduce uncertainty and cost would help improve uptake among smaller landowners, Native American Tribes and California forest owners, thus increasing the volume of offsets available for compliance use while providing associated environmental and societal co-benefits. (NEWFORESTS, CFCC)

Comment:

B. Example: U.S. Forest protocol

In order to approve a compliance-grade offset protocol, CARB goes through an extensive public stakeholder process. The end result is a protocol that has been scrutinized by Board staff and stakeholders and subsequently approved by the Board itself. The way that offset projects earn credits under approved protocols is by meeting the protocol's eligibility criteria and following its approved methodologies for calculating avoided or reduced greenhouse gas emissions. The protocols attempt to ensure that the accounted for emissions are semi-permanent: for example, the U.S. Forestry Protocol requires that projects have a life of 100 years; for avoided conversion projects (projects that avoid converting forestry land to another use), the owner must record a conservation easement against the property; and offset providers must monitor the projects by visiting the sites every six years. If the offset project experiences a reversal, resulting in the release of carbon that was supposed to remain sequestered, there is a compensation rate that applies to intentional reversals, requiring compensation of allowances based on the number of years the project remained in compliance; there is also a buffer fund for unintentional carbon releases caused by events such as drought and wildfire.

The offsets subcommittee is interested in whether any new information and feedback could or should lead to any changes to the offset protocols.

Given the fact that the U.S. Forest protocol is responsible for three quarters of the offsets issued to date, it may make sense to first consider these issues in the context of the U.S. Forest protocol. For example, under the U.S. Forest protocol, a portion of the credits that would otherwise be awarded to offset projects are set aside in a buffer pool to protect against the risk of "unintentional reversal"—the possibility that fire, drought, disease, or other unexpected problems release the carbon that is stored in a credited forest. In light of the record fire season in California this year and last, is the size of the buffer pool sufficient to cover our best biophysical understanding of reversal risks in California? Across the West?...

E. Longer term recommendations

- 1) As described above, we recommend that CARB determine whether the buffer pool amount included in the U.S. Forestry offset protocol is sufficient to protect against unintentional reversals given the recent experiences with drought and wildfire. (IEMAC)

Comment:

Similarly, the U.S. Forest protocol makes assumptions about the extent to which emissions will "leak" from offset projects. Take an avoided conversion project, for example (the protocol also covers reforestation projects and projects that improve forest management). The idea is that if a carbon-rich forest is protected to store carbon, rather than harvested to produce timber or cleared for some other land use, some share of the timber production will shift to another location, resulting in a reduction in the GHG

benefits of the reductions or avoided emissions at the credited project (see Leakage subcommittee report for more detail).

The U.S. Forest protocol assumes that for Improved Forest Management projects, 20% of calculated project-level benefits will leak (CARB, 2015: 69-70 (see “Secondary Effects” in Equation 5.10)). CARB’s protocol is based on the Climate Action Reserve’s voluntary forest offset protocol, Version 3.3. Last year, the Climate Action Reserve updated its leakage factor for Improved Forest Management projects. The previous version of the Climate Action Reserve’s forest protocol, Version 3.3, used a leakage factor of 20% for Improved Forest Management projects (CAR, 2012: 62 (see “Secondary Effects” in Equation 6.13)). In the new Version 4.0 of the Reserve’s protocol, however, the leakage factor for Improved Forest Management projects can now be as high as 80% for improved Forest Management Projects (CAR, 2017: 62-63 (see “Secondary Effects” in Equation 6.10)).

Leakage factors are a controversial part of forestry offsets and, in fact, the Environmental Commissioner of Ontario recently recommended that Ontario not pursue forest offset credits (Environmental Commissioner of Ontario, 2018: 144-145) because of concerns about the evidentiary basis for the leakage factor. Some peer reviewed studies suggest that a leakage number that is significantly higher and perhaps closer to 80% may be appropriate (Wear & Murray, 2004: 328; Gan & McCarl, 2007: 430). The Environmental Commissioner’s report also cited evidence that in some cases lower leakage rates similar to the U.S. Forest protocol’s number may be appropriate, but noted that the evidence supporting these lower rates excludes international leakage effects and that inclusion of international leakage effects significantly increases leakage estimates in other contexts (Environmental Commissioner of Ontario at 145, citing a study of Pacific Northwest leakage rate estimates). While the subcommittee has not had time to independently survey the academic literature on leakage rates, we note that review studies identify a wide range of leakage rates that range close to zero to more than 90% (Siikamäki et al., 2012: 11). At least in this review, lower leakage estimates are associated with project- or country-level analysis, whereas higher estimates are associated with regional or global analysis.

Given that the U.S. Forest protocol is the largest of the protocols in terms of credits issued, it would be helpful to have a better understanding of the scientific basis for leakage factors and the temporal accounting between reductions that are credited, emissions that leak, and actual physical emissions reductions or avoided emissions that take place. It would also be helpful to know if CARB is considering revising the protocol to reflect the Climate Action Reserve changes. The subcommittee recognizes, however, that leakage factors may be highly contextual to each individual project and therefore empirically difficult to estimate. Nevertheless, if reliance on the protocol continues to be large, additional information would be useful to understand whether and to what degree leakage is occurring, as well as to evaluate whether or not credits under this protocol can be reliably deemed “quantifiable” pursuant to state law...

E. Longer term recommendations...

- 2) We also recommend that CARB either conduct or solicit research to determine whether the leakage rate for avoided conversion projects in the forestry protocol is appropriate.
- 3) We further recommend that CARB consider whether it should amend the U.S. Forest Offset Protocol to change the leakage factor for Improved Forestry Practices to be consistent with recent changes to the Climate Action Reserve Forestry Protocol.

[The original comment, which includes a reference list, is available at <https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=ct2018>.] (IEMAC)

Comment:

Attachment 1: October 12, 2017 Workshop Comments

3. Offsets

Protocols for carbon sequestration projects should also include reserves and/or discounts that appropriately reflect the risk that sequestered carbon will be lost to natural or man-made phenomenon. (NEXTGEN)

Comment:

Attachment 1: October 12, 2017 Workshop Comments

3. Offsets

Finally, offset protocols should reflect sustainability criteria that prevent environmental harm. (NEXTGEN)

Comment:

- Credits issued under the U.S. Forest Projects protocol account for about three-quarters of the offsets market. The subcommittee recommends additional review of this protocol's crediting methods to reflect technical concerns related to leakage, the timing of credited reductions, and the risk of unintentional reversal due to fires and other exogenous causes... (IEMAC)

Response: The current rulemaking did not propose any changes to any of the compliance offset protocols, including the Compliance Offset Protocol U.S. Forests Projects (Forest Protocol). As such, these comments are outside the scope of the current rulemaking. Notwithstanding this, CARB staff continues to note that it will make updates to the existing compliance offset protocols based on new information and as timing allows. With respect to concerns on leakage and reversals, CARB staff will assess updated information, including more recent leakage assessments from voluntary protocol updates, when proposing changes to the Forest

Protocol as part of a future rulemaking. Any potential changes would be subject to a full public rulemaking process.

Concerns with Regulatory Compliance Revisions

G-1.10. Comment:

Additionally, VERA has concerns relating to §95973(b)(1)(E)(1), which addresses how days are removed when a project is out of regulatory compliance. For determining GHG emission reductions (“ER”) to remove due to a period of noncompliance, the language currently adjusts only half of the emission reductions equation, resulting in stated ERs that are not accurate. In order to properly remove a period of noncompliance, the days must be removed from the entire ER model--both the baseline and project emissions. Removing days only from the baseline while continue to report project emissions is not only overly punitive but also results in an incorrect accounting of the ERs unencumbered by the noncompliance. The efforts we make to report true, accurate and complete emission reductions become meaningless if we utilize this type of accounting. (VERA, 3DEGREES)

Comment:

Recommended update to how days are removed when a project is out of regulatory compliance

3Degrees has concerns relating to §95973(b)(1)(E)(1), which addresses how days are removed when a project is out of regulatory compliance. This section appears to have been opened as part of this rulemaking.⁴⁷³

For determining GHG emission reductions (“ER”) to remove due to a period of noncompliance, the language currently adjusts only half of the emission reductions equation, resulting in stated ERs that are not accurate. In order to properly remove a period of noncompliance, the days must be removed from the entire ER model--both the baseline and project emissions. Removing days only from the baseline while continue to report project emissions is not only overly punitive but also results in an incorrect accounting of the ERs unencumbered by the noncompliance. The efforts we make to report true, accurate and complete emission reductions become meaningless if we concede this type of accounting.

Take, for instance, this extreme but simplified case below (Table 1). Three months of noncompliance should result in the loss of three months’ worth of ERs, as shown on the left. However, removing only the baseline emissions while keeping in the project emissions, as shown on the right, would nullify the entire reporting period.

⁴⁷³ P.107-108 of proposed regulation.

Table 1. Comparison of ERs removed when baseline emissions (BE) and project emissions (PE) are removed (left) versus when only BE are removed to account for periods of noncompliance.

Month	BE	PE	ER	Month	BE	PE	ER
1	100,000	75,000	25,000	1	100,000	75,000	25,000
2	100,000	75,000	25,000	2	100,000	75,000	25,000
3	100,000	75,000	25,000	3	100,000	75,000	25,000
4	100,000	75,000	25,000	4	100,000	75,000	25,000
5	100,000	75,000	25,000	5	100,000	75,000	25,000
6	100,000	75,000	25,000	6	100,000	75,000	25,000
7			0	7	0	75,000	-75,000
8			0	8	0	75,000	-75,000
9			0	9	0	75,000	-75,000
10	100,000	75,000	25,000	10	100,000	75,000	25,000
11	100,000	75,000	25,000	11	100,000	75,000	25,000
12	100,000	75,000	25,000	12	100,000	75,000	25,000
900,000 675,000 225,000				900,000 900,000 0			

The language in §95973(b)(1)(E)(1) should be revised to state: "...the entire calendar day during which any portion of the project was not in regulatory compliance must be removed from the modeled or measured emission reductions." (3DEGREES2)

Response: CARB staff believes the current Regulatory requirements are the most appropriate. Greenhouse gas emissions from the project are still occurring during the period the project is out of regulatory compliance so the most conservative approach is to include them in project accounting. This conservativeness can be seen in the commenter's example. In the scenario on the left, project emissions (PE) from the period the project is not in regulatory compliance have been zeroed out resulting in calculated emissions reductions (ER) of 225,000. In the more conservative scenario on the right, the PE of 75,000/month remain in the ER calculations resulting in 0 ER. This is the most appropriate scenario because the PE are actually occurring during the time period the project is out of regulatory compliance

and should still be considered when calculating ER. Therefore, CARB staff declines to make the change.

G-2. Availability and Offsets Usage Limit

Support AB 398 Emissions Year

G-2.1. Comment:

AB398 requires CARB to reduce the limit on use of offset from 8% of an entity's compliance obligation under the current program to 4% in 2021 and increase the limit to 6% in 2026. Additionally, half of the offsets used by an entity after 2020 must be sourced from projects that provide "direct environmental benefits in the state (DEBs). WPTF supports the staff proposal to apply the new quantitative limits relative to the years in which emissions occur, rather than the year in which offsets are surrendered for compliance. This interpretation will align the offset limits to the actual compliance obligations. (WPTF)

Response: Thank you for the support.

Confusion on Triannual Surrender Quantitative Usage Limits

G-2.2. Comment:

2. Offset usage limits

AB 398 establishes an offset usage limit of 4% for 2021-2025, and 6% for 2026-2030. The usage limits proposed in section § 95854 (c) of ARB's proposed amendments to California's cap-and-trade regulation seems to allow the majority of emissions from 2024 and 2025 to be covered by a 6% usage limit. This interpretation, while allowing for a greater use of offsets, goes against an intuitive understanding of the law.

The opening for ARB's possible reinterpretation of the law comes from the discrepancy between when emissions are emitted, and the deadline by when compliance obligations covering those emissions must be surrendered to ARB. Because of the regulation's three-year compliance periods, compliance obligations covering at least 30% of emissions from 2024 and 2025 must be surrendered in 2025 and 2026. The deadline for submitting the remaining 70% of compliance obligations for emissions in years 2024 and 2025 is in 2027.

Near Zero published a full description of this issue here:

<http://www.nearzero.org/wp/2018/03/15/interpreting-ab-398s-carbon-offsets-limits/>

The question is whether the 4% and 6% applies to the year the emissions happen, or the deadline for submitting compliance obligations.

AB 398 defines the offsets usage limit thus:

(I) From January 1, 2021, to December 31, 2025, inclusive, a total of 4 percent of a covered entity's compliance obligation may be met by surrendering offset credits...

(II) From January 1, 2026, to December 31, 2030, inclusive, a total of 6 percent of a covered entity's compliance obligation may be met by surrendering offset credits...

Intuitively, the law applies to years, not the three-year commitment periods; half of the years are covered by a 4% limit, and half by a 6% limit. The language of the law and regulation also supports the application of the 4% limit to the years when the emissions occurred, not when the compliance obligations must be surrendered to ARB. In AB 398, the 4% limit applies to a covered entity's *compliance obligation*. The *compliance obligation* is defined in the regulation by the emissions they cover, not the timing of when they are surrendered:

"Compliance Obligation" means the quantity of verified reported emissions or assigned emissions for which an entity must submit compliance instruments to ARB. (California Code of Regulations, title 17, § 95802)

Instead of reflecting this interpretation of the current regulation, the proposed new regulation interprets the limit as applying to the surrender of "compliance instruments" rather than release of "emissions." This more lenient interpretation of the law allows regulated entities to use offsets to cover 5.4% of their 2024 and 2025 emissions rather than 4%.

ARB should clarify that the 4% offset limit applies to all covered emissions emitted during 2021- 2025. (HAYA)

Comment:

2 . The use of offsets for 2024 and 2025 emissions should be capped at 4% to be consistent with the intent of AB 398.

AB 398 establishes an offset usage limit of 4% for 2021-2025, and 6% for 2026-2030, and ARB proposes limits of 4% for the compliance obligations due in 2024 and 2025 and 6% for the compliance obligations due in 2026.

However, in the first years of each compliance period, covered entities are required to surrender obligations for only 30% of their emissions in each year, with the remainder due in at the end of the three-year compliance period.⁴⁷⁴ Thus, the 4% limit would apply to only 30% of the 2024 emissions and 30% of the 2025 emissions, and the remaining 70% of emissions in each of those years would be subject to the higher 6% limit.

The distinction between when emissions are emitted, and the deadline by which compliance obligations covering those emissions must be surrendered to ARB should not be construed to weaken the offset usage limit for 2024 and 2025.

AB 398 states that: "(I) From January 1, 2021, to December 31, 2025, inclusive, a total of 4 percent of a covered entity's compliance obligation may be met by surrendering

⁴⁷⁴ Proposed Cap-and-Trade Amendments, Initial Statement of Reasons, Sept. 4, 2018 ("ISOR"), p. 50, available at: <https://www.arb.ca.gov/regact/2018/capandtrade18/ct18isor.pdf>.

offset credits... (II) From January 1, 2026, to December 31, 2030, inclusive, a total of 6 percent of a covered entity's compliance obligation may be met by surrendering offset credits....”

Covered entities have a compliance obligation for all of their covered emissions in 2024 and 2025, even if the regulation allows them flexibility to postpone surrendering those obligations until 2026. That is, the “compliance obligation” is the emissions they cover, not the timing of when the compliance instruments are surrendered. As defined in the regulation, “Compliance Obligation” means the quantity of verified reported emissions or assigned emissions for which an entity must submit compliance instruments to ARB.”⁴⁷⁵

The 4% offset limit applies to *all* covered emissions emitted during the years 2021-2025. (CENTERBIODIV)

Response: The comments present a misunderstanding of the adopted amendments. No change is required; the existing language in section 95854 requires exactly what the commenter is proposing. Section 95854(c) explicitly states, for the 2024 and 2025 emissions years, offsets may only be used to meet up to four percent of an entity's compliance obligation, while offsets may only be used to meet up to six percent of an entity's compliance obligation for the 2026 emissions year. All usage limits are based on emissions years regardless of when surrender occurs. This means that in November 2027, when all emissions from emissions years 2024, 2025, and 2026 must be accounted for, covered entities will have been able to utilize offset credits for up to 4 percent of their covered emissions for both 2024 and 2025 and up to 6 percent for their 2026 covered emissions.

G-3. Direct Environmental Benefits in the State (DEBS) Requirements

General DEBS Support

G-3.1. Comment:

VERA is supportive of the following staff proposals:

- Definition of Direct Environmental Benefit and Ceiling Price Unit
- The construction of § 95854(b)—Quantitative Usage Limit on Designated Compliance Instruments— Including Offset Credits
- Determination that in-state projects using CARB-approved offset protocols meet the DEBS definition
- Inclusion of a pathway for out-of-state offsets to demonstrate Direct Environmental Benefits to California... (VERA, 3DEGREES)

⁴⁷⁵ 17 C.C.R. § 95802.

Comment:

Offsets: Direct Environmental Benefits in the State

We support the approach taken in the propose rule. Offset projects which are undertaken in a State clearly have direct environmental benefits to the State. The Initial Statement of Reasons contains very specific examples of the environmental benefits from projects using one of the six approved compliance offset methodologies.

We agree that projects undertaken outside the State, may also have direct benefits in California. The proposed rule allows for certain categories of information to be submitted in support of a claim that a project outside California has direct in-state environmental benefits: scientific peer reviewed information or reports, governmental reports such as the Intergovernmental Panel on Climate Change, and "monitoring or other analytical data... results in the reduction or avoidance of any pollutant in the State." See §95989(b)(3). (DENTONS)

Comment:

3. CARBON OFFSETS

DIRECT ENVIRONMENTAL BENEFITS

IETA generally supports many amendments proposed by CARB pertaining to direct environmental benefits, including the automatic designation of in-state offsets as well as the process outlined for out-of-state offsets to achieve such designation. (IETA)

Comment:

On implementation of the DEBs criteria, staff have proposed that any offset project that is physically located within the state, or that reduced GHG emissions in the state, would automatically be considered to provide DEBs. For projects located outside the state, CARB would review projects on a case-by-case basis based on the submission of additional documentation by project developers.

WPTF considers this approach to evaluating whether an offset project meets the DEB's standard to be reasonable. (WPTF)

Comment:

SCPPA also appreciates staff's proposed requirements to describe what constitutes "Direct Environmental Benefits (DEBs) in the State" in §95989(a)-(d) as required in how to implement DEBs requirements under AB 398. We appreciate some stakeholders' desire to prioritize real and verifiable offset projects within the State of California and believe that both ensuring that offset projects are located within, or are mitigating GHG emissions within California do indeed provide direct environmental benefits. (SCPPA)

Comment:

Offsets. WSPA supports the continued use of offsets as an important cost-containment provision within the regulation. We also appreciate staff's proposed requirements to describe what constitutes "Direct Environmental Benefits (DEBS) in the State" in §95989, as well as, how to implement DEBS requirements under AB 398. This approach will provide certainty to in-state offset projects and a pathway for out-of-state projects to secure a DEBS determination, if appropriate. (WSPA2, PHILLIPS66)

Comment:

We also support the clarification that up to one half of a covered entity's quantitative offset usage may be met by ARB offset credits that do not provide DEBS, independent from surrendering credits that do provide DEBS. These proposals support the cost-containment benefits of a healthy offset supply while meeting the spirit of the DEBS provision. (PG&E)

Comment:

4. Offset Credits and Direct Environmental Benefits

SDG&E supports the 45-Day language on direct environmental benefits to California of offset credits. AB 398 SEC. 4. Section 38562 (c)(2)(E) established new offset credit limits, beginning with 4% of a covered entity's compliance obligation, for the period January 1, 2021 to December 31, 2025, with no more than half of those credits coming from projects that do not provide direct environmental benefits to the state. That limit increases to 6% for the period January 1, 2026 to December 31, 2030, also with half required to provide direct environmental benefits to California. The current CARB language accepts that all projects located in California meet direct environmental benefits standards for both past and future offset credits. The 45- day language also allows for out-of-state offset projects to meet the standards by demonstrating that they provide environmental benefit to California. (SDG&E)

Comment:

C. Post-2020 offsets

One of the key reforms that the cap-and-trade extension bill, AB 398, made to the offsets program is to limit the total number of offset credits that can be used from projects that do not produce "direct environmental benefits," or DEBs, to in-state air or water quality.

These direct environmental benefits are defined by statute as "the reduction or avoidance of emissions of any air pollutant in the state or the reduction or avoidance of any pollutant that could have an adverse impact on waters of the state." We have reviewed the draft regulations and accompanying documentation CARB released on September 4 and have only one clarifying suggestion.

CARB proposes to adopt the statutory definition of direct environmental benefits directly from the statute, which seems appropriate as a starting point. In its staff report, CARB has provided helpful examples of the ways in which the existing approved protocols for in-state projects provide direct air and water pollution benefits (for example, reduced runoff from offsets that produce healthy forests and reduced air pollution from livestock projects) and is recognizing them by regulation as producing the direct environmental benefits contemplated by the statute. This treatment seems consistent with the statutory language and intent of the legislature. (IEMAC)

Comment:

CCEEB urges the ARB to:...

- Maintain the proposed definition of Direct Environmental Benefits...

Direct Environmental Benefits (DEBs)

CCEEB supports ARB's definition of DEBs. We believe there is a need for a long-term and broad view. Unlike criteria pollutants and air toxics, a ton of GHG emitted in California, or not sequestered due to rain forest destruction in tropical locales, will have the same detrimental climate impact. Cap-and-Trade is intended to encourage an open market and provide for investment in climate projects such as reforestation that cannot otherwise be mandated by direct regulation. It is important to note that not all GHGs are emitted from industrial sources. Failure to sequester GHGs because of deforestation and other land use practices contribute significantly to the global increase in atmospheric GHGs. A properly designed Cap-and-Trade program permits investments in projects that can correct for these detrimental land use activities and preserve the world's vital carbon sinks. (CCEEB)

Comment:

Direct Environmental Benefits in State (DEBS)

We support a science-based, clear, cost effective, and replicable approach to evaluating DEBS.

- We support ARB's definition of Direct Environmental Benefit, and staff's proposal of a clear and replicable pathway for projects to demonstrate DEBS. Once a project has been evaluated and accepted by ARB as providing DEBS, we recommend that all other projects that meet those same criteria be automatically accepted as well. (NEWFORESTS)

Comment:

Direct Environmental Benefits

CARB has developed a reasonable approach to identifying Direct Environmental benefits.

EDF believes that offsets play an important role in the cap-and-trade program. They provide opportunities for uncapped sectors to participate in emission reductions, provide pathways for lowering compliance costs and therefore opportunities for increasing ambition, and importantly the cost-containment they provide can also help California avoid triggering its new hard price ceiling post-2020. Therefore we urge CARB to continue considering new offset protocols as we approach 2020.

From EDF's perspective, CARB has laid out a reasonable way to identify the direct environmental benefits that must apply to some offsets. The proposal aligns with what EDF considers fundamental principles to defining direct environmental benefits:

1. Consider what is administratively practical so as to ensure that the state can reap the many benefits of offsets including accrual of direct environmental benefits
2. Ensure that California is able to fully consider the direct environmental benefits at issue rather than focus exclusively on geographic restrictions
3. Adhere to the statutory requirements as written in AB 398.⁴⁷⁶ (EDF)

Comment:

JUG Members support CARB's approach to offsets in this regulatory package, and believe it is a reasonable approach to implementing the provisions of AB 398.

This regulatory package again highlights some of the major benefits of the offset program – cost containment and creation of real reductions outside of capped sectors. JUG and many others agree with these staff positions. We specifically support CARB's proposals on the following offset-related issues...

- Definition of Direct Environmental Benefit (DEB) and Ceiling Price Unit
- Determination that in-state projects using CARB-approved offset protocols meet the DEBS definition
- Inclusion of a pathway for out-of-state offsets to demonstrate Direct Environmental Benefits to California (JOINTELECUTILS)

Comment:

We specifically support CARB's proposals on the following offset-related issues:

1. Definition of Direct Environmental Benefit (DEB) and Ceiling Price Unit;
2. The structure of Section 95854(b) related to offset usage limits;

⁴⁷⁶ Adhering to the statutory requirements of AB 398 includes giving meaning to the term "direct environmental benefit". Greenhouse gases are an air pollutant, however if CARB had determined that reducing a ton of greenhouse gases as each offset does created a direct environmental benefit to California, the direct environmental benefit language in AB 398 would be essentially meaningless.

3. The determination that in-state offset projects using CARB-approved protocols meet the DEBS definition; and
4. Inclusion of a pathway for out-of-state offsets to show how they could also provide DEBS. (CIPA)

Comment:

We therefore support the application of a definition of "Direct Environmental Benefits" (DEBS) to automatically include in-state projects and pave a way for ozone-depleting substance (ODS) projects and out-of-state projects to be considered. This DEBS application, which helps retain the stability of the program and minimizes legal risk, will incent further reductions to occur inside and outside of California. (PG&E)

Comment:

Direct Environmental Benefits in State

Hewing close to AB 398, the Proposed Amendments use the exact language of the statute as the definition of Direct Environmental Benefits in State (DEBS): "the reduction or avoidance of emissions of any air pollutant in the state or the reduction or avoidance of any pollutant that could have an adverse impact on waters of the state."

As follows from the DEBS text, ACR supports the staff proposal that all projects located in-state or avoiding any in-state air pollutants, including greenhouse gases (GHGs), qualify as providing DEBS. GHGs are air pollutants, as determined by the EPA and the Supreme Court, and as reflected in CARB's previous regulatory definition. Indeed, the Supreme Court's majority opinion in *Massachusetts vs. EPA* commented that "greenhouse gases fit well within the [Clean Air Act's] capacious definition of 'air pollutant.'"⁴⁷⁷ In associating DEBS with "any" air pollutant, legislators reinforced the "capacious" definition. While all project types under CARB compliance offset protocols provide non-GHG benefits, GHG avoidance or reduction in California is alone sufficient to provide DEBS.

ACR supports the inclusion of a pathway for projects outside California to qualify as providing DEBS. ACR specifically supports the language of Section 95989(b) that states, "Such determination must be based on a showing that the offset project or offset project type provides for the reduction or avoidance of emissions of any air pollutant that is not credited pursuant to the applicable Compliance Offset Protocol in the State or a reduction or avoidance of any pollutant that could have an adverse impact on waters of the State." To ensure consistency and avoid confusion, ACR recommends deletion of the phrase "supporting a claim that the offset project or offset project type results in this type of reduction or avoidance of any pollutant in the State" that appears at the end of

⁴⁷⁷ *Massachusetts vs. EPA*, <https://caselaw.findlaw.com/us-supreme-court/549/497.html>

Sections 95989(b)(1), 95989(b)(2), and 95989(b)(3). ACR appreciates CARB's recognition of climate research as possible justification for DEBS.

Section 95989(c) indicates that a project outside California can receive consideration for DEBS upon submission of supporting material with the first Offset Project Data Report (OPDR). While process clarity is important, ACR believes that determination at the OPDR stage is too late to facilitate investment decisions. Much better to enable offset projects would be to also allow DEBS consideration prior to and upon project listing.

Some stakeholders and the Independent Emissions Market Advisory Committee (IEMAC) have assumed in the meaning of DEBS a legislative intent that excludes benefits associated with GHGs.⁴⁷⁸ This runs counter to the inclusive statutory language ("any" air pollutant and "any" pollutant impacting water) and is unsubstantiated by evidence. The IEMAC offers no supporting evidence, conceding no attempt to find any, and ACR has otherwise seen no such evidence. The position of IEMAC is that the DEBS provision has no effect if it does not exclude GHGs and, therefore, must be meant to exclude GHGs.

However, the DEBS provision does have consequence, even if GHGs reductions are the basis for DEBS. The result of the provision is that CARB must provide oversight to ensure at least a portion of offset projects deliver environmental benefits to Californians. This assurance can be understood to be the intent. Whether DEBS are based on GHG reductions or whether Californians enjoy environmental benefits from all offset projects is ultimately not germane.

What evidence is available supports this interpretation of DEBS. At the May 23, 2018 hearing of the Joint Legislative Committee on Climate Change Policies, the author of AB 398, Assemblyman Eduardo Garcia, expounded on the intent of the DEBS provision: "...The thought has been how do we ensure that we're addressing the local problems: clean air, clean water....It was drafted and crafted specifically this way to meet the restrictions or limitations of the law, that could allow us to meet these overall objectives....[Direct environmental benefits] was the appropriate approach, and as the author of the bill I wanted to let you know that that's what we meant and nothing beyond that..."⁴⁷⁹ Assemblyman Garcia's comments can be understood to support our view that the intent of the law was to direct CARB to provide assurance of DEBS, not to restrict GHGs reductions from qualifying as DEBS and certainly not to limit projects to those in California. Rather, the DEBS approach was taken as a legitimate alternative, implying no in-state requirement and no preference for one path to healthy air and water over another.

⁴⁷⁸ https://calepa.ca.gov/wp-content/uploads/sites/6/2018/10/Draft_Chapter_IEMAC_Annual_Report_Offsets_10-2018.pdf, (page 4)

⁴⁷⁹ At the May 23, 2018 hearing of the Joint Legislative Committee on Climate Change Policies, ACR comments on DEBS at 1:18, and Assm. Garcia responds at 1:33: http://calchannel.granicus.com/MediaPlayer.php?view_id=7&clip_id=5543.

Assemblyman Garcia highlighted local air and water quality concerns. The detrimental role of GHGs in air and water quality is established science.

GHGs cause higher temperatures, increasing ground-level ozone formation and its concomitant respiratory health effects. As a secondary pollutant, some might claim ground-level ozone is not an “emissions” reduction or avoidance covered by the DEBS definition. Such a distinction is not only meaningless but legally risky. By improving local air quality, the intent of AB 398 is met. Any assertion that this air quality improvement doesn’t qualify as DEBS because the ozone was formed, rather than emitted, in-state would raise serious Constitutional issues around interstate commerce. That would be to disqualify the desired result only because it was generated by investment outside state borders.⁴⁸⁰ CARB staff acknowledged similar concerns well before the cap-and-trade program even began.⁴⁸¹

For water impacts, AB 398 defines DEBS as “...reduction or avoidance of any pollutant that could have an adverse impact on waters of the state.” GHGs are pollutants that adversely impact waters of the state. For example, diminished surface and ground water concentrate pollutant loads. Reducing or avoiding GHGs anywhere delivers DEBS. The GHG-water linkage is well supported by the science and is recognized in State policy and plans. ACR elaborated on this extensively in our comment letter dated March 16, 2018.⁴⁸² (ACR)

Comment:

§95989 – Direct Environmental Benefits in the State (DEBS)

Any definition of DEBS that ARB uses should be based on science and not political considerations. The science is very clear on the value of emission reductions beyond the state’s boundaries (i.e., offsets)—reductions anywhere provide environmental benefits to California, particularly given our state’s vulnerability to climate change. (CLIMACTRESERV)

Comment:

Implementation of Direct Environmental Benefit Provision of AB 398

Finite supports the language in §95989 on Direct Environmental Benefits (DEBs) acknowledging that both projects located in and outside of California state boundaries can, and do, provide direct environmental benefits to the State of California. Science has shown that emissions of GHGs outside the state have an adverse impact on

⁴⁸⁰ Parallels the overriding argument as to why a DEBS distinction between in-state and out-of-state offsets risks violation of the Dormant Commerce Clause: <https://climatetrust.org/latest-in-state-offset-proposal-will-raise-legal-challenge-dormant-commerce-clause-analysis/>

⁴⁸¹ <https://www.arb.ca.gov/regact/2010/capandtrade10/capv2appd.pdf> (page 8, comment D-46)

⁴⁸² <https://www.arb.ca.gov/lists/com-attach/36-ct-3-2-18-wkshp-ws-UjMCZ1YIU15VMAhn.pdf>

California and its waters,⁴⁸³ and the State of California has recognized this through various policy positions, including the State Water Board's recently issued Comprehensive Response to Climate Change.⁴⁸⁴ Finite supports CARB's proposal to base DEBs determinations on science rather than a strictly "in-state" vs "out-of-state" paradigm that is focused exclusively on political boundaries, which would open the regulation to legal challenges. (FINITECARBON)

Comment:

Direct Environmental Benefits to the State (DEBS)

Bluesource supports CARB's assertion that, in addition to in-state offset projects, many other CARB- approved offset projects located outside of the state boundaries can, and do, provide direct environmental benefits to California. In fact, science indicates that a reduction of greenhouse gases anywhere provides environmental benefits everywhere, but even more so in locations like California that are especially prone to harm from climate-dependent factors such as sea level rise and drinking water supplies heavily dependent on snowpack. Having a clear and straightforward process for project developers to demonstrate a DEBS will benefit the program's implementation and incent more projects with California benefits.

CARB rightly is proposing to base DEBS determinations on science rather than a strictly "in-state" vs "out-of-state" paradigm that is focused exclusively on political boundaries. Such a firm unscientific basis would open the regulation to legal challenges. It is far more important to incent real, quantifiable, verifiable, enforceable, additional and cost-effective GHG reductions than to inject unnecessary legal uncertainty into the program. Retaining stability, and minimizing legal risk, will certainly incent further offset reductions to occur, including in many California's urban and rural communities.

The staff proposal rightly acknowledges that the reduction of GHGs provides a reduction in air pollutants, and thus has a benefit to the state. Bluesource supports this

⁴⁸³ U.S Environmental Protection Agency, What Climate Change Means for California, August 2016, available at: <https://www.epa.gov/sites/production/files/2016-09/documents/climate-change-ca.pdf>. The Environmental Protection Agency outlines the ways that increasing greenhouse gas levels have affected California's waters, including decreased snowpack and declining water availability due to decreased rainfall and increased evaporation rates, and notes that increasing temperatures and declining rainfall in nearby states have reduced the flow of water in the Colorado River, a key source of irrigation water in southern California.

⁴⁸⁴ State Water Resources Control Board, BOARD RESOLUTION NO. 2017-0012, Comprehensive Response to Climate Change, available at: https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2017/rs2017_0012.pdf. The State Water Board's resolution noted that "sharp rises in the atmospheric concentration of greenhouse gases" have caused many adverse impacts on California's waters including "declining snowpack and more frequent and longer droughts, more frequent and more severe flooding, changes in the timing and volume of peak runoff, and consequent impacts on water quality and water availability. Vulnerabilities of water resources include, but are not limited to, changes to water supplies, subsidence, increased amounts of water pollution, erosion, flooding, and related risks to water and wastewater infrastructure and operations, degradation of watersheds, alteration of aquatic ecosystems and loss of habitat, multiple impacts in coastal areas, and ocean acidification."

scientifically-backed position. GHG's are air pollutants by statutory definition, by CARB's previously existing regulatory definition, and by determination of the United States Supreme Court. Succinctly said, a reduction in GHGs is a reduction in an air pollutant, and therefore a benefit to the environment. DEBS determinations must take this into account.

As a developer of forest carbon offset projects, we see the benefits of such projects every day. International scientists also agree that forests are critical to limiting average global temperature rise as they provide one of the only readily available, cost-effective means of directly removing and storing GHG emissions at scale. Forests also provide a host of local benefits such as shading and cooling, water filtration and storage, and the provision of wildlife and pollinator habitat. (BLUESOURCE)

Comment:

Shell Energy agrees that all offset projects located in California should be deemed to meet the DEBS standard. Out-of-State offset projects should be judged under the DEBS standard based on factual information demonstrating that the project is beneficial to the California environment. To that end, ARB can acknowledge that environmental impacts of projects on watersheds, wildlife and air quality are generally regional in nature. Therefore, the ARB can recognize projects providing benefits within a defined geographical region as eligible for DEB treatment. As noted in its earlier comments, Shell Energy supports a broad application of the DEBS standard to out-of-State offset projects. (SHELL)

Comment:

2. Direct Environmental Benefits (DEBS) language: The CARB language for DEBS proposes to adhere to the clear intent of Assembly Bill (AB) 398 and adopt regulatory language that ensures that not less than one-half of the offsets surrendered for compliance come from projects that result in “the reduction or avoidance of emissions of any air pollutant in the state or the reduction or avoidance of any pollutant that could have an adverse impact on waters of the state” (Section 38562c2(E)(ii), emphasis added. In addition, CARB has proposed, and the CFCC agrees, that out of state forestry offsets located in watersheds flowing into California clearly meet this requirement since they contribute to the health of waters of the state and the environmental and economic benefits they sustain. (CFCC)

Comment:

Evaluation of DEBs

Finite supports the implementation of a clear and straightforward process for project developers to demonstrate the DEBs of a project activity – this will benefit the program's implementation and incentivize more projects with California benefits. (FINITECARBON)

Comment:

Implementation of Direct Environmental Benefit Provision of AB 398

VERA supports CARB's assertion that, in addition to in-state offset projects, many other CARB-approved offset projects located outside of the state boundaries can, and do, provide direct environmental benefits to California. In fact, science indicates that a reduction of greenhouse gases anywhere provides environmental benefits everywhere, but even more so in locations like California that are especially prone to harm from climate-dependent factors such as sea level rise and drinking water supplies heavily dependent on snowpack. Having a clear and straightforward process for project developers to demonstrate a DEBS will benefit the program's implementation and incent more projects with California benefits.

The original AB 32 Climate Change Scoping Plan⁴⁸⁵ laid out a vision for leadership and exportability of California's GHG program. It also highlighted that reducing in-state emissions alone would not solve the larger issue. Those original goals of global action for the benefit of California are being achieved with the use of offsets, both within and outside of California as the reduction of unregulated GHGs has enormous benefit to California's long-term goals of reducing the impacts of global climate change. The continued release of potent emissions such as methane, black carbon and refrigerants is of great concern and urgency. Offsets provide a viable mechanism to achieve the additional reductions necessary to help achieve the larger goal, and that is a foundational policy laid out in the Scoping Plan that needs to continue. These impacts are also laid out before you in great detail by the California Resources Agency's Safeguarding website.⁴⁸⁶ Moreover, science has shown that emissions of GHGs around the globe have a climatic impact on California and its waters.^{487,488}

⁴⁸⁵ <https://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm>

⁴⁸⁶ <http://resources.ca.gov/climate/safeguarding/>

⁴⁸⁷ See, for example, Hayhoe et al. "Emissions pathways, climate change, and impacts on California." National Academy of Sciences of the USA. August 2004 -

<http://www.pnas.org/content/pnas/101/34/12422.full.pdf>. This paper finds that, while under a low emissions scenario snow pack loss in California's Sierra Nevada range from 29-72% while under a high emissions scenario loss of 73- 89% are anticipated. As described in the paper, loss of snowpack has cascading impacts on "streamflow, and water storage and supply." Avoiding and reducing greenhouse gas emissions is key to maintaining California's snow pack. Reducing greenhouse gas emissions anywhere clearly reduces or avoids a pollutant that has an adverse impact on the waters of California.

⁴⁸⁸ Central Valley Regional Water Quality Board – Climate Change Work Plan December 2017, pp. 9 – 17.

https://www.waterboards.ca.gov/centralvalley/board_decisions/tentative_orders/1712/20_climatechange/3_climatechange_wkpln.pdf Los Angeles Region Framework for Climate Change Adaptation and Mitigation, July 2015, pp. 8-12, 20-22.

https://www.waterboards.ca.gov/losangeles/water_issues/programs/climate_change/docs/2015/Climatechange-frameworkforclimatechangeadaptation-final7-20-2015.pdf

The Effect of Climate Change on Water Resources and Programs, U.S. EPA, pp. 9 – 19.

https://cfpub.epa.gov/watertrain/pdf/modules/Climate_Change_Module.pdf California Climate Adaptation Strategy, Chapter 7 – Water Management, p. 80 – 85.

CARB rightly is proposing to base DEBS determinations on science rather than a strictly “in-state” vs “out-of-state” paradigm that is focused exclusively on political boundaries. Such a firm unscientific basis would open the regulation to legal challenges⁴⁸⁹. This legal determination has, in fact, already been acknowledged by CARB in the original Cap and Trade staff report almost a decade ago⁴⁹⁰. It is far more important to incent real, quantifiable, verifiable, enforceable, additional and cost-effective GHG reductions than to inject unnecessary legal uncertainty into the program. Retaining stability, and minimizing legal risk, will certainly incent further offset reductions to occur, including in many California’s urban and rural communities.

VERA also believes that once a project type and/or location has been deemed to have DEBS, CARB should implement a system where substantially similar projects are awarded DEBS determinations with maximal transparency and minimal additional time and expense.

The staff proposal rightly acknowledges that the reduction of GHGs provides a reduction in air pollutants, and thus has a benefit to the state. VERA supports this scientifically-backed position. GHG’s are air pollutants by statutory definition, by CARB’s previously existing regulatory definition, and by determination of the United States Supreme Court⁴⁹¹. Succinctly said, a reduction in GHGs is a reduction in an air pollutant, and therefore a benefit to the environment. DEBS determinations must take this into account...

On September 10, 2018, Governor Brown issued Executive Order B-55-18⁴⁹². This action highlights the importance of working lands, in general, but highlights forest health in particular. The Executive Order states that “The achievement of Carbon Neutrality will require both significant reductions in carbon pollution and *removal of carbon dioxide from the atmosphere, including sequestration in forests, soils and other landscapes;*” [emphasis added]. Offsets protocols are the accounting mechanism to quantify exactly what is being asked for by the Governor. Protocols exist for forests, soils, grasslands, rice cultivation, wetlands and more. Maximizing the market signals for working lands in

[http://www.climatechange.ca.gov/adaptation/documents/Statewide Adaptation Strategy - Chapter 7 - Water Management.pdf](http://www.climatechange.ca.gov/adaptation/documents/Statewide_Adaptation_Strategy_-_Chapter_7_-_Water_Management.pdf)

Using Future Climate Projections to Support Water Resources Decision Making in California. California Climate Change Center, pp. 45-45.

https://www.water.ca.gov/LegacyFiles/pubs/climate/using_future_climate_projections_to_support_water_resources_decision_making_in_california/usingfutureclimateprojtosuppwater_jun09_web.pdf

“How climate change could threaten the water supply for millions of Californians,” Sacramento Bee, June 30, 2017. www.sacbee.com/news/local/article158679214.html

“Gauging climate preparedness to inform adaptation needs: local level adaptation in drinking water quality in CA, USA,” Climatic Change, Feb. 2017; see section 2.2 “Climate change impacts.”

<https://link.springer.com/article/10.1007/s10584-016-1870-3>

⁴⁸⁹ <https://climatetrust.org/latest-in-state-offset-proposal-will-raise-legal-challenge-dormant-commerce-clause-analysis/>

⁴⁹⁰ <https://www.arb.ca.gov/regact/2010/capandtrade10/capv2appd.pdf> (Page 8, Comment D-46).

⁴⁹¹ Massachusetts vs. EPA

⁴⁹² <https://www.gov.ca.gov/wp-content/uploads/2018/09/9.10.18-Executive-Order.pdf>

rulemakings such as this is completely complementary to achieving the goals of AB 32 and EO B-55-18.

An argument presented by offset opponents seems to be based on the following logic – an offset surrendered, on net, doesn't provide an actual GHG reduction. VERA strongly disagrees with this premise. CARB very purposefully created conservative offset accounting mechanisms to ensure that there is a margin of safety associated with all offset projects and credit issuance. This foundational policy of the program guarantees that all projects reduce more GHGs than are actually credited and thus more reductions are gained than used in the Program by compliance entities. In addition to the quantitative surplus of offsets, VERA has already commented on the temporal benefit of reducing GHG's through the offset mechanism, i.e. that an offset project (reduction today) has a benefit even if the offset is later used by a compliance entity under the rules of the Program (emission at a later date). Basic climate science tells us that these benefits cannot be ignored. (VERA, 3DEGREES)

Comment:

Our previous comment letters are incorporated by reference in this letter.^{493,494,495}
[CARB note: All three comment letters focus mainly on expanding the number of projects that qualify as providing DEBS. The March comment letter provides justification that all projects provide DEBS because all GHG emissions reductions benefit California waters no matter where the reductions occur. The March comment letter further request that all projects listed before December 31, 2020, should be grandfathered in as providing DEBS. Other comments include requesting the adoption of new protocols, clarifications to the project termination language, clarification to the requirements for determining project status, and the use of a buffer pool for invalidation. The May comment letter reiterates many of the March letter comments and includes recommendations for the use of proceeds from the sale of allowances at the price ceiling. The July comment letter, again, argues that all offsets should qualify as providing DEBS The commenter's letters submitted in response to CARB workshops in March, May and July are attached, see footnotes. None of these letters were submitted during the formal 45-day comment period, and as such CARB staff is not required to respond to these comment here. No further response is required. However, CARB staff would like to note that issues raised by the commenters are addressed in Response to 45-day Comments G-1.8, G-3.1, G-3.2, G-3.4, G-3.20 and G-7.1.] (ACR)

Comment:

I, ACR, would like to thank CARB staff for drafting amendments to the cap-and-trade regulation that are prudent and that that carefully hue to the language of AB 398 with

⁴⁹³ <https://www.arb.ca.gov/lists/com-attach/36-ct-3-2-18-wkshp-ws-UjMCZ1YIU5VMAhn.pdf>

⁴⁹⁴ <https://www.arb.ca.gov/lists/com-attach/1211-ct-4-26-18-wkshp-ws-AWBdOAFyBwsDZgJt.pdf>

⁴⁹⁵ <https://www.arb.ca.gov/lists/com-attach/32-ct-6-21-18-wkshp-ws-BWRWM1QnUI4FYABv.pdf>

respect to offsets. As of yesterday, the offsets program has achieved over 140 million tons of emissions reductions from uncapped sources, unregulated sources.

Those reductions deliver environmental and economic benefits to Californians and our partners in Climate Action. To the well-meaning stakeholders who advocate against offsets, we must ask what they are advocating for. They are effectively advocating climate strategy that will unnecessarily burden California consumers and ratepayers, ultimately risking public support. I'd like to focus on the statutory provisions to ensure offsets deliver Direct Environmental Benefits in State, DEBS. As the legislative record contains no indication of the intent behind this requirement, staff have rightly adhered closely to the statutory language.

The language allows for DEBS associated with quote, "Any air pollutant", unquote.

The language allows for DEBS associated with quote, "Any pollutant that could have an adverse impact on waters of the state", unquote. No one in this room is going to dispute that greenhouse gases are pollutants.

Some, including members of the IEMAC, have asserted that such phrases as, "any air pollutant", should, in this case, be understood to exclude greenhouse gases. We would like to point out that even if greenhouse gas reductions do enable DEBS, the DEBS language is of significant consequence.

The Legislature has now required CARB to provide an assurance that offsets deliver direct environmental benefits in state. CARB's assurance has meaning.

It is understandable that the local benefits of offsets may have been unclear to many people without CARB's evaluation.

If CARB, with its expertise finds, that more offsets benefit Californians than we may have expected, that's an outcome with which we should be pleased, not unsettled.

ACR supports regulatory amendments that continue to allow a robust offsets program that contributes to climate action and delivers local benefits as articulated in AB 398. (ACR2)

Comment:

First, we wish to state that IPRE welcomes the proposal in Section 95989 to establish a process by which offset projects can demonstrate that they provide DEBS. We appreciate the recognition that projects outside of California can and do provide direct environmental benefits in the State. The process outlined in subsection (b) of Section 95989 reflects a commitment to science-based approach to this process, which will help to ensure the integrity of the program. (IPRE)

Comment:

Bluesource also believes that once a project type and/or location has been deemed to have DEBS, CARB should implement a system where substantially similar projects are

awarded DEBS determinations with maximal transparency and minimal additional time and expense. (BLUESOURCE)

Response: Thank you for the support.

With respect to the commenters indicating that GHG emissions reductions credited by a Compliance Offset Protocol should be assessed as a basis for a project providing a direct environmental benefit, CARB continues to agree that GHGs constitute air pollutants. However, CARB also notes that the 45-Day proposal and the 15-Day changes clarify that the regulatory approach will be to consider any air pollutant in the State that is not credited pursuant to the applicable Compliance Offset Protocol, or a reduction or avoidance of any pollutant that is not credited pursuant to the applicable Compliance Offset Protocol that could have an adverse impact on the waters of the State.

Therefore, GHG emissions reductions that are credited pursuant to an applicable Compliance Offset Protocol will not result, in and of themselves, in a project qualifying for the DEBS determination. This approach, as indicated in the ISOR (pp. 49-54), took into account science, stakeholder comments, and Legislative discussions regarding the DEBS provision in AB 398. See Response to 45-Day Comment G-3.2 for further discussion of the criteria for assessing DEBS.

With respect to comments regarding similar project types, CARB staff agrees that the same project type in a similar location should be able to reduce the time and expense of a DEBS review. Because of the transparency of the program, the similar project will be able to view documents relied on by other projects to submit them to help justify their DEBS determination. Also, CARB staff will have completed the review of the similar project, both of which should shorten the review time for the new project.

Concerns with Definition of DEBS Criteria

G-3.2. Comment:

Second, I appreciate that ARB previously requested input on the intent of the DEBS provisions in the law, which ARB states it will take into account in determining which projects should be considered to provide DEBS. I raise a few observations on the apparent intent of the law.

First, I raise the context in which the DEBS requirement was proposed. A concern commonly raised about the use of offsets by California regulated entities is that activities that emit GHGs are very often associated with the release of other air and water pollutants. Therefore, by allowing less GHGs to be reduced in the state's capped sectors, offsets effectively increase the release of associated air and water pollutants from those sectors. Offsets without direct environmental benefits in the state means that California loses the co-benefits associated with the reductions that would otherwise have occurred in the state's capped sectors. This has been a particularly concern for

disadvantaged communities who have experienced the disproportionate burden of air and water pollution in the state. Offsets lead to increased pollution in vulnerable communities; the DEBS requirement means that the increase in environmental pollution in the capped sectors resulting from the use of offsets is at least partially made up by reduced impacts on air or water quality somewhere in the state.

This understanding of the intent of the law is reflected in the definition of DEBS as a direct reduction of air and water pollutants. It is also reflected in the second time that the phrase “direct environmental benefits in the state” is used in the law. The second place it appears is in the establishment of the Compliance Offsets Protocol Task Force: “The Compliance Offsets Protocol Task Force is hereby established to provide guidance to the state board in approving new offset protocols for a market-based compliance mechanism for the purposes of increasing offset projects with direct environmental benefits in the state while prioritizing disadvantaged communities, Native American or tribal lands, and rural and agricultural regions.” Again, the emphasis is on creating direct environmental benefits to those experiencing a disproportional burden of environmental harms.

I urge ARB to define the criteria it will use to determine if an offset project meaningfully and directly reduces air and water pollution in fulfillment of the DEBS requirement. (HAYA)

Comment:

1. Evaluating whether offset projects have Direct Environmental Benefits in the State (DEBS)

I appreciate ARB’s confirmation that reductions in greenhouse gas emissions cannot be considered as meeting the DEBS requirement. (HAYA)

Comment:

We welcome that ARB made explicit in its June 21, 2018 workshop presentation and its *Preliminary Discussion Draft* that DEBS are in addition to benefits from reducing or removing greenhouse gas emissions. This is necessarily the intent of the law since if it were not true, the DEBS requirement would be meaningless. All offset credits are required to reduce or remove GHGs by law, and offsets simply shift greenhouse gas emissions from the offset project site to the site of the covered emitter that submits the offset credit. (HAYAETAL)

Comment:

() ARB Needs a Tighter Definition of Environmental Benefits Related to Offsets.

As Staff correctly notes, AB 398 requires that “no more than one-half [of offsets] may be sourced from projects that do not provide direct environmental benefits in the state.”⁴⁹⁶

⁴⁹⁶ Cal. Health & Safety Code § 38562(c)(2)(E).

AB 398 further defines “direct environmental benefits in the state” (“DEBS”) as “the reduction or avoidance of emissions of any air pollutant in the state or the reduction or avoidance of any pollutant that could have an adverse impact on waters of the state.”⁴⁹⁷

As the Assembly Floor Analysis notes, questions have arisen for “how offsets, particularly from sources outside the state, might meet AB 32’s. . . requirements or otherwise produce benefits in California.”⁴⁹⁸ Given these concerns, it is not surprising that the statutory language in AB 398 was intended to “[d]evelop approaches to increase offset projects in the state. . . .”⁴⁹⁹ Notably, the Senate Floor Analysis states that AB 398 “[r]equires 50% of all offsets to be in California.”⁵⁰⁰

CARB staff proposes to use the same statutory definition of DEBS in their rule-making, and also create a process by which individual projects could provide additional information to show that their out of state project has DEBS for California.⁵⁰¹ The proposed process should be rejected as vague and inconsistent with the language of the statute; it will conceivably create a loophole by which nearly all offsets could qualify. It is also opaque in its compliance with the legislative direction provided by AB 398, which clearly requires an avoidance or reduction of air pollution in the state or the avoidance or reduction of a pollutant impacting the state’s waters.

It should be noted that just because an offset project is located in-state, it does not necessarily have DEBS to California. An example would be projects under the Ozone Depleting Substances protocol – destruction of these materials in state would provide no real environmental benefits to California, even though a facility may be located in state....

It is contrary to legislative intent and introduces extreme environmental uncertainty into the program to create a pathway whereby indirect mechanisms can be qualified as having “direct benefits.” It is also in contradiction of the AB 32 definition of “direct emission reduction,” which states that: ““Direct emission reduction” means a greenhouse gas emission reduction action made by a greenhouse gas emission source at that source.”⁵⁰² Creating such a definition and pathway could have negative repercussions on other proceedings at CARB, such as AB 197 implementation. Thus, under the proposed definition of a DEB, “any air pollutant” should clearly be identified pollutants outside of GHGs. (CEJA)

Response: As noted in the ISOR (pp. 49-54), CARB staff adhered to the statutory definition of “direct environmental benefits in the State” (DEBS) from AB 398. “[D]irect environmental benefits in the state” are “the reduction or avoidance

⁴⁹⁷ Cal. Health & Safety Code § 38562(c)(2)(E).

⁴⁹⁸ AB 398 July 2017 Assembly Floor Analysis, p. 7-8.

⁴⁹⁹ AB 398 July 2017 Assembly Floor Analysis, p. 2; see also July 2017 AB 398 Senate Floor Analysis (stating that AB 398 “[r]equires ARB to develop approaches to increase offset projects in the state. . . .”).

⁵⁰⁰ July 2017 AB 398 Senate Floor Analysis, p. 5.

⁵⁰¹ Discussion Draft, pp. 18-19.

⁵⁰² AB 32, Chapter 3, section 38505

of emissions of any air pollutant in the state or the reduction or avoidance of any pollutant that could have an adverse impact on waters of the state.” Air pollution and water pollution cross state lines. Likewise, an out-of-state offset project may result in the reduction or avoidance of emissions of an air pollutant in California or a pollutant having an adverse impact on waters of California and, therefore, qualify for DEBS. Contrary to the commenter’s assertion that creating a process for an out-of-state project to qualify for DEBS is inconsistent with AB 398, CARB’s adopted amendments precisely adhere to the statutory direction of AB 398. No part of AB 398 imposes a requirement that only offset projects *within* California’s geographic boundaries could ever qualify for DEBS. Additionally, an interpretation of AB 398 that would foreclose the potential for any out-of-state offset project to ever qualify for DEBS may raise serious concerns under the Dormant Commerce Clause of the U.S. Constitution. Therefore, CARB’s interpretation of AB 398 both is textually correct and reasonably avoids constitutional doubt about the validity of DEBS.

With respect to commenters’ assertion that CARB’s approach to DEBS is contrary to the definition of “direct emission reduction” in AB 32, CARB staff notes that this definition is irrelevant for purposes of determining DEBS under AB 398. AB 398 does not equate the terms “direct emission reduction” and “direct environmental benefits,” and both the 45-Day and 15-Day amendments adhere to the AB 398 language. AB 398 recognizes that offset projects may produce DEBS, and CARB’s adopted amendments effectuate the direction of AB 398.

In addition, CARB staff is unclear how the implementation of the DEBS provisions that follow the direction of AB 398 could negatively impact implementation of other statutory requirements, such as AB 197. The adopted amendments are consistent with AB 197. As noted in Response to 45-Day Comment G-3.1, the DEBS requirement clearly specifies that the assessment is based on the reduction for any air pollutant in the State that is not credited pursuant to the applicable Compliance Offset Protocol or a reduction or avoidance of any pollutant that is not credited pursuant to the applicable Compliance Offset Protocol that could have an adverse impact on the waters of the State.

Finally, CARB staff determined that all in-state projects do deliver DEBS in California based on an assessment of the direct environmental benefits provided by each Compliance Offset Protocol beyond the GHG reductions credited by the protocols (see ISOR pp. 52-54). This assessment included an evaluation of recent studies and literature documenting environmental benefits resulting from similar activities as projects under the Compliance Offset Protocols. See Response to 45-Day Comment G-3.7 for further discussion of CARB’s development of the protocols’ standardized mechanisms. The commenter

opining that projects within California do not deliver DEBS has provided no evidence to support its assertion.

Constitutionality of DEBS Requirement

G-3.3. Comment:

We write to provide the comments of Indigenous Peoples Reducing Emissions (“IPRE”) on several issues relating to offsets and the proposed implementation of AB 398’s quantitative limit on the use of offsets that “no more than one-half may be sourced from projects that do not provide direct environmental benefits in the state” (“DEBS”). We incorporate by reference IPRE’s comment letters dated March 19, 2018 and May 18, 2018 that were submitted to CARB during the “Discussion Draft” phase that preceded the current 45-Day rulemaking; copies of those letters are attached hereto as Exhibits A and B...

EXHIBIT A...

We write to provide the comments of Indigenous Peoples Reducing Emissions (“IPRE”) on that portion of the Discussion Draft that outlines CARB’s proposed approach to implementing AB 398’s quantitative limit on the use of offsets that “no more than one-half may be sourced from projects that do not provide direct environmental benefits in the state” (“DEBS”). AB 398 defines DEBS as “the reduction or avoidance of emissions of any air pollutant in the state or the reduction or avoidance of any pollutant that could have an adverse impact on waters of the state.”...

IPRE recognizes and appreciates the global leadership that the State of California has taken with respect to combatting the drivers of climate change and reducing greenhouse gas (“GHG”) emissions. California’s Cap-and-Trade Program is an innovative approach to achieve these goals and for several years now has served as an important national and international model. CARB’s offsets program has enabled the Cap-and-Trade model to be more than an inspiration to other jurisdictions: it has provided a means for communities outside of California – including EJ communities like those of IPRE’s members – to partner with California in the global fight against climate change, a fight that must be undertaken on a global level if we are to succeed. By creating incentives for others to partner with California in this global effort, CARB’s offset program has been a critical component of California’s leadership on climate issues. However, if construed in an unconstitutional manner, AB 398’s DEBS requirement threatens to undermine California’s leadership.

2. DEBS and the Dormant Commerce Clause

The July 17, 2017 Assembly Floor Analysis of AB 398 discusses the use of carbon offsets. It notes that the majority of the compliance offsets have been generated by projects located outside of California, and identifies Arkansas, Michigan, New Hampshire, and Ohio as the major sources of carbon offsets. To address this, AB 398’s DEBS requirement creates a preference for offsets that “provide direct environmental

benefits *in the state*.” This raises the specter of litigation brought under the constitutional law doctrine known as the Dormant Commerce Clause (“DCC”). Under the DCC doctrine, a state law is invalid if it discriminates against interstate commerce or if it places an undue burden on interstate commerce. A review of the recent Circuit decisions construing the DCC doctrine in the context of challenges to a variety of state climate change programs reveals the vulnerability of California’s program if it does not implement the DEBS requirement in a prudent manner.

In Rocky Mountain Farmers Union v. Corey, 730 F.3d 1070 (9th Cir. 2013), CARB withstood a DCC challenge related to the state’s low carbon fuel standard (“LCFS”). The LCFS was adopted to reduce the carbon intensity of motor vehicle fuel sold within the state. CARB overcame the challenge by demonstrating that the higher carbon intensity ascribed to ethanol from the Midwest was due to an objective analysis that incorporated the emissions associated with the transportation of the fuel – and not an effort to discriminate against out-of-state producers. The *Rocky Mountain* court found the state was regulating internal markets and setting incentives for firms to produce less harmful products for sale in California and not regulating extraterritorial conduct. Unlike *Rocky Mountain*, AB 398’s preference is not based on an objective difference between offsets produced in-state vs. those produced out-of-state. Both are generated in accordance with California’s offset protocols, the purpose of which is reduce or sequester GHG emissions without regard to location.

Similarly, in *Energy and Environment Legal Institute (“EELI”) v. Epel*, 793 F.3d 1169 (10th Cir. 2015), the court found that the DCC was not violated because Colorado’s 20% Renewable Portfolio Standard (“RPS”), while it applied to electricity on a multi-state grid, was not regulating extraterritorial conduct because it established a uniform quota applicable regardless of origin. The court stated that, “without a regulation more blatantly regulating price and discriminating against out-of-state consumers or producers,’ the near *per se* rule of invalidation would not apply.” If the DEBS requirement is implemented in a manner that expressly preferences in-state offsets over out-of-state offsets, then it may not, as Colorado’s RPS did, avoid the “*per se* rule of invalidation.”

A similar result occurred in a DCC case brought against Connecticut’s renewable portfolio standards. In *Allco Finance v. Dykes*, 861 F.3d 82 (2nd Cir. 2017), the relevant state program distinguished between renewable energy credits based on their place of origin. The court held that the program did not amount to discrimination against interstate commerce, as there were legitimate regulatory reasons to consider credits produced in Connecticut differently from those produced outside of the state relative to the reduction of in-state air pollution. The language in the Connecticut program is similar to that in AB 398. However, the Connecticut program made geographic distinctions only insofar as those distinctions were made by a federally-supervised program that encouraged the creation of independent (in-state) and regional organizations for the defensible purpose of encouraging the management of the electric grid (which is itself

regional). See *Allco Finance*, 861 F.3d at 106. AB 398 makes geographic distinctions without reference to any federal program and without reference to a regional grid. Global warming, by definition, does not respect political or even geographic boundaries. Thus, given these distinctions and the fact that this decision was issued by the Second Circuit and not the Ninth (which includes California), The *Allco Finance* decision by no means indicates that a challenge brought against California's offset program will have similar results.

The language of AB 398 also resembles that of the Minnesota statute addressed by the decision in *North Dakota v. Heydinger*, 825 F.3d 912 (8th Cir. 2016), where the program was found to violate the Dormant Commerce Clause. In *Heydinger*, while the judges on the panel were split with regard to preemption and DCC rationales, they were united in invalidating Minnesota's statute that prohibited any person from importing or committing to import power from an out-of-state, new large energy facility, or from entering into a new long-term power purchase agreement that would increase Minnesota's statewide carbon dioxide emissions. In short, though it purported to address the state's GHG emissions, it clearly regulated commerce into and out of the state. If not properly implemented, the DEBS requirement could be held to be blatantly discriminatory just as Minnesota's statute was.

There is one clear rule that can be derived from these complex and somewhat conflicting decisions, and that is that the law concerning the Dormant Commerce Clause is uncertain. Enough ambiguity exists in the case law to encourage a litigant to challenge California's offset Program with the goal of invalidating it, and such a challenge could pose a threat to the state's entire Cap-and-Trade Program. To prevent potential challenges to the implementation of AB 398's DEBS requirement, CARB should avoid making simple, bright line rules that could be construed as blatantly discriminating against offsets generated out-of-state.

For this reason, IPRE supports the approach to implementing the DEBS requirement outlined in the Discussion Draft. In sum, CARB proposes to define DEBS by using the exact words of AB 398 and to develop a process that allows proponents of a particular offset project to make a case as to why that project meets the DEBS criteria, drawing upon the facts of the project and the available science. This is a prudent approach that reflects a welcome administrative humility. Climate science is fast developing and new data is being generated every day that increases our understanding of climate change and its impacts. If CARB were to establish static, bright line rules today, it could well exclude an offsets project that does provide direct environmental benefits in the state – DEBS. An example of the difficulty of developing a workable static interpretation of the DEBS criteria is evidenced by an Ozone Depleting Substances (“ODS”) project located in Compton, California. Operated by Appliance Recycling Centers of America, the project produces carbon offsets by extracting refrigerant and other harmful chemicals from the appliances they recycle. These appliances are sent to the recycling center from all over the country. A strict, static reading of the DEBS requirement could exclude this

project. Similar complexities can arise with many other offsets projects. It would be impossible for CARB to anticipate all such complexities today and develop fair rules that do not improperly discriminate based simply on location of the project as opposed to DEBS.

As noted above, CARB proposes to adopt AB 398's definition of DEBS as "the reduction or avoidance of emissions of any air pollutant in the state or the reduction or avoidance of any pollutant that could have an adverse impact on the waters of the state." As the science of climate change continues to evolve, the mechanisms that contribute to and reduce adverse climate effects are changing. Science has not yet reached a point where we are able to determine all of the factors that causes air pollutants in a particular geographic area nor what will result in the avoidance of pollutants in the environment. The air does not respect state boundaries. As our knowledge of environmental challenges continue to expand, new policies and technologies will be required to address these changes. Implementation of California's offset program must accept this reality and provide a mechanism whereby a project's environmental benefits to the state is supported by scientific evidence, as opposed interpretation of the statute which on its face appears to discriminate against California's out-of-state partners. (IPRE)

Response: While all in-state projects automatically provide DEBS as analyzed in the ISOR, as the commenter points out, CARB does not draw a bright line for the determination of DEBS for out-of-state projects. The adopted amendments create a process by which a review of the project documentation for an out-of-state project, including the latest scientific evidence provided by the project operator, can be used to demonstrate that the out-of-state project provides DEBS.

The Commerce Clause provides that "Congress shall have Power ... [t]o regulate Commerce with foreign Nations, and among the several States." U.S. Const., Art. I, § 8, cl. 3. Although the Constitution does not explicitly limit the power of states to regulate commerce, courts have long interpreted the Commerce Clause as an implicit restraint on state authority, even in the absence of a conflicting federal statute. See, e.g., *Case of the State Freight Tax*, 15 Wall. 232, 279 (1873). This so-called "dormant" aspect of the Commerce Clause (i.e., Dormant Commerce Clause) means that a statute that directly controls commerce outside the bounds of a state—i.e., is "extraterritorial"—is subject to strict scrutiny, a highly demanding form of court analysis. See *Healy v. Beer Institute, Inc.*, 491 U.S. 324, 336 (1989). Additionally, even if a statute is not extraterritorial, that statute may face strict scrutiny if it discriminates on its face against interstate commerce. *American Trucking Ass'ns, Inc. v. Michigan Pub. Serv. Comm'n*, 545 U.S. 429, 433 (2005). Furthermore, even if a statute is facially neutral, a court could also apply strict scrutiny if the state law has a discriminatory purpose or effect. Finally, if there is no discrimination in purpose or effect, strict scrutiny does not apply. Rather:

Where the statute regulates even-handedly to effectuate a legitimate local public interest, and its effects on interstate commerce are only incidental, it will be upheld unless the burden imposed on such commerce is clearly excessive in relation to the putative local benefits. If a legitimate local purpose is found, then the question becomes one of degree. And the extent of the burden that will be tolerated will of course depend on the nature of the local interest involved, and on whether it could be promoted as well with a lesser impact on interstate activities

Pike v. Bruce Church, Inc., 397 U.S. 137, 142 (1970).

The adopted amendments are fully consistent with the U.S. Constitution, as they do not regulate extraterritorially, discriminate against out-of-state commerce (either facially or in purpose or effect), or place an undue burden on such out-of-state commerce. Rather, CARB *allows* out-of-state offset projects to demonstrate that they qualify for DEBS. Additionally, AB 398 itself and the adopted amendments are motivated by a legitimate non-protectionist objective: ensuring the production of direct environmental benefits in California (regardless of where such projects occur); AB 398 does not seek to protect local economic interests. Indeed, AB 398 and the adopted amendments limit the qualification for DEBS to projects based on whether they provide direct environmental benefits in California, not based on their physical location. CARB's approach to DEBS thus is akin to the policies that were upheld in *Rocky Mountain Farmers Union v. Corey*, 730 F.3d 1070 (9th Cir. 2013); *Energy and Environment Legal Institute ("EELI") v. Epel*, 793 F.3d 1169 (10th Cir. 2015); and, *Allco Finance v. Dykes*, 861 F.3d 82 (2nd Cir. 2017). *North Dakota v. Heydinger*, 825 F.3d 912 (8th Cir. 2016) is inapposite because only one judge of the three-judge panel found that the Minnesota law in that case violated the Dormant Commerce Clause. Therefore, CARB's approach to DEBS is permissible under the Dormant Commerce Clause.

Application of DEBS to GHGs

G-3.4. Comment:

2. The Proposed Definition of DEBS Requires that a Balance be Struck Between Being Superfluous and Unconstitutional

The proposed definition of DEBS in Section 95802(a) simply adopts the language of AB 398, and thus there can be no question that CARB is adhering to the Legislature's directive. It provides: "Direct environmental benefits in the State' refers to the reduction or avoidance of emissions of any air pollutant in the state or the reduction or avoidance of any pollutant that could have an adverse impact on waters of the state." IPRE supports this approach, though that does not end the analysis because the statutory language is ambiguous.

As the U.S. Supreme Court held in *Massachusetts v. Environmental Protection Agency*, 549 U.S. 497, 532 (2007), greenhouse gases (“GHGs”) are pollutants. It is a maxim of the science of climate change mitigation that the reduction or avoidance of GHG emissions anywhere provides a benefit everywhere. This is reflected in the title of AB 32: the *Global Warming Solutions Act*. Given this, all offset projects provide DEBS regardless of whether in or outside of California. There is nothing in the legislative history that sheds light on what the Legislature intended with this language. None of the legislative reports on AB 398 address what the term “pollutant” in the DEBS provision means,⁵⁰³ and California courts generally do not give credence to *post hoc* statements by individual legislators as to what the Legislature meant.

Faced with this, many, including the Independent Emissions Market Advisory Committee (“IEMAC”), have “assume[d]” that the DEBS provision “refers to environmental benefits that occur in addition to those impacts that are traceable to reduced or avoided GHG emissions; otherwise, the language of the statute would seem superfluous.” 2018 Annual Report of the IEMAC (Oct. 22, 2018) at 46. The IEMAC relies on “a relatively standard canon of statutory construction that words in a statute are to be given effect rather than to have no consequence.” *Id.*

Another standard of canon of statutory construction is that ambiguous provisions are not to be given meaning that would be unconstitutional. As we discussed in our March 19 comment letter, see Exhibit A, the DEBS provision must be construed narrowly lest it fall afoul of the constitutional law doctrine known as the Dorman Commerce Clause (the “DCC”). Under the DCC doctrine, a state law is invalid if it discriminates against or places an undue burden upon interstate commerce. In that letter we reviewed the recent Circuit decisions construing the DCC doctrine in the context of challenges to state climate change programs and showed that the DEBS requirement must be construed carefully lest a court rule it to be unconstitutional.⁵⁰⁴

Still another canon of statutory construction is that the words are to be given their plain meaning. A close reading of the DEBS provision reveals that it is not appropriate to rely upon an assumption that the Legislature intended to exclude GHGs from both uses of the term “pollutant” in the provision. In sum, the DEBS provision treats air pollutants differently than water pollutants. The first part refers to “the reduction or avoidance of emissions of any air pollutant in the state.” The object of the phrase is “emissions,” which is qualified by “air pollutant” and “in the state.” As it refers to emissions in the

⁵⁰³ The only one that could be construed to have done so is the July 17, 2017 Assembly Floor Analysis, which states at pages 7-8: “While ARB has justified the reliance on compliance offsets as an opportunity for low-cost reductions from outside the cap, others have questioned how offsets, particularly from sources outside the state, might meet AB 32’s (Núñez), Chapter 488, Statutes of 2006, requirements or otherwise produce benefits in California.”

⁵⁰⁴ The analysis in that letter has not changed in light of the Ninth Circuit’s subsequent decision in *Am. Fuel & Petrochemical Manufacturers v. O’Keefe*, 903 F.3d 903 (9th Cir. 2018). It addressed a DCC challenge to Oregon’s low carbon fuel program that is substantially the same as California’s, and the Court followed its earlier decision in *Rocky Mountain Farmers Union v. Corey*, 730 F.3d 1070 (9th Cir. 2013), a case that we discussed in our letter.

state, it may be defensible to assume that the Legislature meant to exclude GHGs from the types of pollutants being emitted.

The second part refers to “the reduction or avoidance of any pollutant that could have an adverse impact on waters of the state.” This phrase lacks the geographic limitation that applies to air pollutants. It does not refer to the discharge of any water pollutants in the state. The object of the phrase is “pollutant” – i.e., the thing rather than the action – and it is qualified by much broader language than those qualifying “emission” in the first part. “Could have an adverse impact” is clearly subject to later determinations, and “waters of the state” is clearly broader than emissions that occur “in the state.” (This is made plain if one considers the large body of case law under the federal Clean Water Act construing the analogous term “waters of the United States.”) Certainly, the Legislature takes a broad view as to what constitutes “waters of the state, as is reflected in the very first provision of AB 32: “The potential adverse impacts of global warming include . . . a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, [and] damage to marine ecosystems and the natural environment.” Health & Safety Code Section 38501(a).⁵⁰⁵

Given both the much broader language used in the second part of the DEBS provision and the danger of falling afoul of the Dormant Commerce Clause if one too narrowly construes just how direct the environmental benefits in the state must be, it would be inappropriate and quite possibly unconstitutional to assume that the Legislature meant to exclude GHGs from the meaning of “any pollutant that could have an adverse impact on waters of the state.” Happily, CARB has given meaning to this distinction in its crafting of Section 95989, the proposed regulation implementing the DEBS provision of AB 398...

3. Section 95989(b)’s Distinction Between “Emissions of Any Air Pollutant in the State” and “Any Pollutant that Could Have an Adverse Impact on Waters of the State” Should be Retained and Clarified...

Section 95989(b) expressly provides that the benefit of “the reduction or avoidance of emissions of any air pollutant” must be of one “that is not credited pursuant to the applicable Compliance Offset Protocol in the State” – i.e., that it be something other than a GHG. Section 95989(b) does not contain a parallel exclusion of GHGs from the benefit provided by “the reduction or avoidance of any pollutant that could have an

⁵⁰⁵ The State has followed through on this broad understanding. See the State Water Resources Control Board’s Resolution 2017-0012, Comprehensive Response to Climate Change, (available at https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2017/rs2017_0012.pdf), Resolution No. 10 of which directs the Regional Boards to identify actions to address the recommendations of the West Coast Ocean Acidification and Hypoxia Science Panel (available at <http://westcoastoah.org/wp-content/uploads/2016/04/OAH-Panel-Key-Findings-Recommendations-and-Actions-4.4.16-FINAL.pdf>).

adverse impact on waters of the state.” As discussed above, this is consistent with the plain language of the DEBS provision, and IPRE supports it.

Nonetheless, we agree with the recommendation of the IEMAC Report that the language of Section 95989(b) should be clarified to make this distinction clear. This clarification is needed because subsections (1)-(3) of Section 95989(b), which specify the kinds of scientific information that can be relied upon to make the requisite showing, elides the distinction. Each subsection inconsistently and inappropriately collapses the difference between air and water pollutants to simply refer to the “reduction or avoidance of any pollutant in the State.” It’s more concise, but unfortunately creates ambiguity. We urge the Board to make it clear that if a sufficient scientific showing is made that an out-of-state offset project that reduces or avoids any pollutant – including any GHG – that could have an adverse impact on waters of the state, then it shall be determined to provide DEBS. Doing so will help to ensure the regulation’s consistency with the statute and reduce the risk of a judicial finding that it is unconstitutional...

5. Conclusion

We appreciate the opportunity to provide these comments. In general, we support the proposed amendments, including most of the provisions relating to offsets. However, it is critical that Section 95989(b) be clarified to confirm the distinction between air and water pollutants in the process for determining whether an out-of-state project provides DEBS, and also that that process is replicable...

IPRE and its members are committed to continuing to partner with the State in its efforts to combat climate change – in particular those that are Alaska Native entities. Alaska is currently the state most effected by climate change. Sea level rise and ice flow change is already requiring communities to be moved, melting permafrost, melting glaciers, and many other effects. Alaska and California both border on the Pacific Ocean and are both contending with the effects of ocean acidification and hypoxia caused by climate change, as discussed in footnote above. The clarifications and changes suggested set forth here will greatly enable IPRE’s members to continue to partner with California in these crucial efforts to combat climate change – and they also will greatly improve the ability of the State to partner with others as well. While the offsets program is a small part of California’s efforts to reduce GHG emissions, it is a critical component. It is the primary means by which it incentivizes those outside the State to join with it in the fight to combat climate change...

Attachment A...

3. DEBS and the Waters of California’

The definition of DEBS quoted above includes “the reduction or avoidance of any pollutant that could have an adverse impact on waters of the state.” These are broad terms. As the U.S. Supreme Court held in *Massachusetts v. Environmental Protection Agency*, 549 U.S. 497 (2007), GHGs are pollutants, and thus the reference to “any

pollutant” includes GHGs.⁵⁰⁶ GHGs have a considerable adverse effect on many aspects of our environment, including being a major contributor to climate change, which in turn has significant negative effects on the waters of the State of California.

Climate change has affected California in many ways, including persistent drought and increased wildfires, rising sea level and threats to California’s coasts, and warmer waters throughout the state. Each of these effects of climate change has an adverse impact on the waters of the state. The historic droughts that the State has endured has lowered the levels of the Colorado River and the California snowpack, limiting the amount of water that the state has for all uses. The State’s wildfires, which recent experience has shown can be severe indeed, require the use of water for control and maintenance, and also increase the susceptibility of watersheds to flooding and erosion, which subsequently impair water supplies. Runoff from burned regions also enter the state’s water bodies, leading to increased contamination. Warmer water throughout the state has numerous adverse impacts, including loss of the state’s native fish, increasing pollutant levels and the proliferation of invasive species.

In implementing AB 398’s DEBS requirement, IPRE calls upon CARB to consider the myriad factors that have an “adverse impact on the waters of the state.” All of the offset projects currently being developed by IPRE are reducing GHG emissions, providing a solution to the challenges of climate change and as a result providing a direct environmental benefit to the state of California by reducing an adverse impact on the state’s waters.

IPRE and its members are committed to continuing to partner with the State in its efforts to combat climate change. Implementation of AB 398’s DEBS criteria presents considerable risks and challenges both to the Cap-and-Trade Program and California’s efforts to get others to partner with its efforts. IPRE wishes to work with CARB to ensure that that the risks of DCC litigation can be avoided and the challenges to nondiscriminatory implementation of DEBS overcome. While the offsets program is a small part of California’s multifaceted efforts to reduce GHG emissions, it is a critical component. It is the primary means by which CARB incentivizes those outside the State to join with it in the fight to combat climate change, including drawing in partners in states that often otherwise differ from California, thereby helping to broaden the support for the fight against climate change in important ways. To ensure that California continues its role in creating national and international solutions to fighting climate change it is critical that CARB implement the DEBS requirement in a manner that continues to ensure the environmental integrity of the Cap-and-Trade Program and is not improperly discriminatory. (IPRE)

⁵⁰⁶ “[T]he fact that a statute can be applied in situations not expressly anticipated by Congress does not demonstrate ambiguity. It demonstrates breadth” (internal quotation marks omitted). Because greenhouse gases fit well within the Clean Air Act’s capacious definition of “air pollutant,” we hold that EPA has the statutory authority to regulate the emission of such gases from new motor vehicles.” 549 U.S. at 532.

Response: With respect to the commenter indicating that all GHGs should be assessed, CARB continues to agree that GHGs constitute air pollutants but also notes that the 45-Day proposal and the 15-Day changes clarify that the regulatory approach will be to consider any air pollutant in the State that is not credited pursuant to the applicable Compliance Offset Protocol or a reduction or avoidance of any pollutant that is not credited pursuant to the applicable Compliance Offset Protocol that could have an adverse impact on the waters of the State. This means that GHGs that are credited pursuant to an applicable Compliance Offset Protocol will not result, in and of themselves, in a project qualifying for the DEBS determination. This approach, as indicated in the ISOR (pp. 49-54), took into account science, stakeholder comments, and Legislative discussions regarding the DEBS provision in AB 398.

Under the adopted amendments, a project located outside of California but in a watershed that flows into California can submit information to seek a determination that the project provides DEBS. The project would not automatically be determined to provide DEBS, but if the Offset Project Operator or Authorized Project Designee provided the information requested in section 95989(b), CARB staff could make the determination that the project provides DEBS.

The 15-Day amendments appropriately clarified the original intent of section 95989 that the phrase “that is not credited pursuant to the applicable Compliance Offset Protocol” applies to both air pollutants and pollutants that could have an adverse impact on waters of the State. This is the only reasonable interpretation of AB 398. AB 398 limits the use of offsets from projects that do not provide direct environmental benefits and defines “direct environmental benefits in the state” as “the reduction or avoidance of emissions of any air pollutant in the state or the reduction or avoidance of any pollutant that could have an adverse impact on waters of the state.” The ISOR correctly notes (p. 167) – with respect to both air and water pollutants – that “[t]he reductions must be in addition to any GHG emissions reduction or removal enhancements that have received ARB offset credits. These could include air quality benefits such as reductions in: smog, smog precursors, dust, PM, NO_x, SO_x, odor, GHGs other than those for which the project receives credits, and water quality benefits such as reduced chemical contamination or reduced erosion.”

The commenter’s interpretation would render AB 398’s DEBS limitation a nullity. In the commenter’s view, all GHG emissions have an adverse impact on waters of the state; so, reducing GHG emissions (regardless of where they occur) must qualify for DEBS. By this logic, any offset project located anywhere in the world would qualify for DEBS. If that were the case, the set of all offset projects would be coextensive with offset projects providing DEBS. In turn, the AB 398 DEBS requirement would be no limitation at all. CARB cannot read AB 398 to make the

DEBS requirement meaningless, as that would be contrary to the plain meaning of AB 398 and the intent of the Legislature in enacting AB 398.

Additionally, the commenter's interpretation provides no meaning to the term "direct" in AB 398. "[D]irect environmental benefits in the state" is "the reduction or avoidance of emissions of any air pollutant in the state or the reduction or avoidance of any pollutant that could have an adverse impact on waters of the state." CARB has determined that all in-state offset projects provide DEBS and has created a process for out-of-state projects to demonstrate that they provide DEBS. However, the AB 398 definition of DEBS would be vitiated by an interpretation that purports to allow any GHG reduction anywhere to qualify as a direct environmental benefit in California. Therefore, CARB declines to make the change requested by the commenter.

Clarifying DEBS Criteria for Waters of the State

G-3.5. Comment:

We support the recommendation of the language to clarify how a project qualifies for DEBS designation and suggest the following additional language (in italics) just to remove any ambiguity.

- a. ... to qualify as an offset credit providing direct environmental benefits in state, a project must reduce or avoid not only greenhouse gas emissions but at least one additional air *pollutant in the state* or water pollutant that "could have an adverse impact on waters of the state."

See attached white paper ("A Case for Offsets") [not attached] authored by Dentons in March 2017 for additional comments and information. (DENTONS) [*CARB note: no white paper was attached to the submitted comment so CARB staff cannot respond to the additional indicated comments*]

Response: The above text cannot be identified in any of the formal rulemaking documents. It appears that the commenter is trying to assure that air pollutants that have adverse impacts (to the air) in the State, in addition to air pollutants that could have an adverse impact on the waters of the state, are considered in the DEBS evaluation. There was never any intent in the adopted amendments to limit air pollutants to the subset that affects the waters of the state. The requested change is what was intended, and staff believes the adopted amendments already make this clear. As noted in the ISOR (pp. 49-54), CARB staff adhered to the statutory definition of direct environmental benefits in the state from AB 398. Therefore, no change is necessary.

Using GHG Emissions to Qualify as DEBS

G-3.6. Comment:

CARB staff should also clarify that net avoided GHG emissions cannot be used to qualify as a DEB. Offsets do not result in net climate benefits; for every offset, CARB issues credits that are eventually used by emitters. Offsets are an inherently indirect way of saving GHGs. (CEJA)

Response: The comments present a misunderstanding of the adopted amendments. Proposed section 95989(b) precludes any GHG emissions reductions credited by a Compliance Offset Protocol from being used to demonstrate DEBS. See Response to 45-day Comment G-3.1. Therefore, no change is necessary.

Moreover, CARB strongly disagrees that offsets do not result in a net climate benefit. Besides providing direct and verifiable climate benefits, the offsets program increases compliance flexibility and contains costs associated with complying with Cap-and-Trade Program requirements. The offsets program also:

- Stimulates emissions-reduction opportunities and technological innovation in sectors outside of the capped sectors.
- Encourages early emissions-reduction activities while providing a transition period for industry to develop and deploy low-GHG technologies.
- Promotes technology and knowledge transfer between developed and developing countries, such as helping to preserve rainforests in danger of deforestation.
- Provides environmental, social, and economic benefits, such as reduced air or water pollution (environmental co-benefits) through improved land management practices and wildlife habitat.

DEBS Direct vs. Indirect

G-3.7. Comment:

Direct Environmental Benefits

NextGen appreciates the clarification staff has provided in the proposed rule that out-of-state offsets that wish to be considered as providing Direct Environmental Benefits to the state of California must demonstrate air or water quality benefits over and above any greenhouse gas or climate-related benefits associated with the project. It would be illogical to consider greenhouse gas reductions or the associated climate benefits from those reductions from offsets projects “Direct Environmental Benefits” for two reasons.

First, offsets are, by definition, one half of a compliance event, with the other party to the transaction emitting additional greenhouse gases in California over and above what would otherwise be permitted. The emissions “reductions” associated with these projects cannot be separated from the additional emissions they enable. Together, the additional emissions and the reduction from the offsets result in a net cancellation, with no added “benefit” coming from the GHG pollution reduction associated with the offset project.

Second, the text of AB 398 designates two categories of out of state offsets: those that do, and those that do not provide Direct Environmental Benefits to California. In order for any project to qualify as an offset, it must reduce GHGs. It would therefore render this statutory distinction meaningless if greenhouse gas reductions and their associated climate-related benefits provide a basis for designating a project as providing Direct Environmental Benefits. Such a reading of the statute would violate both a plain language reading and the established canons of statutory interpretation.

The proposed rule correctly recognizes this distinction, but NextGen believes some ambiguity remains that could potentially lead to some projects inappropriately seeking designation under the DEBs category. We therefore urge the Board to provide additional clarification that environmental benefits to California’s air and water must be “Direct,” as opposed to indirect...

Attachment 1: October 12, 2017 Workshop Comments

3. Offsets

Covered sources under the cap and trade program may use offsets to satisfy part of their compliance obligations with offset credits, provided that they represent emission reductions that are real, permanent, quantifiable, verifiable, enforceable, and additional.⁵⁰⁷ AB 398 establishes a Compliance Offsets Protocol Task Force and further restricts the use of offsets for compliance purposes to no more than 4 percent of each covered entity’s compliance obligation from 2021 through 2025 and no more than 6 percent from 2026 through 2030, of which no more than one-half may be sourced from projects that do not provide environmental benefits in the state.

The offset provisions adopted in AB 398 reflect concern by the Legislature that the use of offsets could dilute or undermine the benefits of cap and trade in California, particularly in disadvantaged communities. CARB should respond to these concerns not simply by applying the mandated numerical limits, but also by reexamining its offset protocols to increase confidence that offsets are indeed producing benefits to California, and in particular that offset credits represent greenhouse gas emission reductions from uncapped sources that are additional to any that would occur in the absence of the offsets program.

⁵⁰⁷ Health and Safety Code §38562(d)(1) and (2)

At the October 12th workshop, some members of staff and the public expressed confusion as to whether the subset of offsets that provide direct environmental benefits to California must be produced by projects within the state of California. These projects should occur within the state of California or, at minimum, prevent direct effluent pollution to California waters. All offsets must produce real, permanent, verifiable, and additional greenhouse gas emissions reductions. For the distinction of some offsets as having direct environmental benefits to the state to have any meaning, these direct benefits must be over and above any indirect benefits attributable to the offset projects' greenhouse gas mitigation. It is our position that this designation in no way violates the Commerce Clause of the federal Constitution, but if CARB is concerned about this issue, it should seek clarification from the California Department of Justice through an Attorney General's Opinion, rather than prejudging the issue by foreclosing the possibility that these offsets be designated specifically for projects that occur within California...

Attachment 2: March 2, 2018 Workshop Comments

5. Offsets

a. Direct Environmental Benefits

Staff has requested feedback on how offsets may be qualified as providing Direct Environmental Benefits to the state of California (DEBs) for the purposes of compliance with AB 398. Staff has proposed to define DEBs as "the reduction or avoidance of any air pollutant in the state or avoidance of any pollutant that could have an adverse impact on waters of the state," to qualify any in-state offset project as compliant with this requirement, and to allow for individualized project reviews for offsets that are neither geographically inside California nor directly beneficial to a river that flows through California.

These guidelines provide a useful starting place for distinguishing projects with direct versus indirect benefits to California. Staff should provide more specificity on how projects may fail to meet these requirements.

First, CARB should clarify that, for the purposes of DEBs certification, the pollution reductions or avoidances from an offset project must occur as a direct, rather than indirect effect of the offset project, and that those reductions must result in air or water quality benefits inside the geographic boundaries of California. For example, an out of state anaerobic methane digester may directly reduce some air pollutants that would otherwise be emitted from the undigested feedstock, but unless it is clear that these pollutants would affect air quality in California, these pollution reductions should not qualify as DEBs. Similarly, the combustion of that methane for onsite space heating may indirectly reduce emissions that would otherwise have occurred if the onsite operations had providing the space heating from another source, or the operation may indirectly reduce emissions elsewhere if the captured methane is injected into a natural gas pipeline for sale as RNG. In either case, whether these indirect emission reductions

occur in California or not, they should not be considered DEBs because they are, by definition, not “Direct.”

Second, Staff should clarify that the reduction or avoidance of “any air pollutant” refers to air pollution reductions above and beyond any greenhouse gas reductions that occur as a result of the project. Staff indicated that this is the intent of the proposed rule, and agreed that it is the clear intent of the statute in establishing DEBs offsets as a separate category from non-DEBs offsets. We are requesting that Staff clearly make this distinction in the regulatory documents as well.

Finally, staff should indicate clearly to offsets project developers that the bar for showing that out of state projects provide DEBs is a high one, and one that is increasingly difficult to satisfy, the farther a project is from California. CARB would be well within its rights to exclude out of state offsets altogether from eligibility for DEBs designation. Some stakeholders have expressed concern that this clear geographic distinction may violate the federal Commerce Clause, but this concern is misplaced. CARB is not seeking to prevent the purchase or sale of offsets, nor is it engaged in any discriminatory or protectionist behavior, nor is it seeking to regulate activities that occur outside of California. CARB offers regulated entities the opportunity to meet a portion of their compliance obligation for the voluntary cap and trade program through the voluntary alternative compliance mechanism of purchasing offsets that meet certain standards of effectiveness. CARB’s role in determining the form of voluntary alternative compliance within a voluntary alternative compliance air pollution reduction program bears no connection whatsoever to the federal Commerce Clause or the protectionist behavior it seeks to prevent. CARB should therefore feel no obligation to accept out of state offsets (or any other offsets for that matter) at all merely out of concern for Commerce Clause compliance. CARB should therefore prioritize the clear intent of the legislature to ensure that at least half of the offsets provided for cap and trade compliance provide direct, tangible environmental co-benefits to California, and set a high bar for out of state projects to demonstrate that they meet these requirements. (NEXTGEN)

Response: With respect to commenter’s concerns that clarification needs to be made that only direct (not indirect) emissions reductions count as DEBS, CARB staff adhered to the statutory definition of direct environmental benefits in the state from AB 398, as discussed in the ISOR (pp. 49-54). The statutory definition (and thus the adopted regulatory definition) explicitly require environmental benefits to be direct. No change is necessary.

The commenter’s request for a holistic review of all Compliance Offset Protocols to reconfirm that they produce additional benefits from uncapped sectors is outside the scope of the current rulemaking, as no Compliance Offset Protocols were amended. Nonetheless, CARB notes that the Compliance Offset Protocols, and the reductions of GHG emissions they produce, do benefit California, since

GHG emissions globally contribute to the severe and unique climate impacts witnessed in the State. Moreover, looking at GHG emissions alone does not account for other benefits of the Compliance Offset Protocols to California, including spreading innovation in new technology and California's climate diplomacy.

During the public process for development of the Compliance Offset Protocols, CARB staff provided evidence indicating how GHG emissions reductions under each Protocol were additional and from uncapped sectors. By adoption of the Protocols, after a formal rulemaking process, the Board agreed. Each Protocol has standardized mechanisms for determining additionality by assessing both a legal requirement test and a performance standard evaluation. These standardized mechanisms have been reviewed and approved for each project by CARB-accredited third-party verifiers, by an Offset Project Registry, and by CARB before ARB offset credits are issued.

In a 2013 decision, the Superior Court of California found that CARB's "use of a standardized mechanism is supported by evidence contained in the administrative record" and that it is within CARB's "legislatively delegated lawmaking authority to choose standardized mechanisms." *Citizens Climate Lobby and Our Children's Earth Foundation v. California Air Resources Board* (San Francisco Superior Court, No. CGC-12-519554). In his decision, the judge wrote:

All parties agree that each and every reduction must be additional. They disagree on how to determine additionality. Determining additionality is difficult, and it is impossible to precisely delineate between additional and non-additional projects. (R24-4-7.) All additionality determinations suffer from this limitation, not just standards-based approaches. Petitioners ignore this reality and insist Respondent must use a perfect additionality mechanism or none at all. This argument is inconsistent with the science behind additionality and Petitioners own statements.

This decision was upheld on appeal. (*Our Children's Earth Foundation v. California Air Resources Board* (234 Cal. App. 4th 870 (2015))). All Compliance Offset Protocols approved by the Board since 2011 and all future Compliance Offset Protocols will continue to utilize a performance standard approach to establish a threshold that is significantly better than average, business-as-usual greenhouse gas emissions for a specified activity.

CARB staff is, as always, committed to ensuring the additionality of the offsets generated through Compliance Offset Protocols and to periodically reviewing Compliance Offset Protocols to ensure the continued additionality of offset credits generated.

With respect to commenter’s assertion that the level of review for DEBS needs to be high and get higher the farther away from California the projects is located, the bar for demonstrating DEBS, like participating in the offsets program in general, has been set high. However, the requirements for demonstrating DEBS will be the same regardless of out-of-state project location. While it may be more difficult to demonstrate DEBS the farther a project is from California, the project cannot be held to a different standard based on location.

No changes are required in response to this comment.

DEBS Tribal and Disadvantaged Communities

G-3.8. Comment:

3. DEBS should include public input in determining whether individual projects meet the qualifications, and the process should prioritize projects with benefits to the state’s tribal and disadvantaged communities...

Additionally, the Center proposes that project applicants be required to submit any information as to whether the project benefits disadvantaged and/or tribal communities and that CARB prioritize such projects in its decisionmaking. Notably, a recent study (“Cushing Study”) found that rather than investing in green projects within the state, an astounding seventy-five percent of offset credits went towards projects outside of California.⁵⁰⁸ Meanwhile, the Study found, from 2011-2015, disadvantaged communities within California experienced *increases in both GHG emissions and co-pollutant emissions* from regulated facilities disproportionately located in their neighborhoods.⁵⁰⁹ Incentivizing out-of-state projects while actively harming California’s disadvantaged communities undermines the intent of AB 398.⁵¹⁰

The intent of AB 398 to benefit disadvantaged communities is evident from the plain language of Health and Safety Code section 38591.1(a) (AB 398), which directs ARB to create a task force to create guidance for new offset protocols for a “market-based compliance mechanism for the purposes of *increasing offset projects with **direct environmental benefits in the state while prioritizing disadvantaged communities, Native American or tribal lands, and rural and agricultural regions.***” (Emphasis added.) It is clear from this language—one of only two places in the statute that “DEBS” is used—that any DEBS criteria must recognize and incorporate that the direct benefits should be

⁵⁰⁸ Cushing, Lara et al., “Carbon trading, co-pollutants, and environmental equity: Evidence from California’s cap- and-trade program (2011– 2015),” PLoS Med 15(7) (July 10, 2018) (“Cushing, Carbon Trading”), available at <http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1002604>.

⁵⁰⁹ Cushing, Carbon Trading.

⁵¹⁰ Note that the Office of the Senate Floor Analyses stated its understanding that, of the offset credits allowed, AB 398 “[r]equires 50% of all offsets to be *in* California.” See Senate Floor Analysis for AB 398, p. 5 (emphasis added).

not only within the boundaries of the state but also prioritize disadvantaged communities.

This reading is also consistent with the statutory scheme of California's climate regulation. As noted in the Senate Committee on Environmental Quality ("SCEQ") report for AB 398, AB 32 specified that prior to the inclusion of any market-based compliance mechanism in the regulations, ARB was required to (1) "consider the potential for direct, indirect, and cumulative emission impacts from these mechanisms, including localized impacts in communities that are already adversely impacted by air pollution," (2) "design any market-based compliance mechanism to prevent any increase in the emissions of toxic air contaminants or criteria air pollutants," and (3) "maximize additional environmental and economic benefits for California, as appropriate." Moreover, AB 197 (Garcia, 2016) directed ARB to consider social costs and prioritize direct emission reductions at large stationary, mobile, and other sources in order to protect disadvantaged communities.⁵¹¹

Moreover, to the extent CARB or others have raised dormant Commerce Clause concerns regarding the DEBS requirement, the clearer and more direct the environmental benefits are to California communities, the less likely a dormant Commerce Clause claim would survive in court.⁵¹² "The guiding principle in determining whether a state regulation discriminates against interstate or foreign commerce is whether either the purpose or the effect of the regulation is economic protectionism."⁵¹³ Here, the purpose of requiring in-state benefits from offset credits is clearly protecting California's communities from pollution-related harm, not economic protectionism. Indeed, the Cushing Study clearly supports the need for such regulation. The more the DEBS criteria focus on scientific- and health-based criteria and the benefits to local communities, the better the regulation will be able to withstand any dormant Commerce Clause challenges. (CENTERBIODIV)

Response: With regard to the commenter's request to require the submittal of documentation of benefits to tribal and disadvantaged communities, there is no such requirement identified in AB 398 vis-à-vis offset projects that qualify for DEBS. The only requirement is that no more than one-half of the quantitative offset usage limit may be sourced from projects that do not provide DEBS. This DEBS requirement (section 4 of AB 398) is distinct from the goal of prioritizing additional offset projects within tribal and disadvantaged communities, with which CARB is to receive guidance from

⁵¹¹ Health and Safety Code § 38562.5.

⁵¹² See e.g., *Rocky Mtn. Farmers Union v. Corey*, 730 F.3d 1070, 1087-88 (9th Cir. 2013) [upholding California's Low Carbon Fuel Standard against dormant Commerce Clause claims] ["Absent discrimination, we will uphold the law 'unless the burden imposed on [interstate] commerce is clearly excessive in relation to the putative local benefits.' *Pike v. Bruce Church, Inc.*, 397 U.S. [137,] 142."].

⁵¹³ *Pacific Northwest Venison Producers v. Smitch*, 20 F.3d 1008 (9th Cir. 1994); accord, *Rocky Mountain*, 730 F.3d at 1087.

the Compliance Offsets Protocol Task Force (section 7 of AB 398) once it is constituted. Therefore, no change is required.

With respect to commenter’s assertions that the DEBS provisions do not implicate any Commerce Clause concerns, CARB staff agrees that the adopted amendments are fully consistent with the U.S. Constitution, as they do not regulate extraterritorially, discriminate against out-of-state commerce (either facially or in purpose or effect) or place an undue burden on such out-of-state commerce. Rather, CARB allows out-of-state offset projects to demonstrate that they provide DEBS. CARB staff notes that, in balancing the science, stakeholder comments, and Legislative discussion, the adopted amendments ensure clear criteria for projects located outside of the State to seek a DEBS determination. Additionally, AB 398 itself and the adopted amendments are motivated by a legitimate non-protectionist objective: ensuring the production of direct environmental benefits in California (regardless of where such projects occur) and do not seek to protect local economic interests. Indeed, AB 398 and the adopted amendments limit the qualification for DEBS to projects based on whether they provide direct environmental benefits in California, not based on their physical location. In allowing out-of-state offset projects to qualify for DEBS, CARB is adhering to—and incorporates in the Regulation—the exact definition of “direct environmental benefits” in AB 398, which indicates that DEBS are assessed by whether the project provides direct environmental benefits in the State, not whether the project itself is located in the State. Therefore, CARB’s DEBS provisions are consistent with AB 398 and the U.S. Constitution. Also see Response to 45-Day Comment G-3.3 for additional discussion on DEBS and the Commerce Clause. Since the comments do not propose additional changes, no further response is required.

DEBS Direct vs Indirect

G-3.9. Comment:

We note that AB 398 defines the requirement as a “direct” environmental benefit related to the release of an air or water pollutant. In common parlance, a “direct” effect or benefit means that the activity itself is responsible for a change in the release of an air or water pollutant, in contrast to effects mediated by the market, global atmospheric circulation, or other secondary causal pathways which are more difficult to observe, predict, measure, and quantify. This commonplace understanding of the word “direct” is supported by existing law. AB 32 defines a direct emissions reduction thus: “*Direct emission reduction’ means a greenhouse gas emission reduction action made by a greenhouse gas emission source at that source.*”⁵¹⁴ DEBS therefore refers to a reduction or avoidance of an air pollutant in the state at its source, or the reduction or avoidance of a pollutant that adversely impacts waters of the state at its source...

⁵¹⁴ California Health & Safety Code § 38505(e)

In sum, we strongly recommend that ARB:...

- clarify that “direct environmental benefits in the state” means that the activity itself is responsible for a change in the release of an air pollutant located in the state or pollutant affecting water quality in the state, in contrast to effects mediated by secondary causal pathways like the market or global atmospheric circulation;... (HAYAETAL)

Response: With respect to the commenter’s concerns that clarification needs to be made that only direct, as opposed to indirect, emissions reductions count as DEBS, CARB staff adhered to the statutory definition of “direct environmental benefits in the state” from AB 398, as noted in the ISOR (pp. 49-54). See also Responses to 45-Day Comments G-3.2 and G-3.4.

DEBS Statutory Definition

G-3.10. Comment:

This comment letter calls attention to the following points... (5) CARB should ensure that its definition of direct environmental benefits provides real environmental benefits in California...

(5) CARB should strengthen its definition of direct environmental benefits to ensure that it leads to actual environmental benefits in California.

In our March comments, CEJA requested clearer and more robust requirements for the definition of direct environmental benefits (DEBS) to ensure that offsets actually result in real environmental benefits in communities. We support the proposed change clarifying that projects must provide avoided air or water pollution in California in addition to the greenhouse gas reductions that the project is receiving credit for.⁵¹⁵ This is an important change to ensure that the benefits are in addition to the greenhouse gas reductions already occurring. We also continue to recommend that CARB develop further guidance based on sound science to ensure that offsets actually result in real reductions. To do this, we support the steps and recommendations from Barbara Haya, Lara Cushing, Rachel Morello-Frosch, Manuel Pastor, Michael Wara, and David Wooley in their July 20, 2018 comments. (CEJA) (*CARB note: the July 20, 2018 letter referenced in this comment was not included as part of the comment submission, so CARB staff is not required to respond to that letter here. Additionally, that letter was submitted on July 26, 2018, in response to a June 21, 2018 informal workshop that had a closing date of July 5, 2018 for comments. Therefore, that letter was not timely submitted even to the comment period for which it was submitted. No further response is required. However, CARB staff would like to note that all issues raised by the commenters in their July 20,*

⁵¹⁵ See Statement of Reasons, p. 52.

2018 comments are addressed by Responses to 45-Day Comments G-3.2, G-3.4, G-3.11, G-3.13, G-3.16, G-3.17, and G-3.18.)

Response: With respect to commenter’s concerns that clarification need to be made to the definition of DEBS, CARB staff adhered to the statutory definition of direct environmental benefits in the state from AB 398, as noted in the ISOR (pp. 49-54).

Regarding the comment on providing guidance to ensure offsets result in real reductions, CARB staff notes that during the public process for development of the Compliance Offset Protocols, CARB staff provided evidence indicating how all Protocols quantified GHG emissions reductions that were real, permanent, quantifiable, verifiable, and enforceable. By adopting the Protocols, after a formal rulemaking process, the Board agreed. Each Protocol has standardized mechanisms for quantifying GHG emissions reductions. CARB staff continuously provides guidance to stakeholders on the implementation of the compliance offset program, and will continue to do so. See Response to 45-Day Comment G-3.7 for further discussion of the Compliance Offset Protocols’ development, benefits, and additionality.

DEBS Waterways Applicability

G-3.11. Comment:

Our comments today focus on three issues:... (2) a potential loophole in the proposed definition of “direct environmental benefits” for carbon offsets that should be eliminated in the final regulation...

2. The proposed definition of “direct environmental benefits” for carbon offsets contains a potential loophole that should be closed.

Finally, we address a separate topic related to carbon offsets. AB 398 sets new limits on offset use in the post-2020 market period, with no more than half of the limit coming from projects that do not produce a “direct environmental benefit” (or DEB) to California air or water quality.⁵¹⁶

As noted by the IEMAC, the proposed regulatory text contains an ambiguity that could potentially allow any offset project to claim a DEB on the basis of its project-level avoided greenhouse gas emissions or project-level greenhouse gas emission reductions.⁵¹⁷ The proposed definition clearly forecloses this option with respect to claiming a DEB to California air quality, but the path for claiming a DEB to California water quality via climate impacts remains ambiguous with respect to greenhouse gas emissions. Because every offset project could make this argument, any such interpretation would render AB 398’s DEBs language superfluous and effectively

⁵¹⁶ Cal. Health & Safety Code § 38562(c)(2)(E) (as added by AB 398).

⁵¹⁷ 2018 IEMAC Report, *supra* note 14, at Chapter 5.

eliminate this statutory provision—contrary to clear legislative intent behind AB 398’s limits on post-2020 offset use.

Equally troubling, such an interpretation would be inconsistent with basic scientific accounting because offsets produce no net climate benefits anywhere, no matter where they are located.⁵¹⁸ Project-level greenhouse gas reductions or project-level avoided greenhouse gas emissions that are recognized under offset protocols generate offset credits. Regulated entities use these credits to emit an equally sized and corresponding increase in greenhouse gas emissions, resulting in no net change in greenhouse gas emissions. Any interpretation of the DEBs language in AB 398 that leaves open an argument for offset projects to claim a DEB on the basis of the greenhouse gas emission reductions or avoided greenhouse gas emissions that are the basis for the offset credits they generate is not only inconsistent with clear legislative intent, but also basic environmental science.

Accordingly, we join the IEMAC in urging ARB to specifically foreclose this interpretation by revising the DEB definition to make clear that offset projects cannot claim a DEB on the basis of greenhouse gas emissions reductions or avoided greenhouse gas emissions that are credited under the offset protocol. (NEARZERO)

Response: There seems to be a misunderstanding of the text as provided in the 45-Day amendments. In response to the commenter’s concerns, CARB staff made 15-Day changes to clarify the original intent of section 95989 that the phrase “that is not credited pursuant to the applicable Compliance Offset Protocol” applies to both air pollutants and pollutants that could have an adverse impact on waters of the State by repeating existing text twice in the same sentence. See also Responses to 45-Day Comments G-3.1, G-3.2, and G-3.4.

DEBS for GHG Reductions

G-3.12. Comment:

I think the most important thing to say at the start is our organization is -- Near Zero is fundamentally agnostic as to how California achieves its climate policy goals. We think there are strong reasons to consider market-based policies like the Cap-and Trade Program, which have many advantages in terms of controlling costs. I want to start off first by thanking staff, who, in their remarks today, mentioned this issue of DEBS in the greenhouse gas accounting for offsets, and referred to IEMAC report, which I think comprehensively analyzes whether or not there are DEBS associated with greenhouse gas reductions beyond the offset credits that offset developers rightly receive for their projects. I think it's very positive for staff to consider looking into changing the ambiguity that's in the current rule. I want to thank them for their engagement on that.
(NEARZERO2)

⁵¹⁸ Danny Cullenward et al., Interpreting AB 398’s offset limits. Near Zero Research Note (Mar. 15, 2018).

Response: See Response to 45-Day Comment G-3.11.

DEBS Waterways

G-3.13. Comment:

We also urge the Board to instruct staff to develop a more nuanced screen for water quality benefits than is provided in the proposed rule. The proposed rule would deem projects adjacent to any waterway that flows into California as providing direct environmental benefits. The Board should direct Staff to revise the proposed rule to require projects to make specific showings of water quality benefits that directly result from the project, and that those direct benefits occur within California, and not exclusively upstream or as an indirect result of upstream benefits. (NEXTGEN)

Comment:

We also note that simply being located adjacent to a waterway flowing into California does not mean that a project generates DEBS within the state. Not all pollutants affect water quality, and the location of an offset project along a waterway flowing into the state does not necessarily benefit waters that eventually flow into the state. If ARB were to deem any project located in a watershed of a river flowing into California to be considered DEBS, any project of any type in the Colorado River Basin, comprising almost all of Arizona, and portions of Colorado, Utah, Nevada, New Mexico, and Wyoming, would be considered to reduce water pollution in California...

In sum, we strongly recommend that ARB:...

- recognize that not all projects located beside a waterway flowing into the state, or in a watershed of a river flowing into the state, directly impacts water quality in the state. (HAYAETAL)

Response: With respect to the commenters' belief that the existing language would automatically deem a project located near a waterway that flows into California as providing DEBS, there appears to be a misunderstanding by the commenter on the adopted amendment; the adopted amendments do not indicate this. Rather, in-state offset projects qualify for DEBS for a variety of reasons (see ISOR at 52-54). Out-of-state offset projects must always submit documentation to demonstrate that the project qualifies for DEBS, regardless of whether the project is located beside a waterway flowing into the state.

DEBS Within State

G-3.14. Comment:

In our review of the quality of carbon offset credits, a key internationally recognized component used to evaluate offsets is conformance with legal regulations. Carbon

markets are government created markets dependent on some form of political establishment and implementation. When democratically elected leaders pass legislation, it is important that their constituents be assured the will of the legislature is duly carried out by the executive branch. Our primary concern is whether the ARB staff is putting forth language that preserves the balance AB398 made with regard to the use of offsets. As stated earlier, one serious proposal put forward would have completely abolished the use of offset post 2020. However, a solution was achieved where offsets would be allowed, but that at least half of those offset credits would come from projects providing direct environmental benefits in the State. Offsets outside the state would be equally allowed, so as to avoid any conflicts with the Federal Commerce Clause, but those in-state would also be required to show some additional benefits beyond GHG reduction. The elected officials of disproportionately effected communities wanted to see some of these offset projects occur in their own neighborhoods rather than outside the State. A compromise was made to allow one half of offset credits to come from outside the State and at least one half to come from within the State.

In apparent conflict with this agreement, the current language in the statement of reasons presented by ARB staff would clearly lead to projects anywhere in the U.S., including states as far away as Maine, New York, or South Carolina, being designated as providing "Direct Environmental Benefits In State".

Proponents would only need to make a case to hired verification bodies and pay issuance fees to accredited registries in order to meet the proposed language requirements.

We recognize that offsets have GHG reductions beneficial to the state, and are thus recognized as compliance instruments, but struggle to understand how an out-of-state offset can provide additional benefits in State. The additional benefits beyond GHG reductions would not be realized by the citizens of the State of California. We believe the Legislator has clearly spoken on this topic when AB398 was negotiated and made clear that in order for California citizens to realize the additional benefits of offsets, the projects must at least take place within the State.

The task before the ARB staff is to present a credible process where each offset credit generated within the state be reviewed to ensure it is providing direct environmental benefits. We believe that process should focus on an identification of the particular pollutant, beyond GHGs, the offset project is reducing. These pollutants should be identified by the staff based the scientific consensus of pollutants known to be a threat to the health and safety of California citizens. Once the guidelines are established, in-state projects would be reviewed for a determination of whether they provide direct environmental benefits in state as identified in AB398.

We ask the Board to direct the staff to revise the proposed language to be clear that for a DEBS determination to be made a project must be located within the state and have demonstrated it provides additional direct benefits beyond GHG reduction. Public

confidence in the implementation of AB398 is paramount to the success of the CA Cap-and-Trade effort. We believe it would not serve the Board or State to have the outcome of that process be that projects located in states thousands of miles away qualify as being equivalent to those projects located in-State. The Legislator made a clear distinction between offsets with regard to the benefits offsets provide to the people within California and the offset program should reflect that intention. (QCR)

Response: The commenter asserts that AB 398 mandates at least one half of all ARB offsets credits used for compliance come from in-state projects; there is no such requirement in the statute. The commenter appears to misunderstand the requirements of AB 398. The requirement in AB 398 is that no more than one-half of the quantitative usage limit can come from projects that do not provide DEBS, and DEBS may be able to be demonstrated from projects that occur out-of-state. CARB staff has already explained in the Initial Statement of Reasons (pp. 52-54) how all in-state project types satisfy the DEBS requirement, so no further analysis is required for these projects.

The commenter also appears to misunderstand how the Dormant Commerce Clause is interpreted. The Dormant Commerce Clause does not require the equal treatment of out-of-state entities with other out-of-state entities, as the commenter suggests; rather, the Dormant Commerce Clause prohibits the discriminatory treatment of out-of-state commerce for the purpose of economic protectionism of in-state entities. AB 398 and the adopted amendments are consistent with the U.S. Constitution because the DEBS provisions do not discriminate against out-of-state offset projects and does not promote economic protectionism. See Responses to 45-Day Comments G-3.3 and G-3.8 for additional discussion of DEBS and the Dormant Commerce Clause.

CARB staff agrees with the commenter that the adopted language allows an offset project operator to submit documentation to demonstrate that an offset project outside California provides DEBS. This is consistent with the requirements of AB 398. The adopted amendments provide the requirements for a credible process for identifying DEBS that does not involve the verification body or Offset Project Registry as the commenter contends. Pursuant to the adopted amendments, only CARB can make the DEBS determination.

The determination of DEBS can be made for both for in-state and out-of-state projects, as allowed by AB 398, and must be above and beyond GHG emissions reductions credited under a Compliance Offset Protocol as specified in section 95989(b). No change is required.

DEBS Delegation

G-3.15. Comment:

The proposed regulatory text defining "direct environmental benefits" (DEBs) contains an ambiguity that could enable any offset project to claim a DEB on the basis of its greenhouse gas emissions. CARB should foreclose this option...

Chapter 5: Offsets

Authors: Ann Carlson and Danny Cullenward

A. Overview

Offsets are an important part of both the current and post-2020 cap and trade program. By statute and regulation, the requirements for offsets and the allowable amounts are defined differently for pre-2021 and post-2020 market periods. In the pre-2021 market period, no statutory limits apply, but California Air Resources Board (CARB) has established limits by regulation. Under CARB regulations, regulated entities can submit offset credits to cover up to 8% of their emissions through the end of 2020. Beginning in 2021, new offset limits apply pursuant to the cap-and-trade extension bill, AB 398.

Under AB 398, regulated entities can submit offset credits for up to 4% of their emissions associated with the years 2021 through 2025, and up to 6% for the years 2026 through 2030. In addition, no more than half of the offsets used in the post-2020 market period can come from projects that do not generate "direct environmental benefits" to California air or water quality.

The basic idea of the offset program is that a percentage of the reductions in carbon dioxide equivalent emissions under the cap-and-trade program can come from sectors outside of the cap and be used by regulated parties under the cap to meet part of their compliance obligations. The theory behind offsets is that—from a climate change perspective—it does not matter where or how a ton of emissions is reduced since climate change is caused by the accumulation of greenhouse gases in the atmosphere. One fewer ton in the atmosphere is one fewer ton, regardless of its source.

When offsets are used, total GHG emissions from "covered sources" (i.e., those that are regulated under the cap-and-trade program) increase and may exceed the nominal program cap, but the increases are "offset" by reductions outside the regulated sector.

This is because for every offset credit used, emissions rise by one ton of carbon dioxide equivalent from covered sources. At the same time, however, every emissions increase at covered sources has a corresponding credited reduction from non-covered sources—most often in other states, but sometimes at in-state sectors not covered by the cap-and-trade program. Thus, even though GHG emissions from covered sources increase as a result of offset use, there is no net change in GHG emissions to the atmosphere.

CARB has approved six offset protocols to date. As of August 2018, CARB has issued over 116 million offset credits under these protocols, each worth a ton of carbon dioxide equivalent (CARB, 2018); Quebec has issued just over 600,000 offset credits from its own protocols (MDDELCC, 2018). The approved offset credits have overwhelmingly been issued by CARB under the U.S. Forest offset protocol, which has generated three quarters of the total supply. The Ozone Depleting Substances protocol is responsible for an additional 15% of the total issued to date, and a relatively small number of credits have been issued under the Livestock and Mine Methane Capture protocols. Two of the approved protocols, the Urban Forest and Rice Cultivation protocols, have not issued any credits thus far.

The table below shows the categories of offsets that have been approved by the Air Resources Board for use by regulated entities and the total number of credits issued to date.

Table 1: CARB-issued offset credits as of August 2018

Project type	Ozone Depleting Substances	Livestock	U.S. Forest	Urban Forest	Mine Methane Capture	Rice Cultivation
Total credits	17,249,969	5,060,098	89,180,683	0	5,272,971	0
% of total	14.8%	4.3%	76.4%	0%	4.5%	0%

Offsets can serve valuable functions but have also been controversial. The valuable functions include: 1) reducing cap-and-trade program compliance costs (i.e., providing price containment to the market); 2) stimulating innovation in non-capped sectors for reducing GHGs; 3) generating environmental co-benefits from offset projects, particularly with respect to local air pollution reductions; 4) providing revenue to sectors and jurisdictions that generate offsets for compliance purposes, including projects in disadvantaged communities within and outside of California.

The controversies about offsets include: 1) concerns about whether GHG reductions from offsets are real, additional, quantifiable, and permanent; 2) concerns about allowing regulated entities to purchase their way out of facility-level compliance rather than reducing their own emissions on site; 3) relatedly, losing co-benefits (particularly air pollution reductions) due to shifting GHG mitigation away from large stationary source emitters as a result of offset projects; 4) depriving California of program auction revenue from the higher auction market prices that would result without carbon offsets; and 5) the distributional concern that offsets' benefits may largely accrue outside of California yet be financed by California residents.

The state has made a policy determination to allow offsets, subject to statutory limits and conditions. As a result, our report does not rehash whether offsets should or should not be allowed, nor does it analyze whether the percentage of offsets allowed by regulation in the pre-2020 period and by statute in the post-2020 period are set at the optimal level. Instead, our report is directed at analyzing whether the current and proposed programs are meeting legislative and regulatory expectations, maximizing offset benefits and minimizing the risks of offsets...

One key question is whether project-level GHG reductions or avoided GHG emissions constitute a DEB. This issue has been discussed extensively in the cap-and-trade stakeholder process and in legislative oversight hearings. It is relevant because if offset projects can establish a DEB on the basis of project-level GHG reductions or avoided emissions, then all offset projects would meet this standard and AB 398's restrictions on this point would be rendered meaningless on implementation. We assume that the language in AB 398 requiring DEBs refers to environmental benefits to air or water quality that occur in addition to those impacts that are traceable to reduced or avoided GHG emissions; otherwise, the language of the statute would seem superfluous. On the other hand, we have not conducted an extensive legal analysis of the issue and have not looked for extrinsic evidence of legislative intent to restrict DEBs in this fashion. We are, instead, following a relatively standard canon of statutory construction that words in a statute are to be given effect rather than to have no consequence.

CARB proposes to operationalize the DEBs requirement in Section 95989 of the regulations. In subsection (a), CARB proposes to allow projects that are located in California to demonstrate a DEB either via their location in California or by avoiding GHG emissions within the state based on its analysis showing that in-state offset projects under the currently approved protocols produce air and/or water pollution benefits. In subsection (b), CARB proposes a set of requirements for out-of-state entities. In order to demonstrate a DEB, out-of-state projects must show either "[1] the reduction or avoidance of emissions of any air pollutant that is not credited pursuant to the applicable Compliance Offset Protocol in the State or [2] a reduction or avoidance of any pollutant that could have an adverse impact on waters of the State." The first clause addresses how an out-of-state project can demonstrate a DEB on the basis of air pollution and excludes "pollutants that are credited" under an offset protocol (i.e., it excludes the GHG emissions credited by the offset project). In contrast, the second clause addresses how an offset project can establish a DEB on the basis of a water pollution benefit. Unlike the first clause, however, the second does not explicitly exclude pollutants that are credited by the applicable Compliance Offset Protocol (i.e., the second clause does not exclude GHG emissions).

We recommend that CARB clarify whether it intends to foreclose the argument that a project-level avoided GHG emission or GHG reduction constitutes the "reduction or avoidance of any pollutant that could have an adverse impact on waters of the State." The provision as currently drafted is ambiguous in this regard and could raise questions

on implementation. GHGs are considered “air pollutants” under the federal Clean Air Act (see *Massachusetts v. EPA*) and therefore might be considered “any pollutant” under Section 95989(b). Given this relationship, it may be useful to clarify that to qualify as an offset credit providing direct environmental benefits in state, a project must reduce or avoid not only greenhouse gas emissions but at least one additional air or water pollutant that “could have an adverse impact on waters of the state.”...

D. Recommendation for amendments to draft regulations

- 1) As specified above in more detail, we recommend clarifying the definition of DEBs with respect to projects that may adversely affect waters of the State.

[The original comment, which includes a reference list, is available at <https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=ct2018>.] (IEMAC)

Response: See Response to 45-Day Comment G-3.11.

Further Define DEBS Criteria

G-3.16. Comment:

The definition of Direct Environmental Benefits (DEBS) should be clarified. Lhoist supports the usage of California carbon offsets (Offsets). Offsets help California incentivize and deliver on real, quantifiable, permanent, verifiable and additional GHG reductions. Although Lhoist is disappointed by the reduction in Offset usage limits, we strongly encourage the continued use and access for Offsets in the program and recommend the **timely determination and clarification on DEBS eligibility** to provide clarity and certainty of eligible Offset supply for covered entities. (LHOIST)

Comment:

First, I encourage ARB to engage in a transparent process in determining DEBS. I encourage ARB to release the practical criteria it will use to determine if an offset project has DEBS, with opportunity for public comment before the criteria are finalized. I also request that ARB provide an opportunity for public comment on the materials submitted to it by project proponents of out-of-state offset projects making DEBS claims prior to making a determination, as well as publicly release the basis on which it makes its final determination. (HAYA)

Comment:

The California Air Resources Board is charged with “protecting the public from the harmful effects of air pollution and developing programs and actions to fight climate change,” and aims to implement California’s leadership in the country and the world in effective air quality regulation.⁵¹⁹ With hundreds of staff members with expertise in protecting human health from the impacts of air pollution, ARB has the ability and

⁵¹⁹ <https://ww2.arb.ca.gov/about>

mandate to set standards and criteria for identifying offset projects that meaningfully benefit human health in the state. ARB can draw from the expertise of sister agencies or the water quality capacity of researchers and professionals in the state for guidance on developing criteria for offset projects that directly impact water quality in California.

ARB indicated in its workshop on June 21 of this year, and the accompanying draft regulatory amendments, that it intends to delegate the development of DEBS criteria to those submitting public comments on its draft regulatory amendments, and to offset project developers presenting ARB with articles and data as evidence that their offset projects have DEBS. The interest of industry participants for loose standards that would allow for the greater sale of offset credits, and the limited time and attention of independent air and water quality specialists to submit public comments, means that ARB's proposed delegatory approach is almost certain to result in regulations based on biased and incomplete data. It is clear to us that in order for ARB to meet its responsibility, and its aspirations to lead the country and the world in regulation that protects public health, the Agency must ensure that clear standards and criteria for air and water quality regulation under its purview are developed based on comprehensive and unbiased impact assessments. (HAYAETAL)

Response: See Responses to 45-Day Comments G-3.1 and G-3.2 for clarifications made to the application of DEBS in the adopted amendments. With respect to one commenter's assertion that CARB staff delegated the development of DEBS criteria to public commenters in a pre-regulatory workshop, CARB staff does not understand the comment. CARB staff often requests feedback from stakeholders in public workshops and during the formal 45-Day and 15-Day comment periods. The regulatory provisions implementing the AB 398 requirements on DEBS reflect that feedback, but the responsibility to develop the regulatory proposals and to adopt the regulatory requirements continue to rest with CARB. This manner of operating ensures any interested member of the public is able to participate in the process, and the commenter's assertion to the contrary is simply untrue.

Some commenters request public review and comment on materials that may support a DEBS finding. CARB staff is committed to a fully transparent offset program and, as is the current practice, will post offset project-related materials on a public website for all stakeholders to review. However, and similar to the process established by the existing Regulation for issuing credits to eligible projects now, there will not be an opportunity for public review and comment on DEBS findings prior to CARB making the determination. See also Response to 45-Day Comments G-3.21.

Project-by-Project DEBS Assessment

G-3.17. Comment:

AB 398 defines a limit on the use of offsets by a regulated entity as 4% of that entity's emissions during 2021-2025 and 6% of that entity's emissions during 2026-2030. The law further requires that half of that limit is reserved for credits from offset projects with direct environmental benefits in the state, defined as: "*the reduction or avoidance of emissions of any air pollutant in the state or the reduction or avoidance of any pollutant that could have an adverse impact on waters of the state.*"

ARB has proposed using project-by-project evaluations of DEBS based on information provided by the offset project developers. ARB also proposes allowing any project outside of the state located beside a water body that flows into California to be considered to result in direct environmental benefits in the state.⁵²⁰ We think this is not an effective approach and strongly recommend that ARB develop objective science-based evaluation criteria for each protocol.

The project-by-project evaluation approach that ARB proposes has a number of critical disadvantages. First, it would create a substantial ongoing administrative burden for the state which would need to evaluate the arguments put forward by each individual project developer. Second, this process would also create uncertainty for offset project developers who are considering submitting their projects for credit issuance, and could also increase their costs of reporting and monitoring.

Third, importantly, as ARB seeks objective and even-handed methods for evaluating DEBS, basing evaluations on the information provided by project developers could result in different DEBS assessments for similar projects. ARB would need to evaluate the articles and data sources submitted by each project developer in a context where individual articles can point to conflicting conclusions. This approach unfairly benefits project developers with access to academic literature, and those who craft arguments using selectively chosen articles presented out of context of the relevant body of literature. Lastly, project-by-project evaluations of environmental benefits contradicts ARB's overall offset strategy which moves away from project-by-project evaluations and assesses offset quality through identifying objective metrics at the protocol level.

Instead, ARB should do its own comprehensive evaluation of relevant literature and analytical methods currently used to estimate impacts of pollution on populations to draft a set of objective criteria for determining which offset projects have direct environmental benefits in the state for each of ARB's six protocols. These criteria should define the impacted population, since the benefits of reductions in air and water pollutant emissions will vary based on the population's susceptibility and pre-existing

⁵²⁰ See, *Preliminary Discussion Draft of Potential Changes to the Regulation for the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms* (pages 17-18), and ARB's June 21, 2018 cap-and-trade workshop presentation, both found under the June 21, 2018 meeting here: <https://www.arb.ca.gov/cc/capandtrade/meetings/meetings.htm>

pollution levels from other sources that contribute to cumulative exposures. Such an approach has precedent and is in line with existing regulations that geographically incentivize the investment of cap-and-trade revenues to disadvantaged communities as characterized by CalEnviroScreen.

To create objective metrics for identifying projects with DEBS, ARB should review each of California's six offset protocols to identify criteria for projects that clearly do or do not generate meaningful air pollution and water quality benefits. This would result in a positive list and a negative list of projects based on a set of project characteristics. For example, a mine methane capture (MMC) project in Pennsylvania clearly does not directly impact water quality in California. But other projects require more careful assessment. For example, can a livestock digester project outside of California affect water quality of river water flowing into the state, and if so, how close to California's border and to a major river does the project have to be to have such an effect? What are the characteristics of a forest project that would improve river water quality flowing into the state? Should the state prioritize DEBS designation of projects located within the state over those outside the state, that may have fewer environmental benefits to California residents? If so, what criteria should be applied to this prioritization process?

ARB may decide to draw a clear line between the two categories, or may decide that some projects sit between a clear positive or negative determination. In these exceptional cases the DEBS of those projects will be determined on a project-by-project basis. To provide maximum certainty to present and prospective offset project developers, the state should define clear guidelines for making that project-level determination, and project developers should be required to explicitly address these criteria in their proposals...

We emphasize that whether a project has direct air quality and water quality benefits in the state is a scientific question. The six protocols that ARB has already adopted present a limited set of impact pathways to directly release air pollution into the state and directly affect California's water quality. These can be assessed at the protocol level with clear sets of criteria...

In sum, we strongly recommend that ARB:

- determine de minimis direct releases of air pollutants and effects on water quality considered to impact human health in California as the foundational criteria for DEBS;
- develop these thresholds taking into account the impacted population, since the benefits of reductions in air and water pollutant emissions will vary based on the population's susceptibility and pre-existing pollution levels from other sources that contribute to cumulative exposures;
- use these thresholds to develop simple positive and negative lists of project characteristics for DEBS consideration for each of the six protocols;

- also use these thresholds to develop methods for assessing DEBS for individual projects not included in the positive or negative lists developed;... (HAYAETAL)

Comment:

As you know, California forest-based offset projects have substantially enhanced the conservation and sustainable management of California's forests, while providing cost-effective GHG reductions and many other environmental, cultural and economic benefits to the state. The direct environmental benefit requirement set forth in AB 398 is a clear expression of the Legislature's intent that forest offset projects continue to provide direct environmental benefits in California. We urge CARB to adopt regulatory language that furthers that objective. (CFCC)

Response: In determining how to implement AB 398, CARB staff notes that the statutory language does not explicitly preclude out-of-state projects from qualifying for DEBS. In allowing out-of-state offset projects to qualify for DEBS, CARB is adhering to—and incorporates in the Regulation—the exact definition of “direct environmental benefits” in AB 398, which indicates that DEBS are assessed by whether the project provides direct environmental benefits in the State, not whether the project itself is located in the State. Therefore, CARB's DEBS provisions are consistent with AB 398. See also Response to 45-Day Comment G-3.2.

With respect to one commenter's request for a comprehensive evaluation of how offset projects qualify for DEBS, CARB staff notes that it has already documented in the Initial Statement of Reason (pp 52-54) for this rulemaking how all in-state projects meet the definition of DEBS. The commenter appears to not be familiar with the overall approach CARB has taken in designing and implementing the compliance offset program. From the very beginning, the compliance offset program has had a performance standard for qualifications such as additionality. That same approach was taken with respect to implementing the DEBS criterion.

As noted in the ISOR, the assessment of in-state offset projects was based on non-GHG benefits from the offset project types. In addition, as noted in Responses to 45-Day Comments G-3.1, G-3.2, G-3.3, and G-3.4, CARB staff needed to have a mechanism to allow out-of-state projects to demonstrate DEBS and criteria to make the determination of DEBS. The criteria were developed directly from the language in AB 398, which mandated the “reduction or avoidance of emissions of any air pollutant in the state or the reduction or avoidance of any pollutant that could have an adverse impact on waters of the state.” It is conceivable that projects located outside the State could avoid emissions of air pollutants in the State, or avoid impact to waters of the State. CARB allows out-of-state projects to make this demonstration and assesses whether such projects produce DEBS on a case-specific basis.

Section 95989 indicates that reduced GHG emissions credited by the applicable Compliance Offset Protocol cannot be used to demonstrate DEBS. Therefore, any out-of-state project can submit information to show that the offset project or offset project type provides for the reduction or avoidance of emissions of any air pollutant, including GHG emissions, that is not credited pursuant to the applicable Compliance Offset Protocol in the State or a reduction or avoidance of any pollutant that is not credited pursuant to the applicable Compliance Offset Protocol that could have an adverse impact on waters of the State. Given the diversity in project types, locations, and practices, combined with the abundance of scientific literature, environmental reports, and monitoring data, it is not feasible for CARB staff to do any type of holistic review to predetermine the location, project type, and activities that meet the requirements for DEBS for out-of-state projects. The process indicated in the adopted amendments is a thorough and transparent process that will require a clear determination as to whether the project provides DEBS. All DEBS-related project documentation will be publicly posted, so stakeholders can see the documentation used to justify DEBS.

In addition, and contrary to one commenter's assertion, there is no loophole allowing almost all projects to provide DEBS; no project will be determined to provide DEBS unless it is supported by the documentation submitted pursuant to section 95989(b). The documentation must show that the offset project or offset project type provides for the reduction or avoidance of emissions of any air pollutant in the State or the reduction or avoidance of any pollutant that could have an adverse impact on waters of the State.

AB 398 also does not establish a threshold (e.g., one metric ton CO₂e) for determining DEBS, nor does it require establishing such a threshold. The arbitrary establishment of a threshold could preclude small projects, with relatively few emissions, from being determined to provide DEBS. CARB staff wishes to incentive any eligible projects that provide DEBS. Therefore, as long as the project can demonstrate the reduction or avoidance of emissions of any air pollutant that is not credited pursuant to the applicable Compliance Offset Protocol in the State or a reduction or avoidance of any pollutant that is not credited pursuant to the applicable Compliance Offset Protocol that could have an adverse impact on waters of the State, the project may provide DEBS.

As noted in Response to 45-Day Comment G-3.11, section 95989(b) was modified in the 15-Day changes to clarify the original intent of the provision that the phrase "that is not credited pursuant to the applicable Compliance Offset Protocol" applies to both air pollutants and pollutants that could have an adverse impact on waters of the State.

Fix to DEBS Definition

G-3.18. Comment:

The Center appreciates that the current definition of DEBS no longer includes benefits or avoidance of pollutants into any watershed that flows into California, and that CARB has removed the significantly problematic suggested provision that “[i]f [the] project is located adjacent to a water body that flows within or into California, no further information” on that project’s impacts or benefits would be needed.⁵²¹
(CENTERBIODIV)

Response: There seems to be a misunderstanding of the text as provided in the 45-Day amendments. CARB staff made 15-Day changes to clarify the original intent of section 95989 that the phrase “that is not credited pursuant to the applicable Compliance Offset Protocol” applies to both air pollutants and pollutants that could have an adverse impact on waters of the State by repeating existing text twice in the same sentence. Any project located adjacent to a water body that flows into California would have to provide documentation justifying DEBS.

DEBS for Ozone Depleting Substances Projects

G-3.19. Comment:

There are many environmental benefits to California provided by the Program’s offset projects, even those which are focused on GHG-only reductions. There are many examples of how, the collection in-state and the destruction out-of-state of ODS provides DEBS. Such a process creates a healthier stratospheric ozone layer which results in reduced skin cancer rates, regardless of where the material is destroyed. Such projects where ODS is locally collected also protects against higher ground-level ozone levels caused by frequent high heat days that will come with increased atmospheric GHG concentrations. Local groundwater contamination can be likewise reduced by the collection and prevention of CFC-11, which is in a liquid state at atmospheric conditions and can find its way into groundwater.⁵²²

Without the incentive of CARB’s Carbon Offset Program, ODS would not have been recovered for destruction, but rather reclaimed and resold into the marketplace. All refrigeration and other equipment using halocarbons (whether ODS or high-GWP substitutes) will eventually leak those chemicals into the atmosphere where they will deplete the ozone layer and contribute to global warming. In fact, the legally permissible

⁵²¹ See Maya Golden-Krasner, Center for Biological Diversity, Additional comments to the 2018 amendments to California’s GHG Cap-and-Trade regulation and the June 21, 2018 workshop (July 20, 2018), available at <https://www.arb.ca.gov/lists/com-attach/38-ct-6-21-18-wkshp-ws-ADFRb1MNVTYKOWBf.pdf>.

⁵²² <https://water.usgs.gov/lab/chlorofluorocarbons/background/>

leak rate for industrial refrigeration equipment is a staggering 30% per year.⁵²³ Unless these ODS/high-GWP materials are reclaimed and destroyed, every pound of halocarbon manufactured will eventually find its way into the atmosphere and cause stratospheric ozone depletion and contributing to global warming.

CARB's ODS offset protocol has been a leader in ozone layer protection by encouraging destruction of older halocarbons, incentivizing the reclamation and permanent destruction of ODS materials. The ODS protocol has created a price driver for project developers to locate, obtain and destroy older ODS and/or high-GWP halocarbons. This has benefitted California by incentivizing the reclamation and permanent destruction of ODS equivalent to a cumulative total of 17,088,886 tons of carbon dioxide equivalent (10,752,176 from compliance projects and 6,336,710 from early action projects) which otherwise would have reached the atmosphere, impacted the ozone layer, exacerbated global warming, and harmed California.

Going forward, without the incentives for reclaim and destruction, the only market drivers will again be to reclaim and resell, as those halocarbons that have a market value, where their end-of-life is the atmosphere. The ongoing ODS protocol and ability to use offsets in California's Cap and Trade Program creates the value and incentive to permanently get rid of them. **This market-based incentive is true for all of California's six approved protocols, which drive economic and environmental benefits for the state.**

For other projects where the co-benefits are more easily seen, forests and dairy projects, the determination should be even more straightforward. In a recent IPCC Report the importance of well managed forests was a prominent finding.⁵²⁴ International scientists agree that forests are critical to limiting average global temperature rise as they provide one of the only readily available, cost-effective means of directly removing and storing GHG emissions at scale.⁵²⁵ Forests also provide a host of local benefits such as shading and cooling, water filtration and storage, and the provision of wildlife and pollinator habitat. (VERA, 3DEGREES)

Comment:

IV. Direct Environmental Benefit

LADWP supports CARB's conclusion that Ozone Depleting Substances (ODS) projects that contain material sourced from within the State provides Direct Environmental Benefits in the State (DEBS) even if those ODS are destroyed outside of the State.

LADWP agrees with CARB's assessment that there are also ozone-related benefits from destroying ODS gases that are in addition to the GHG benefits for which the

⁵²³ *Protection of Stratospheric Ozone: Update to the Refrigerant Management Requirements under the Clean Air Act*, 81 Fed. Reg. 82272 (Nov. 18, 2016); 40 C.F.R. § 82.157, Subpart F

⁵²⁴ http://www.ipcc.ch/news_and_events/pr_181008_P48_spm.shtml

⁵²⁵ <http://www.climateandlandusealliance.org/scientists-statement/>

projects are credited. LADWP's Refrigerator Exchange Program and Refrigerator Recycle Program incentivize the conversion to newer more energy efficient units that will reduce emissions of GHGs and criteria and toxic pollutants by reducing electricity demand. (LADWP)

Comment:

In further developing its Proposed Amendments, ARB should:..

- Consider defining direct environmental benefits to the state (DEBS) so that Offset Protocol Ozone Depleting Substances located outside of California provide DEBS....

ARB Should More Thoroughly Consider Whether Offset Protocol Ozone Depleting Substances Located Outside of California Provide Direct Environmental Benefits to the State (DEBS)

Under the Proposed Amendments, Compliance Offset Ozone Depleting Substances (ODS) provide DEBS only if the ODS offset projects are located in the state of California or if they are approved under the general procedure for determining whether out-of-state offset projects provide DEBS.⁵²⁶ ARB should reconsider defining DEBS so that all ODS offset projects provide DEBS per se.

ARB attributes two direct environmental benefits to the reduction of ozone-depleting substances.⁵²⁷ The first is the protection of stratospheric ozone, which is an important guarantor of public health.⁵²⁸ The second is the reduction of greenhouse gases and toxic pollutants that will result from converting to newer, more efficient refrigerants.⁵²⁹ ARB believes that converting to more efficient refrigerants will lessen the demand for electricity, which in turn will reduce greenhouse gases and atmospheric co-pollutants.⁵³⁰

ARB should more thoroughly explain why these rationales justify its position that only ODS offset projects in California provide DEBS per se. Like greenhouse gases, ODS are global pollutants.⁵³¹ From a human health perspective, it does not matter whether ODS are emitted in California or out-of-state. (POLICYINTEGRITY)

Response: CARB staff agrees that Ozone Depleting Substances (ODS) projects that contain material sourced from within the State provide DEBS. Section 95989(a) identifies all projects that are located within, or that avoid GHG emissions within, the State of California as providing DEBS. ODS collected

⁵²⁶ See Proposed Amendments, *supra* note 2, at § 95989.

⁵²⁷ STATEMENT OF REASONS, *supra* note 17, at 52–53.

⁵²⁸ *Id.*

⁵²⁹ *Id.*

⁵³⁰ *Id.*

⁵³¹ See U.S. EPA, EPA'S REPORT ON THE ENVIRONMENT: 2008 at 7, https://cfpub.epa.gov/roe/documents/EPAROE_FINAL_2008.PDF (“Finally, a few air pollution issues are global in nature Stratospheric ozone depletion, as another example, is affected by releases of ozone- depleting substances from countries worldwide.”)

within the State avoids air emissions within the State (as well as potential emissions harming waters of the state), so any project destroying ODS sourced from California would be considered to provide DEBS. This is further explained in the Initial Statement of Reasons for this rulemaking (pp. 52-53). For projects that do not contain any California-sourced ODS, the documentation identified in section 95989(b) must be submitted to determine if the project provides DEBS.

One commenter asserts that CARB must explain why only ODS offset projects in California provide DEBS per se. CARB made no such determination; rather, CARB determined that any ODS project sourcing material from California qualifies for DEBS. This would include out-of-state ODS projects. CARB declines to allow all ODS projects from automatically qualifying for DEBS because such an interpretation would be inconsistent with the meaning of “direct” in the “direct environmental benefits” definition.

Retroactive DEBS

G-3.20. Comment:

We also recommend that ARB not retroactively evaluate the DEBs of any existing offsets. Not only would this place an inordinate administrative burden on ARB staff, it injects additional uncertainty into the current market at a time when many entities have already invested in offsets relying on ARB’s rules at the time. Retroactively changing an offsets’ designation could unfairly alter market fundamentals without providing any additional climate benefits. (CLIMACTRESERV)

Comment:

VERA’s previously submitted comments on retroactivity are reiterated here as this issue has significant market and administrative implications. We have serious concerns about the proposal to retroactively evaluate millions of previously issued offsets and projects that will produce credits beyond 2020. These compliance instruments are already in the marketplace, have value, and represent early actions and investment by both the offset developer and the offsets’ current owner. It is simply unfair to alter their value after an investment has been made or a market transaction has been completed.

In addition, substantial market uncertainty already exists and will continue to arise from participants’ inability to determine supplies of both DEBS and non-DEBS offsets. For example, a covered facility may currently hold a number of offsets, but without knowing which are DEBS and which are not, it has no way of knowing if it’s holding too many or too few offsets to be able to comply with AB398’s usage limits. This uncertainty could meaningfully disrupt the cap and trade market and may very well prevent investments from being made in additional emission reduction technologies while it remains unresolved. Consequently, expedited clarification around DEBS designation of existing projects should be a high priority for CARB staff. The 45-Day package presently only indicates a deadline for DEBS applications to be received but includes no parameters

for when a decision for any application must be made by staff, and having to wait until the end of 2021 or later to learn if these assets have changed in value will allow the significant disruption previously described to continue for far too long...

Regarding retroactive DEBS assessments, we would like to reiterate that retroactively looking at all issued offsets would cause all stakeholders, including CARB, to incur significant administrative and implementation costs. It may also grind to a halt the issuance of new and future offset credits, further disrupting the market. These costs are in addition to the added program costs associated with the reduction in offset usage limits as highlighted in the regulations SRIA⁵³². (VERA, 3DEGREES)

Comment:

We have serious concerns, however, about ARB's proposal to retroactively evaluate millions of previously issued offset credits. These compliance instruments are already in the marketplace and have influenced market expectations, and they represent early actions and investments by both the offset developer and the current offset owner. Applying AB 398 to existing projects that would not qualify as DEBs projects could significantly undermine the value of issued credits for such projects and subject them to a set of rules that did not exist when investment decisions were made, causing serious market disruption. Furthermore, the implementation of the DEBs evaluation for previously issued offsets will necessitate significant expenditures of time, energy, and money from all stakeholders in the offset market including ARB staff, without providing any additional climate benefits. (FINITECARBON)

Comment:

- We believe that the DEBS evaluation should not be applied retroactively to offsets or projects that have been developed prior to finalization of this rulemaking, due to the significant upfront investment in developing offset projects. We recommend that offset projects that have been listed prior to the finalization of this rulemaking be exempt from the DEBS usage limitations. (NEWFORESTS)

Comment:

At the April 26 workshop, Staff indicated that most stakeholders oppose retroactive application of the DEBS standard to existing (pre-2021) offset projects. Shell Energy agrees. Offset credits from projects listed with an Offset Project Registry ("OPR") by December 31, 2020 should be deemed to have met the DEBS requirement.

Any offset project that is listed before 2021 should be exempted from (or automatically grandfathered under) the DEBS standard. The offset credits associated with pre-2021 projects should be fully eligible for use to meet a covered entity's compliance obligation. Requiring offset credits that have already been generated—or offset projects that have

⁵³² <https://www.arb.ca.gov/regact/2018/capandtrade18/ct18sria.pdf>

already incurred significant costs—to meet the new DEBS standard would be unfair to offset project developers and offset purchasers. Entities that have made a significant investment in an offset program based on existing rules should not be subject to additional requirements or restrictions after January 1, 2021.

The DEBS "exemption" should apply to offsets from projects that are "listed," in accordance with Section 95975, prior to 2021. An offset project developer has no control of the timing of "issuance" under Section 95980.1 or 95981, once its offset project has been listed. An offset developer should not face the uncertainty (and economic disadvantage) associated with the timing of "issuance," a matter over which a project developer has no control. The new DEBS standard should be applied prospectively, and only to offset credits generated by new projects that are listed on or after January 1, 2021.

Transparency, however, is critical to the process. More specificity around eligibility of out-of-State projects that qualify for DEBs should be provided. Minimum criteria could be developed, and as applications are that are to be listed in 2021 are approved or rejected, the characteristics and types of projects should be made public to create uniformity and expediency for future applications. (SHELL)

Comment:

With respect to implementation of DEBS determinations, Bluesource has serious concerns about the proposal to retroactively evaluate millions of previously issued offsets and projects that will produce credits beyond 2020. These compliance instruments are already in the marketplace, have value, and represent early actions and investment by both the offset developer and the offsets' current owner. It is simply unfair to alter their value after an investment has been made or a market transaction has been completed.

In addition, substantial market uncertainty already exists and will continue to arise from participants' inability to determine supplies of both DEBS and non-DEBS offsets. For example, a covered facility may currently hold a number of offsets, but without knowing which are DEBS and which are not, it has no way of knowing if it's holding too many or too few offsets to be able to comply with AB398's usage limits. This uncertainty could meaningfully disrupt the cap and trade market and may very well prevent investments from being made in additional emission reduction technologies while it remains unresolved. Consequently, expedited clarification around DEBS designation of existing projects should be a high priority for CARB staff. The 45-Day package presently only indicates a deadline for DEBS applications to be received but includes no parameters for when a decision for any application must be made by staff, and having to wait until the end of 2021 or later to learn if these assets have changed in value will allow the significant disruption previously described to continue for far too long.

Bluesource recommends CARB staff consider the following concepts to address this problem:

1. CARB should consider retroactive determination of DEBS for existing projects.
2. If retroactive DEBS designations are not granted, CARB should:
 - a. Materially increase its staff size to allow for expeditious reviews of DEBS evaluations while also shortening the standard offset issuance review cycle times. It is not inconceivable that this would require a doubling of the existing offset-focused staff.
 - b. Stipulate that DEBS applications will be responded to within 30 days of receipt.
 - c. Be transparent about its DEBS rulings so as to create efficiency for future DEBS applicants and CARB staff.
3. In acknowledgement that DEBS designation may impact an investment decision, CARB should not require an offset project to apply for DEBS only at the submission of an initial OPDR, but rather should allow for application even before an offset project is undertaken.

Regarding retroactive DEBS assessments, we would like to reiterate that retroactively looking at all issued offsets would cause all stakeholders, including CARB, to incur significant administrative and implementation costs. It may also grind to a halt the issuance of new and future offset credits, further disrupting the market. These costs are in addition to the added program costs associated with the reduction in offset usage limits. (BLUESOURCE)

Comment:

Finally, we recommend that ARB do not retroactively apply the DEBS requirement to projects that have already received issuance. This would be administratively burdensome, disrupt the offset marketplace, and incur significant costs to ARB, offset developers, and owners. (PG&E)

Comment:

DEBS Evaluation Process...

VERA recommends CARB staff consider the following concepts to address this problem:

1. CARB should consider retroactive determination of DEBS for existing projects.
2. If retroactive DEBS designations are not granted, CARB should:
 - a. Materially increase its staff size to allow for expeditious reviews of DEBS evaluations while also shortening the standard offset issuance review cycle times. It is not inconceivable that this would require a doubling of the existing offset-focused staff.
 - b. Stipulate that DEBS applications will be responded to within 30 days of receipt.

- c. Be transparent about its DEBS rulings so as to create efficiency for future DEBS applicants and CARB staff.
3. In acknowledgement that DEBS designation may impact an investment decision, CARB should not require an offset project to apply for DEBS only at the submission of an initial OPDR, but rather should allow for application even before an offset project is undertaken. (VERA, 3DEGREES)

Comment:

However, we are concerned about the proposal to apply the standard to offsets surrendered as of 2020, even for offsets issued prior to 2020. Staff argue in the Initial Statement of Reasons that this does not constitute a retroactive application of the mandate because offsets issued prior to 2020 that do not meet DEBS criteria would continue to be eligible for compliance after 2020. While it is true that non-DEBs offsets will continue to be valid, their value for compliance use will diminish due to the quantitative surrender restrictions. For this reason, we urge CARB to take additional steps to minimize any impacts on covered entities. Specifically, WPTF recommends that staff expedite the process for out-of-state projects to apply for DEBs status. Additionally, staff should create and maintain list of DEBs- eligible projects on the website. Lastly, staff should ensure that the Compliance Instrument Tracking System Service enables covered entities to easily identify offsets from non-eligible projects, so that covered entities may prioritize surrender of those offsets. (WPTF)

Comment:

And for us, the view of a reduction in offset utilization is not only going to increase cost to ratepayers, but it's going to hamper the ability to inspire others to follow and create these types of projects. In a way, I view the offset program as an ambassador, in being able to work with public agencies, private landowners, different folks across the U.S. to inspire change. With that in mind, a couple of specific ideas. It would be our recommendation that the DEBS designation would be granted for projects through 2020 to avoid shifting goalposts for projects that are already underway, and also that the process for review for DEBS designation would take place pretty quickly. (BLUESOURCE2)

Comment:

4. Section 95989(d) Improperly Construes the DEBS Requirement as Applying to Offsets Generated Prior to 2021

Section 95989(d) provides that out-of-state offset projects that have already been issued ARB offset credits can be deemed to provide DEBS by making the same showing as provided in subsection (b) for future offset projects. This effectively implements the DEBS provision as applying to all existing offsets, even though AB 398's limitation on the use of offsets applies only after 2021. This is an incorrect reading of the statutory language and prejudicial to out-of-state offset projects such that

it may well run afoul of the constitution. For the reasons detailed in our May 18 comment letter, see Exhibit B, the DEBS requirement of AB 398 does not apply to offsets issued prior to 2021, and therefore Section 95989(d) should be amended to provide that all offsets issued prior to December 31, 2020 can be used for compliance purposes after that date.

The Initial Statement of Reasons states only that the proposed regulation “does not result in a retroactive application of a statutory mandate, but implementation, prospectively, of the legislative requirement.” ISOR at 51-52. This is not correct. As detailed in our May 18 letter, the plain language of that portion of AB 398 that includes the DEBS provision directs CARB to develop regulations applicable only to the specified period post-2020.

While the point of regulation for the DEBS usage limitation is the surrendering of offsets post-2020, there is no question that it nonetheless impacts offsets generated pre-2021. Offsets are compliance instruments issued for the sole purpose of meeting compliance obligations under the Cap-and-Trade Program. If that sole usage is limited, offsets are impacted. Thus, though the language of AB 398 does not address pre-2021 offsets, if the DEBS provision is applied to them it likely will diminish their value.⁵³³ “A statute is retroactive if it affects rights, obligations, acts, transactions and conditions performed or existing prior to adoption of the statute and substantially changes the legal effect of those past events.” *In re Marriage of Reuling*, 23 Cal.App.4th 1428, 1439 (1994)(citations omitted).

We refer you to our May 18 letter for a detailed discussion of this legal issue. In sum, for a statute that has a retroactive impact to be upheld it must be shown both (a) that the Legislature intended the statute to be retroactive, *and* (b) that the retroactive law is not unconstitutional. As we showed, there is nothing in the legislative history that indicates that the Legislature intended the DEBS provision to have retroactive impact on offsets generated prior to 2021. And if that intent were read into the statute, then a court likely would deem it to be unconstitutional because it would deprive the holders of those offsets of a vested right without due process...

In addition [to comments stated elsewhere], Section 95989(d) must be changed such that AB 398 is not improperly given retroactive effect...

EXHIBIT B...

We write to provide the comments of Indigenous Peoples Reducing Emissions (“IPRE”) on several of the issues relating to offsets that were addressed during the workshop – in particular the potential application to offsets generated prior to 2021 of AB 398’s

⁵³³ It has been suggested that those that invested in offset projects anticipated this because the Cap-and-Trade Program was due to sunset after 2020. That is not correct. Prior to the adoption of AB 398 CARB maintained that it had the authority to continue the Program post-2020. Those that invested in offset projects reasonably relied on CARB’s statements and had a reasonable expectation that the Program would continue post-2020.

quantitative limit on the use of offsets that “no more than one-half may be sourced from projects that do not provide direct environmental benefits in the state” (“DEBS”). We refer CARB to our earlier comment letter dated March 19, 2018 for additional discussion of the DEBS requirement. We reaffirm but do not repeat those comments here...

2. The DEBS Requirement Does Not Apply to Offsets Generated Prior to 2021

On Slide 33 of its presentation at the April 26 Workshop, CARB stated that “Most stakeholders did not support retroactively applying DEBS to offset credits issued prior to 2021,” and noted that most stakeholders expressed “support for exempting from or automatically meeting DEBS standard for previously issued offset credits.” In addition to strong stakeholder support for that interpretation, there is strong legal support. For the reasons set forth below, IPRE believes that the DEBS requirement simply does not apply to offsets issued prior to 2021 and calls upon CARB to amend the Cap-and-Trade Regulation accordingly.

a. The Plain Language of Health & Safety Code Section 38562 Makes Clear that DEBS Does not Apply to Offsets Issued Before 2021

The DEBS limitation is not a standalone statute. AB 398 amended the California Health & Safety Code (“HSC”) and its provisions must be construed within their statutory context. The DEBS provision is set forth in Subsection E of HSC Section 38562(c)(2). It is one of many subsections that provide specific directions to CARB under Section 38562(c)(2)’s overarching direction: “**In adopting a regulation applicable from January 1, 2021, to December 31, 2030**, inclusive, pursuant to this subdivision, the state board shall do all of the following:” (Emphasis added.) Thus, the plain language of the statute that includes the DEBS provision directs CARB to develop regulations applicable only to the specified period post-2020.

HSC Section 38562(b) precedes Section (c) and provides general direction to CARB. Several provisions of Section (b) make clear that the DEBS limitation should not be construed to apply to offsets generated prior to 2021:

- Subsection (b)(1) establishes the overarching direction to CARB to “[d]esign the regulations . . . in a manner that . . . encourages early action to reduce greenhouse gas emissions.” Interpreting DEBS to apply pre-2021 would discourage those that took action early to reduce GHG emissions by developing offset projects.
- Subsection (b)(5) directs CARB to “[c]onsider [the] cost-effectiveness of these regulations.” Offsets are a key cost flexibility mechanism and drastically limiting existing offsets would increase the cost that the Cap-and-Trade Program imposes.
- Subsection (b)(7) directs CARB to “[m]inimize the administrative burden of implementing and complying with these regulations.” Developing a process by which CARB would determine “ways to address existing projects where the

offsets have not been used for compliance” CARB Preliminary Discussion Draft at 18, would be hugely burdensome for the agency, both to develop such a process and then to apply it to the existing projects and the offsets generated by them.

b. Absent Action by CARB to Exempt Pre-2021 Offsets from DEBS It Will Have an Improper and Illegal Retroactive Effect

If CARB does not amend the Cap-and-Trade Regulation to establish that offsets generated pre-2021 either are exempt from the DEBS limitation or automatically meet it, the DEBS usage limit will impact pre-2021 offsets despite the fact that AB 398 does not directly apply to them. While the point of regulation for the DEBS usage limitation is the surrendering of offsets post-2020, there is no question that it nonetheless impacts offsets generated pre-2021.

Offsets are compliance instruments issued by CARB for the sole purpose of being used to meet compliance obligations under the Cap-and-Trade Program. If that sole usage is limited, the offsets are impacted. Thus, though the language of AB 398 does not address pre-2021 offsets, it does impact them. The value of pre-2021 offsets that are not either deemed exempt from or to automatically meet DEBS will be greatly diminished.⁵³⁴ “A statute is retroactive if it affects rights, obligations, acts, transactions and conditions performed or existing prior to adoption of the statute and substantially changes the legal effect of those past events.” *In re Marriage of Reuling*, 23 Cal.App.4th 1428, 1439 (1994)(citations omitted). Absent appropriate regulatory action by CARB, the DEBS provision will have retroactive impact. That raises a significant legal issue.

The California Supreme Court has established a two-part test for determining if a statute has an improper retroactive effect. First, the Court must determine if the legislature intended the statute to be retroactive. If not, that ends the discussion. If so, then the Court must determine whether the application of the retroactive law is unconstitutional. *In re Marriage of Buol*, 39 Cal.3d 751, 756 (1985)(“Legislative intent, however, is only one prerequisite to retroactive application of a statute. Having identified such intent, it remains for us to determine whether retroactivity is barred by constitutional constraints.”).

i. The Legislature Did Not Intend DEBS to have Retroactive Effect

California courts have held that for a statute to have a retroactive effect the legislature must have clearly and expressly stated that that it does so. “[It is a] well-established presumption that statutes apply prospectively in the absence of a clearly expressed

⁵³⁴ It has been suggested that those that invested in offset projects anticipated this because the Cap- and-Trade Program was due to sunset after 2020. That is not correct. Prior to the adoption of AB 398 CARB maintained that it had the authority to continue the Program post-2020 and repeatedly stated that it would do so. Many independent legal analyses supported CARB’s position. Those that invested in offset projects reasonably relied on CARB’s statements and had a reasonable expectation that the Program would continue post-2020.

contrary intent” *Californians for Disability Rights v. Mervyn's, LLC*, 39 Cal.4th 223, 230 (2006), *citing Evangelatos v. Superior Court*, 44 Cal.3d 1188, 1218 (1988). In determining this issue, courts look to the language of the law to determine if a statute was intended to be retroactive. “[Legislative intent] is always considered significant because, ‘[t]he Legislature is well acquainted with the rule requiring a clear expression of retroactive intent, and the fact that it did not so express itself or did not make the amendment effective immediately is a significant indication it did not intend to apply the amendment retroactively.’” *Wienholz v. Kaiser Found. Hosps.*, 217 Cal.App. 3d 1501, 1505 (1989), *citing Perry v. Heavenly Valley* 163 Cal.App.3d 495, 500 (1985). In addition to the plain language of HSC Section 38562 discussed above, the legislative record of AB 398 makes clear that the Legislature did not intend the DEBS limitation to have retroactive impact upon pre-2021 offsets.

In *Wienholz*, the absence of express language providing retroactivity took on special significance as certain sections of the relevant statute contained express references to retroactive application, whereas the challenged provision did not. That is the case here as well. AB 398 also added Subsection C to HSC Section 38562(c)(2), which “[r]equire[s] that current vintage allowances designated by the state board for auction that remain unsold in the auction holding account for more than 24 months to be transferred to the allowance price containment reserve.” Thus, when it adopted AB 398, the Legislature knew how to make it apply to existing compliance instruments. That it did not do so for Subsection E of this same provision makes it clear that it did not intend for the DEBS limitation to have retroactive impact.

Moreover, there is nothing in the legislative history of AB 398 that indicates that the Legislature intended for DEBS to apply immediately. The Legislature issued seven different reports pertaining to AB 398 and not one of them discusses the application of DEBS to pre-2021 offsets much less sets forth an express intent for DEBS to apply prior to the specified period of January 1, 2021, to December 31, 2030.⁵³⁵ The absence of any reference to AB 398’s retrospective application, indicates that it was not the intent of the legislature to have it do so. “A statute’s silence as to retroactivity is an authoritative indication the Legislature intended a prospective application.” *Reuling*, 23 Cal.App.4th at 1439-1440.

Another factor that courts consider is whether the statute’s purpose would be “served significantly by its application to transactions which preceded the change and the principle that retrospective imposition of increased liabilities is to be carefully avoided”. *City of Los Angeles v. Shpegel-Dimsey, Inc.*, 198 Cal.App.3d 1009, 1019-1020 n. 2 (1988). The purpose of AB 398 is to strengthen the Cap and Trade Program.

⁵³⁵ See Assembly Floor Bill Analysis AB 398 (2017-2018 Reg. Sess.), July 17, 2017; Senate Floor Bill Analysis AB 398 (2017-2018 Reg. Sess.), July 17, 2017; S. Comm. on Appropriations, Bill Analysis AB 398 (2017-2018 Reg. Sess.), July 17, 2017; S. Comm. on Environmental Quality, Bill Analysis AB 398 (2017-2018 Reg. Sess.), July 12, 2017; Assembly Floor Bill Analysis AB 398 (2017-2018 Reg. Sess.), May 30, 2017; A. Comm. on Appropriations Bill Analysis AB 398 (2017-2018 Reg. Sess.), May 15, 2017; and A. Comm. on Appropriations, Bill Analysis AB 398 (2017-2018 Reg. Sess.), March 30, 2017.

Retroactive application of AB 398 will have the opposite effect. It would alter the value of existing carbon offsets, undermine the economic assumptions of the participants in the Program, and add uncertainty to the carbon market.

ii. If Read to have Retroactive Effect DEBS is Unconstitutional

The second issue is the question of constitutionality. The California Supreme Court has “long held that the retrospective application of a statute may be unconstitutional if it is an *ex post facto* law, if it deprives a person of a vested right without due process of law, or if it impairs the obligation of a contract.” *Buol*, 39 Cal.3d at 756. The statute at issue in *Buol* was held to be unconstitutional as it deprived the plaintiff in the case a vested right without due process of law.

Here, if the DEBS provision is construed to apply to existing offsets it likely would be found to be unconstitutional by depriving the holders of those offsets of a vested right without due process. Last year it was definitively determined that compliance instruments – which include offsets – consist of property rights that may not be taken absent due process. See *California Chamber of Commerce v. State Air Resources Bd.*, 10 Cal. App. 5th 604, 646-649 (2017). The Court’s analysis is thorough and well-reasoned.⁵³⁶ The Court began with the observation that “the due process and *takings clause* concepts of property are not coterminous,” and that the “*due process clause* recognizes a wider range of interests in property.” *Id.* at 647 (citations omitted). It held that while compliance instruments may not constitute property vis-à-vis the government, “this does not mean compliance instruments, including emissions allowances, lack value *to the holders*. [They] . . . consist of valuable, tradable, private property rights. *Id.* at 649. If CARB does not amend the Cap-and-Trade Regulation to make clear that offsets issued prior to 2021 are either exempt from or meet the DEBS requirement, then the holders of those offsets would be deprived of their property rights without due process and may well seek legal recourse.

For all of the foregoing reasons, IPRE calls upon CARB to amend the Cap-and-Trade Regulation to make clear that offsets issued prior to 2021 are either exempt from or meet the DEBS requirement. Doing so would be consistent with the plain language of HSC 38562 and its directives to CARB, the intent of the Legislature when it adopted AB 398, the constitution, and good policy...

4. Conclusion

IPRE and its members are committed to continuing to partner with the State in its efforts to combat climate change. Implementation of AB 398’s DEBS criteria presents considerable risks and challenges both to the Cap-and-Trade Program and California’s efforts to get others to partner with its efforts. While the offsets program is a small part of California’s multifaceted efforts to reduce GHG emissions, it is a critical component. It is the primary means by which CARB incentivizes those outside the State to join with it

⁵³⁶ Notably, the California Supreme Court declined to review the case. 2017 Cal. LEXIS 4991.

in the fight to combat climate change, including drawing in partners in states that often otherwise differ from California, thereby helping to broaden the support for the fight against climate change. (IPRE)

Response: With respect to application of the DEBS requirements to projects that have already received ARB offset credits, CARB staff notes that AB 398 specifies, for the post-2020 period, a percentage of a covered entity's compliance obligation that may be met by surrendered offsets of which no more than one-half of the quantitative offset usage limit may be sourced from projects that do not provide direct environmental benefits in the State. The AB 398 DEBS requirement applies to all compliance events for emissions years 2021-2030, and it does not distinguish between offset credits that were initially issued prior to 2021 versus offset credits that were initially issued after 2021. CARB offset credits issued prior to 2021 are still valid for surrender post-2020, whether or not they were issued to offset projects that provide DEBS. However, the number of CARB offset credits eligible to be surrendered by covered entities that come from projects that do not provide DEBS will be restricted starting with the 2021 annual compliance obligation due in 2022. The adopted amendments also include provisions enabling existing projects that are located outside the State to seek the same DEBS determination as new out-of-state projects. CARB staff is prepared to handle the burden of reviewing existing projects to determine if they qualify for DEBS.

Commenters assert that applying DEBS requirements to existing offsets is impermissibly retroactive. Whether a statute or regulation has retroactive effect is based on “whether it would impair rights a party possessed when he acted, increase a party's liability for past conduct, or impose new duties with respect to transactions already completed.” *Aktar v. Anderson*, 58 Cal. App. 4th 1166, 1180 (1997) (quoting *Landgraf v. USI Film Prod.*, 511 U.S. 244, 280 (1994)); see also *Sturges v. Carter*, 114 U.S. 511, 519 (1885) (a retroactive statute is one that “takes away or impairs vested rights acquired under existing laws, or creates a new obligation, imposes a new duty, or attaches a new disability”). However, AB 398 and CARB's adopted regulations do not apply retroactively (and thus there was no need for the Legislature to have explicitly indicated that AB 398 applies retroactively). Indeed, the DEBS requirement only applies to compliance events prospectively (i.e., for the post-2020 period). All existing offsets can still be used for compliance post-2020. Up to one-half of the offset usage limit post-2020 can be satisfied with offsets that do *not* provide DEBS. An offset holder can choose to not seek to have its existing offsets qualify for DEBS, and such offsets would still be valid for post-2020 compliance as non-DEBS offsets. Therefore, it is simply not the case that permitting the offset project operator or offset holder to demonstrate that existing offsets qualify for DEBS is in some way equivalent to retroactive regulation. Allowing existing offsets to qualify for DEBS does not impair rights a party possessed when he acted, increase a party's liability for past

conduct, or impose new duties with respect to transactions already completed. Retroactivity concerns are not implicated here.

One commenter asserts that, if the DEBS provision is construed to apply to existing offsets, it likely would be found to be unconstitutional by depriving the holders of those offsets of a vested right without due process. First, offsets do not create vested rights for their holders or issuers. The Regulation explicitly indicates that a compliance instrument (including an offset credit) does not constitute property or a property right (Cal. Code Regs., tit. 17, § 95820, subd. (c)), and an offset holder has no vested right in an offset credit or to pollute, even if the value of existing offsets were in some way impaired by AB 398. Second, the commenter misconstrues the case law. The court in *California Chamber of Commerce v. State Air Resources Bd.*, 10 Cal. App. 5th 604, 647 (2017), merely recognized that “the due process and takings clause concepts of property are not coterminous,” and that the “due process clause recognizes a wider range of interests in property.” Though the court did recognize a property right as between private entities (and not between a private entity and the State), the court did not recognize any vested right (to pollute or otherwise to have or use an offset). (*Id.* at pp. 639, 647-48.) Indeed, the court recognized a private property interest as part of its reasoning that the cap-and-trade auction system does in fact confer a benefit to the purchasers of compliance instruments and thus is not a tax. (*Id.*) That was the issue before the *California Chamber of Commerce* court, not whether the Due Process Clause is implicated through changes in offset credit regulations. Even if the Due Process Clause applies vis-à-vis offset credits, due process is not impaired in this case because the DEBS requirement is created by statute and further defined by regulation. In a case such as this, the Due Process Clause is satisfied by such generally applicable regulation, and individual notice and a hearing are not required. See *United States v. Locke*, 471 U.S. 84, 108 (1985); *Texaco, Inc. v. Short*, 454 U.S. 516, 532 (1982); *Bi-Metallic Inv. Co. v. State Bd. of Equalization*, 239 U.S. 441, 445 (1915).

Moreover, CARB staff does not believe that application of the DEBS criteria and determination will create market uncertainty, mainly because it is unlikely that a significant number of pre-2021 offset credits will be unsurrendered in 2022. As identified in section (C)(1)(a)(ii) of the Updated Standardized Regulatory Impact Assessment (SRIA) for this rulemaking (see Appendix C to the ISOR), there were approximately 69 million CARB offset credits in entity accounts at the time of the release of the SRIA, with a maximum potential demand of 100 million CARB offset credits for the third compliance period. Therefore, CARB staff expects it is likely that the majority of pre-2021 credits will have been surrendered by 2021. Out-of-state projects can also begin submitting documentation for DEBS determination in early 2019 (and up until December 31, 2021) for both new and existing projects, which should allow sufficient time for the majority of projects to have the determination made significantly in advance of the first compliance

event where the DEBS requirement will apply (November 1, 2022, for 2021 emissions). This will allow any offset holders enough time to rebalance their offset portfolio as necessary.

Some commenters assert that the application of the DEBS requirement post-2020 to all offsets will deter future offset projects from being developed. It is unclear how CARB's treatment of existing offsets for DEBS purposes would deter the future offset market, as all new out-of-state offsets would need to submit documentation to demonstrate that they generate DEBS, should the offset project operator seek to have that determination apply to the new offsets. The requirement for new offsets applies irrespective of how existing offsets are treated.

CARB staff will review each DEBS request as expeditiously as possible, for both new and existing projects. While CARB staff does not believe 30 days is an unreasonable timeframe to review DEBS determinations, the review timeframe will depend on the number of projects that submit DEBS documentation immediately after the regulatory modifications become effective, and as such CARB declines to place a hard limit on the review timeframe in the Regulation to ensure that all projects receive a timely and thorough review by staff.

With respect to the comment requesting further specification of DEBS criteria, see Response to 45-Day Comment G-3.16.

DEBS Public Input

G-3.21. Comment:

Because the current process for determining whether a project provides DEBS is a case-by-case determination, however, it is critical that the process include an opportunity for public participation. In particular, members of the public who live near projects, or are affected by projects attempting to use out-of-state offsets should have an opportunity to provide comment potential adverse impacts. In addition, public comment would allow area experts to review, evaluate, and comment on the data and other information provided by the applicant (or provide any other relevant information). (CENTERBIODIV)

Response: CARB staff disagrees that it is critical to have public participation in the determination of DEBS for out-of-state projects. The criteria for out-of-state projects to qualify for DEBS in the Regulation were subject to the formal public notice and comment process, including workshops and comment periods to allow for adequate public participation. The existing regulatory requirements are sufficient for CARB staff to make an objective determination of DEBS. This is similar to all Compliance Offset Protocols, which have a public process prior to adoption by the Board and then rely on the expertise of CARB staff, along with accredited third-party verifiers and experienced Offset Project Registries, in

determining if a given project meets the requirements of the corresponding Compliance Offset Protocol. CARB staff has the project-specific expertise to make a reasonable determination regarding whether a project provides DEBS.

The process developed by CARB staff in the adopted amendments is a thorough and transparent process that will make a clear determination as to whether the project provides DEBS. All DEBS-related project documentation will be publicly posted so stakeholders can see the documentation used to justify DEBS. As such, CARB declines to incorporate the suggested change.

G-4. DEBS Determination Process

Protocol-Based DEBS Determination

G-4.1. Comment:

And so the only comment we would – we would suggest is that, along with what Roger said earlier, was that the sooner you can figure out what an out-of-state DEBS is and go on a project-level, project-type basis, rather than a case-by-case basis -- I mean, a protocol basis, that would be helpful to allow folks to understand what their investments mean, and how quickly they can understand if you're an entity buying an offset, what category it falls into, because there are certain market requirements that are playing out as we speak. (VERA2)

Comment:

We also appreciate that Section 95989(b) provides that the requisite scientific showing can be made for an “*offset project type*.” We understand the inclusion of this term to mean that CARB will establish a process that will facilitate replicability, such that a determination that a particular project type provides DEBS could later be applied to other projects of the same type. This is critical to provide the regulatory certainty that is necessary to ensure investments in offset projects, and also to provide administrative efficiency so that CARB’s processes do not become over-burdened and unduly delayed. We ask that this too be confirmed and clarified. (IPRE)

Response: See Responses to 45-Day Comments G-3.1.

Timing of DEBS Determination

G-4.2. Comment:

We also encourage ARB staff to provide clear procedural guidelines for determining the DEBS requirements by protocol. The proposed language provides helpful insight into the types of DEBS-related evidence ARB staff will be expecting for out of state projects. However, it is not clear when ARB staff will make a DEBS determination for out of state projects. Since this will likely impact the feasibility of such projects, we would appreciate additional clarity on the procedure for reviewing and approving or denying DEBS-related materials. If DEBS determinations are delayed until after issuance of registry offset

credits (when ARB typically begins reviewing project materials), we believe this could negatively impact the volume of projects and potentially cause a slowdown in the market. Allowing for an initial review during project listing, for instance, may help alleviate these potential delays. (CLIMACTRESERV)

Comment:

If ARB does move forward with retroactive evaluation, Finite believes that rulings on the DEBs designation should be made as expeditiously as possible. The current language only indicates a deadline for DEBs applications for existing projects to be received but includes no parameters for when a decision for any application must be made.

Prolonged uncertainty about the DEBs status of particular projects will contribute to the significant market uncertainty and disruption previously described. We urge ARB to include a requirement that DEBs applications will be responded to within 45 days of receipt of the DEBs materials outlined in §95989(b), and to be transparent about its DEBs decisions to create an efficient system for future DEBs applicants and ARB staff.

For the evaluation of new projects, the proposed language in §95989(c) states that the materials relevant to the DEBs designation shall be submitted along with the first reporting period Offset Project Data Report. Finite has significant concerns about this timing because these DEBs determinations will likely impact investment decisions that need to be made much earlier in the project development cycle. Finite proposes that relevant materials should be allowed to be submitted at the time of listing a new project, and ARB should be required to make its decision within 45 days of receipt of the DEBs application materials listed in §95989(b). (FINITECARBON)

Comment:

- For projects that are subject to the DEBS evaluation, we encourage ARB to review applications early and expeditiously in order to reduce market uncertainty and encourage continued investment in offset project development. (NEWFORESTS)

Comment:

DEBs application and approval criteria also must be completed well in advance of 2021 to facilitate purchase planning and inventory management. In addition, the application and approval should occur at or before “listing” rather than upon submission of the Offset Project Data Report in order to facilitate investment decisions. Ideally, ARB should set an enforceable timeframe in which to review and approve DEB applications (i.e. 45 days) to avoid increasing the backlog of offset issuance. According to ClearBlue Markets, ARB is currently averaging 214 days for review of forestry projects even though the regulation specifies a 45-Day review period. (SHELL)

Comment:

And for us, the view of a reduction in offset utilization is not only going to increase cost to ratepayers, but it's going to hamper the ability to inspire others to follow and create these types of projects. In a way, I view the offset program as an ambassador, in being able to work with public agencies, private landowners, different folks across the U.S. to inspire change. With that in mind, a couple of specific ideas. It would be our recommendation... also that the process for review for DEBS designation would take place pretty quickly.

I think there's currently a backlog of review right now for projects that are in the queue.

And we – we're kind of fearful that depending on how this goes, if there's a project-by-project review on DEBS designation, that backlog is going to increase even more. And so I think there's an opportunity here for transparency and replicability in decisions that are made about application of this DEBS issue that I think will be really important. And my final comment is uncertainty around the DEBS issue is not good for the program overall.

It's going to lead compliance entities to be uncertain with what they have, and new projects will be on hold. (BLUESOURCE2)

Response: CARB staff does not agree that making DEBS determinations with listing is more appropriate. CARB staff has already explained in the ISOR (pp. 51-54) how all in-state project types satisfy the DEBS requirement so no further analysis is required for these projects. For the evaluation of out-of-state projects, there can be significant changes in a project between listing and the end of the first reporting period, and CARB does not want any market uncertainty by withdrawing a DEBS determination based on project documentation that has not been finalized. CARB staff needs to have the best, most accurate information available at the time of determination to make a fully informed determination. Due to the transparent nature of the Program, after the first few determinations have been made, other projects will have a better idea of whether their project will be determined to have DEBS prior to completing any financial feasibility studies. CARB staff will work to make a determination of DEBS eligibility as quickly as possible after receiving complete and accurate information. See also Responses to 45-Day Comments G-3.1 and G-3.17.

G-5. Offset Issuance and Usage*Conflict of Interest***G-5.1. Comment:****Requirements for Conflict Of Interest Assessment**

Additionally, the potential changes to Section 95979 of the Regulation present a useful opportunity to make further modifications to strengthen the clarity of this section as it

pertains to use of subcontractors, and we would like to encourage your staff to take such measures. The specific areas to which we would like to call the attention of your staff are identified below.

- Section 95979(b)(2) of the Regulation applies to “any staff member of the verification body or any related entity or any member of the offset verification team”. “Member”, as defined in Section 95979(b), means “any employee or subcontractor of the verification body or related entities of the verification body”. It is unclear what is meant by “subcontractor”, particularly whether this term refers to entities with which a verification body has a contractor-client relationship or whether it refers to individuals who are employed by such entities. The “evaluation of conflict of interest for offset projects” form required by ARB implies that the latter definition of “subcontractor” is intended by ARB, as does the reference “the verification team” in Section 95979(b)(2) (as a verification team is a collection of individuals, not entities), but it would be best if this could be clarified in the Regulation through a definition of the term “subcontractor”.
- Section 95979(c) of the Regulation states that “The potential for a conflict of interest must be deemed to be low where no potential for a conflict of interest is found under section 95979(b) and any non-offset verification services provided by any member of the verification body to the Offset Project Operator, Authorized Project Designee, if applicable, and any technical consultant(s) used by the Offset Project Operator or Authorized Project Designee within the last five years are valued at less than 20 percent of the fee for the proposed offset verification...” Given the definition of “member”, as quoted above, it is unclear whether the reference to “any member of the verification body” refers solely to staff members of the verification body or whether this language also refers to sub-contractors with which the verification body has a contractor-client relationship. The latter interpretation would be extremely cumbersome for offset verification bodies, such as SCS, that provide a wide array of certification and verification offerings, and would impose an extraordinary paperwork burden in order to identify situations that, practically speaking, have no potential to result in a real or perceived conflict of interest⁵³⁷. We suggest that the language quoted above be revised to the following (added language in bold): “The potential for a conflict of interest must be deemed to be low where no potential for a conflict of interest is found under section 95979(b) and any non-offset verification services provided by any **staff** member of the verification body to the Offset Project Operator, Authorized Project Designee, if applicable, and any technical consultant(s) used by the Offset Project Operator or Authorized Project Designee within the last five years are valued at less than 20 percent of the fee for the

⁵³⁷ There are over 1,000 unique records in SCS’ subcontractor database. Almost all of these pertain to subcontractors working under programs that (1) are insulated, both formally and informally, from SCS’ Greenhouse Gas Verification Program and (2) as such, have no potential to impact the outcome of any offset verification services provided by SCS.

proposed offset verification...” This change would codify a much more logical interpretation that is consistent with the design of the “evaluation of conflict of interest for offset projects” form required by ARB. (SCS)

Response: CARB staff disagrees that any clarification is necessary. “Member” is clearly referring to individual people and not entire companies. Section 95979(b)(2) uses the term “member” twice: 1) any staff member of the verification body, and 2) any member of the verification team; in both instances the term “member” is clearly referring to an individual. Therefore, for the conflict of interest evaluation, any person acting as a subcontractor to the verification team would have to be evaluated. This would not require other employees of the subcontracting company to be evaluated. This is consistent with the intent of a conflict of interest evaluation.

Amendments to section 95979(c) are outside the scope of this rulemaking, as that section was not modified in the 45-Day amendments. However, the consideration of conflict of interest for individual people working as subcontractors is critical to the integrity of the verification process. Any individual person acting as a subcontractor, which would be identified as high or medium conflict of interest, must be removed from the verification team. This is consistent with how the Program has been implemented, as pointed out by the commenter when referring to the Conflict of Interest Self Evaluation form available on the CARB website.

G-6. Compliance Offset Protocols

Transitioning Projects

G-6.1. Comment:

Requirements for Transitioning Projects

We wish to draw your attention to Section 95973(a)(2)(D) of the proposed amendments, which contains the following addition (added language is in underline):

The Offset Project Operator or Authorized Project Designee may transition an offset project to the most recently incorporated version of the Compliance Offset Protocol by updating the listing information in an Offset Project Data Report pursuant to section 95976. Projects transitioning to the most recent version of the Compliance Offset Protocol may only do so with an Offset Project Data Report submitted to ARB or the Offset Project Registry prior to the site visit, pursuant to section 95977.1(b)(3)(D). To properly transition to the most recent version of the Compliance Offset Protocol, the Offset Project Data Report for the transitioning project must specify the most recent protocol version as the version under which the project is reporting, pursuant to section 95976(d)(10). Projects may only transition to the latest version of the Compliance Offset Protocol during a reporting period that is subject to a full offset verification. A project will be considered to have completed the transition to the most recent version of the

Compliance Offset Protocol at the time a Positive or Qualified Positive Offset Verification Statement for the applicable reporting period has been approved by ARB.

While we applaud the intent of adding flexibility regarding when transitioning to a new protocol version takes place, there is one area in which the above language, as applied to the forestry protocols, is unclear. When taken together with the pre-existing language, the proposed amendments require submission and reporting, in an offset project data report (OPDR) submitted for transition purposes, of information (e.g., ownership documentation, baseline information) that is typically only included in the initial OPDR and verified in the initial full verification per Section 95977.1(b)(3)(A)(d)(1) of the Regulation. In that case, the requirements of the Regulation in terms of verification are aligned with the requirements in terms of project listing information. However, the proposed amendments do not seem to make provision for verification of the listing information that would be required to be contained in the OPDR. The language refers to a “full offset verification”, but a full offset verification after the initial verification is of limited scope, and does not typically include review of items such as ownership documentation and baseline modeling. We are concerned that, by introducing requirements for provision of information in the OPDR without introducing commensurate requirements for verification of such information, the proposed amendments may be self-contradicting. We recommend a detailed review to ensure that requirements for verification are aligned with requirements for inclusion of listing information in the OPDR. (SCS)

Response: CARB staff agrees with the comment and has made modification to the Regulation in the 15-Day amendments to require that a verification that occurs after transitioning to a new version of a Compliance Offset Protocol must meet all the requirements of an initial verification found in section 95977.1(b)(3)(D)1. This will require a full review of the listing document and baselines for conformance with any new or modified requirements in the new Compliance Offset Protocol.

G-7. Protocols and Regulatory Compliance

New Protocols

G-7.1. Comment:

Maximizing offsets will have direct positive economic and environmental benefits within California and PG&E would like to reiterate a few recommendations from our previous comments to support full usage of offsets. We encourage ARB to actively support the development of offset projects that meet the DEBS requirement as the current forecasted supply isn't sufficient to allow full usage of the offset limit. (PG&E)

Comment:

AB 398 also created the Offset Protocol Task Force (OPTF) -- charged with finding *more* offset protocols to use in the program. SMUD believes that with the increased

focus on offsets that provide direct environmental benefits (DEBs), the OPTF should consider new offset protocols established for land-based carbon sequestration. There are enormous challenges to implementing offset projects (for compliance or even voluntary markets) on a farm or a ranch, where natural systems combine to create variability and interdependency that is very unlike outputs from stacks or other engineered systems. The available supply of offsets that provide DEBs is not clearly sufficient to meet the amounts required by AB 398, and local land based offsets could become a significant new source.

SMUD sees a significant potential opportunity in land-based carbon sequestration to help meet our goals to reduce local and regional GHG emissions and plan for a “net zero” GHG future for our region. These potential offset projects would benefit from protocols that support small project aggregation (for multiple measures implemented on a single farm, and single or multiple measures implemented on multiple farms) and leverage transparent scientific benchmarks without being overburdened with undue administrative costs for creating offsets from the projects. SMUD looks forward to working with the OPTF on this topic. (SMUD)

Comment:

In further developing its Proposed Amendments, ARB should:...

- Consider adopting Compliance Offset Protocols for offset projects located outside the United States;...

ARB Should Consider Adopting Compliance Offset Protocols for Offset Projects Located Outside of the United States

Policy Integrity agrees with ARB that “it is important for California to consider the importance of reducing emissions from tropical deforestation and from other uncapped sectors.”⁵³⁸ As ARB correctly notes in its Statement of Reasons, “[I]t is not important where a reduction [in greenhouse gases] occurs since the science supports that a GHG reduction anywhere is a benefit everywhere.”⁵³⁹ Moreover, some offset projects located outside the United States can have great environmental co-benefits. An offset project that prevented the deforestation of the Amazon rainforest, for example, would be a boon to conservation efforts.⁵⁴⁰

ARB has the legal authority to approve these offset projects. AB 398 invests ARB with broad discretion in its regulation of offset projects. The only geographic restriction on offset projects provided by statute is a requirement that at least one-half of all offsets

⁵³⁸ STATEMENT OF REASONS, supra note 17, at 50.

⁵³⁹ Id. at 50.

⁵⁴⁰ See Michael Oppenheimer and Steve Schwartzman, How California Can Save the Amazon, N.Y. TIMES (Aug. 29, 2018), <https://www.nytimes.com/2018/08/29/opinion/california-climate-save-amazon.html>.

provide direct environmental benefits to the state (DEBS).⁵⁴¹ All other offset projects are geographically unlimited.

Of course, any offset project—located inside or outside the United States—must provide “real, additional, quantifiable, permanent, verifiable, and enforceable” reductions of greenhouse gases.⁵⁴² ARB should explore drafting a tropical deforestation offset protocol that addresses these concerns. (POLICYINTEGRITY)

Comment:

We also encourage ARB’s continued support for the development of projects that reduce emissions in tropical deforestation and other uncapped sectors. (PG&E)

Comment:

The June 21 staff presentation demonstrated: [1] that some individuals and groups are using the DEBS language to restrict the applicability of accepted methodologies and even criticize in-state projects because all the reduced GHG emissions are just being used to offset in-state emissions - they are not additional; and [2] of all the offset credits issued to date from the six existing authorized methodologies, only about 20% come projects that are located in-state and clearly meet DEBS criteria (forestry and livestock). We suggest this demonstrates the need for additional protocols to be adopted that can generate DEBS. (DENTONS)

Response: These comments are outside the scope of the current rulemaking. However, ARB staff is always looking for potential new Compliance Offset Protocols that meet the criteria of AB 32: real, permanent, quantifiable, verifiable, enforceable and additional. CARB staff will be working in the future independently, and with the Compliance Offset Protocol Task Force, to identify potential new Compliance Offset Protocols.

Regulatory Compliance

G-7.2. Comment:

- We support the changes in Appendix E that allow offset projects that were not in compliance with occupational health and safety regulations or that missed reporting deadlines to still be eligible for credit issuance if the noncompliance events have been resolved. However, these are only two examples of non-GHG related compliance events that have no impact on the integrity of the offsets generated. We support the recommendations of the CFCC to broaden the category of forestry activities that are outside the regulatory compliance evaluation to any activities that do not have a material and direct adverse environmental impact within the project area. (NEWFORESTS)

⁵⁴¹ CAL. HEALTH & SAFETY CODE §38562 (c)(2)(E)(i).

⁵⁴² Cal Code Regs. tit. 17 § 95970(a)(1).

Comment:

As a forest offset project participant, we're encouraged and thankful that ARB is looking and taking this opportunity to make improvements in that forest offset program. Sierra Pacific believes that the most beneficial regulatory proposal that you'll be evaluating during this process for the forest offset program comes from the California Forest Carbon Coalition, and their proposals -- their regulatory proposal for environmental health and safety regulation invalidations under 95973(b)(1) in Appendix E. Currently, the environmental health and safety invalidation regulations imposes significant negative economic penalties for any environmental health and safety violation, regardless of whether or not it impacts the environmental integrity of the project, or even if the violation occurs on site. So this creates a lot of negative economic uncertainty relative to economic risk of making further investments in the Forest Protocol Program. The proposal by the California Forest Carbon Coalition solves much of those issues. They -- in the proposal, it ensures that all offset project operators must comply with all environmental health and safety regulations. It provides -- it incentivizes the identification and cessation of offending activities, and it provides a clear and equitable means of developing the penalty for any environmental health and safety violation. So in doing so, it removes that negative economic risk and should greatly increase the participation for further offset project investments. So for those reasons, I'd hope that you'd support those recommendations from the California Forest Carbon Coalition for the environmental health and safety invalidation regulation changes to 95973(b)(1) and appendix E. (SPI)

Comment:

1. Environmental, Health and Safety Violations: The current cap and trade regulation provides objective criteria for when an offset overstatement or use in another program results in an invalidation. However, the criteria for determining when a violation of a local, state or national environmental, health or safety (EHS) regulation results in an invalidation are vague and the remedies are unclear. The resulting uncertainty discourages forest offset project development, particularly in California which has the most stringent forest practice and EHS rules in the country. The inability to quantify the risk of invalidation also discourages the purchase of forest offsets by many small covered entities that may be most in need of cost containment.

CFCC has provided language changes to the Preliminary Discussion Draft in the attached Appendix we hope CARB will consider. These changes build on our May 10th, 2018 comments to CARB requesting a change to how certain types of EHS violations impact forest carbon offset projects.

APPENDIX

CFCC Suggested Regulatory Changes to CARB's Preliminary Discussion Draft Regarding Environmental Health and Safety Violations

The dark underscored text are changes that appear in the Proposed Regulation Order dated September 4, 2018. The red[**bold**] additions and ~~strike-outs~~ are changes requested by the California Forest Carbon Coalition.

Section 95973

95973 (b) Local, Regional, State, and National Regulatory Compliance and Environmental Impact Assessment Requirements. An Offset Project Operator or Authorized Project Designee must fulfill all local, regional, state, and national requirements on environmental impact assessments that apply based on the offset project location. In addition, an offset project must also fulfill all local, regional, state, and national environmental and health and safety laws and regulations that apply based on the offset project location and that directly apply to the offset project, including as specified in a Compliance Offset Protocol. The project is considered out of regulatory compliance if the project activities were subject to enforcement action by a regulatory oversight body during the Reporting Period, although whether such enforcement action has occurred is not the only consideration ARB may use in determining whether a project is out of regulatory compliance.

(1) An offset project using a protocol from sections 95973(a)(2)(C)1., 2., 4., or 5. that is out of regulatory compliance is not eligible to receive ARB or registry offset credits for GHG reductions or GHG removal enhancements that occurred during the period that the offset project is out of regulatory compliance. The Offset Project Operator or Authorized Project Designee must provide documentation indicating the beginning and end of the time period that the offset project is out of regulatory compliance to the satisfaction of ARB.

(A) The time period that the offset project is out of regulatory compliance begins on the date that the activity which led to the offset project being out of regulatory compliance actually began and not necessarily the date that the regulatory oversight body first became aware of the issue. For determining the initial date of the offset project being out of regulatory compliance the Offsets Project Operator or Authorized Project Designee must provide one or more of the following to ARB:

1. Documentation from the relevant local, state, or federal regulatory oversight body that expressly identifies the precise start date of the offset project being out of regulatory compliance. Documentation must include evidence of the start date such as CEMS or other monitoring data, engineering estimates, satellite imagery, witness statements, or other reasonable method to aid in the identification of the precise start date; or

2. **Documentation provided by an Offset Project Operator or Authorized Project Designee notifying the relevant local, state, or federal regulatory oversight body of the precise date upon which an activity resulted in the offset project being out of regulatory compliance; or**

~~2.3.~~ Documentation of the date of the last inspection by the relevant local, state, or federal regulatory oversight body that did not indicate the offset project was out of regulatory compliance for the activity in question. The project will be considered out of regulatory compliance beginning the day after the inspection.

~~34.~~ If the last inspection described in section 95973(b)(1)(A)~~23.~~ above was prior to the beginning of the Reporting Period, or if documentation regarding the date the project was out of regulatory compliance is not provided as set forth in sections 95973(b)(1)(A)(1), ~~(2)~~ or ~~(2)3~~ above to the satisfaction of ARB, then the time period that the offset project is out of regulatory compliance, for purposes of the Reporting Period, commences at the beginning of the Reporting Period.

(B) For determining the end date when the offset project returned to regulatory compliance, the Offset Project Operator or Authorized Project Designee must provide documentation from the relevant local, state, or federal regulatory oversight body stating **the date** that the **activity that led to the offset project is back in being out of regulatory compliance ceased.** The date when the offset project is deemed to have returned to regulatory compliance is the date that the **relevant local, state, or federal regulatory oversight body determines that the project is back in regulatory compliance. This date is not necessarily the date that the activity ends or the device is repaired, and may include time for the payment of fines or completion of any additional requirements placed on the offset project by the regulatory oversight body, as determined by the regulatory oversight body. activity that led to the offset project being out of regulatory compliance has ceased, provided that the offset project has fulfilled the any remediation or other enforcement measures required by the relevant regulatory oversight body with respect to the subject activity prior to the submittal of a request for issuance of ARB offset credits pursuant to section 95981 or the determination of the daily emission reductions subject to invalidation pursuant to section 95973(E).** If the regulatory oversight body does not provide a written determination regarding the date when the project returned to regulatory compliance in accordance with the foregoing criteria to the satisfaction of ARB, the Offset Project Operator or Authorized Project Designee may provide documentation to ARB clearly identifying the date the project returned to regulatory compliance. Documentation should be dated, official correspondence, with the relevant regulatory agency, such as a consent decree, inspection report, or other such documentation, identifying that the project has returned to regulatory compliance. If the relevant regulatory oversight body does not provide a written determination regarding the date when the project returned to regulatory compliance to the satisfaction of ARB, and the Offset Project Operator or Authorized Project Designee is unable to provide documentation clearly identifying the date the project returned to regulatory compliance to the satisfaction of ARB, then for purposes of the applicable Reporting Period, the Offset Project Operator or Authorized Project Designee must use the end of the

Reporting Period for the end-date when the offset project returned to regulatory compliance.

95973(b)(1)(E) For determining GHG emission reductions or GHG removal enhancements for the Reporting Period as modified to reflect any period the offset project was out of regulatory compliance, the Offset Project Operator or Authorized Project Designee must remove the days when the project was out of regulatory compliance from the Reporting Period using the following methods:

3. For projects using a protocol in section 95973(a)(2)(C)4., the entire calendar day during which any portion of the project was not in regulatory compliance must be removed by dividing the total calculated emissions reductions for the 12 month period from the end of the previous Reporting Period, by the total number of days in the previous 12 months, either 365 days or 366 days, to calculate a daily emissions reductions. For purposes of this Section 95973(E)3, the period during which the project was not in regulatory compliance shall be that period that begins on the date that the activity which led to the offset project being out of regulatory compliance actually began and ends on the date that such activity ceased as established pursuant to Section 95973(b)(1). The daily emissions reductions will be multiplied by the number of days the project was not in regulatory compliance and this number will be added to the project baseline for the end of the Reporting Period and the emissions reductions for the Reporting Period, excluding the days the project was out of regulatory compliance, will be calculated.

Appendix E: Offset Project Activities Within the Scope of Regulatory Compliance Evaluation. For all project types, projects that were not in compliance with requirements regarding occupational, local, regional, state, and national environmental and health and safety laws and regulations, statutes, or laws, or the timely submittal of periodic reports as required by permits, regulations, statutes, or laws, under Section 95973(b) during the reporting period a Reporting Period, are still eligible to receive ARB offset credits if the noncompliance determination of the period during which the project was out of regulatory compliance has been resolved established pursuant to Section 95973(b)(1) and any obligations necessary to return the project to regulatory compliance as prescribed by the relevant regulatory oversight body have been met prior to the submittal of a request for issuance of ARB offset credits pursuant to section 95981. This appendix identifies the specific project activities considered for regulatory compliance by project type.

(d) Projects Using a Compliance Offset Protocol in Section 95973(a)(2)(C)4. All project activities within the project area that directly affect carbon stocks must be in compliance with all requirements that have a bearing on the **environmental** integrity of the generated offsets. This includes site preparation, planting, harvesting, and monitoring.

Activities external to the project area, such as transportation of logs to mills, mill operations, and landfilling, **are outside the project regulatory compliance assessment or that otherwise do not have a material and direct adverse environmental impact within the project area, are outside the project regulatory compliance assessment. For example, requirements regarding occupational health and safety regulations, statues, or laws, or the timely submittal of periodic reports required by permits, regulations, statues, or laws are not within the scope of regulatory compliance evaluation.** (CFCC)

Response: The changes recommended to section 95973(b)(1)(A) by the commenter are outside the scope of the current rulemaking as that section was not included in the 45-Day amendments.

For the comments in relation to section 95973(b)(1)(B), CARB staff disagrees with limiting the period the project is out of regulatory compliance to just the period the activity is occurring. As the existing language notes, the project may not be back in compliance on the date the activity ceased. When available, CARB staff will rely on the determination of the relevant regulatory agency to determine when the project is back in regulatory compliance.

In response to these commenters' concerns about identifying the exact dates the project is out of regulatory compliance, CARB staff adopted 15-Day modifications to section 95973(b)(1)(B) to further clarify the types of information that CARB staff may review to determine the dates that must be removed from the reporting period if the regulatory agency is unable to provide the exact dates.

CARB staff disagrees with the commenter's proposed modifications to Appendix E. As can be seen from section 95973(b), regulatory compliance is in regard to environmental and health and safety laws. Making the commenter's modifications would eliminate any review under section 95973(b) because all requirements would be eliminated by the proposed modifications to Appendix E.

The commenter's changes to Appendix E, subparagraph (d) are not necessary because the requested exemptions, based on the examples provided, are exactly the same exemptions in the adopted regulatory amendments.

CARB staff would be happy to review other regulatory compliance events that stakeholders believe should be outside the scope of the regulatory compliance review. However, CARB staff has asked stakeholders to provide this information for over two years for our review and has not received information on other types of violations that CARB staff determined to be outside the scope of regulatory compliance. Therefore, as part of this rulemaking, CARB staff is unable to identify additional items for inclusion in Appendix E.

G-7.3. Comment:

§95973(b)(1)(E) – Updated approach to regulatory compliance

We appreciate ARB's effort to provide flexibility to Forest Offset Projects in regard to regulatory compliance eligibility requirements. The revision to this section will provide an important level of clarity to the market moving forward. We suggest that ARB staff provide additional details regarding the impact of such violations on future reporting periods, as this section appears to primarily address the reporting period in which the violation takes place. Our assumption is that the project baseline must be modified for all reporting periods moving forward, but this is not clearly stated.

Furthermore, we would urge ARB staff to consider allowing similar approaches for urban forest and rice cultivation offset projects. We believe urban forest projects could be treated similar to forest projects, as described in this section, while rice cultivation projects could pro-rate emission reductions based on the number of days out of compliance. We see no reason to exclude these project types from the flexibility afforded to others and believe providing clarity on this matter may help improve uptake of these underutilized Compliance Offset Protocols.

Lastly, ARB staff have recently provided guidance with respect to the application of § 95973(b)(1)(E) to livestock projects. The guidance confirmed that for every day the project is out of regulatory compliance, the project must remove such full days from the modelled or measured baselines, but continue to account for all project emissions. In examining the livestock 2014 COP equations closely - in particular, Equations 5.8 and 5.9 - it appears these equations support the removal of project emissions (as well as baseline emissions) during periods the project is out of regulatory compliance, in so far as those equations quantify project emissions based on reporting period days. It is the Reserve's long-standing interpretation of the livestock COP that the appropriate requirement is to remove days a project is outside of regulatory compliance from both the baseline and the project emissions, when using the modelled emission reductions. We believe this approach effectively penalizes the project by ensuring it is not issued credits for any period during which it is out of regulatory compliance. The most recent ARB interpretation effectively penalizes the project further, by requiring them to still account for full project emissions during any such period the project is out of regulatory compliance. This interpretation has the potential to significantly impact emission reductions, such that even a small period of regulatory non-compliance could result in no emission reductions for the entire reporting period. Given the complex regulatory framework that livestock projects typically operate under, this current interpretation has the potential to significantly affect the emission reduction potential of the program, and livestock COP project feasibility. The Reserve advocates that §95973(b)(1)(E) and/or the 2014 Livestock COP, be amended to make it clear that any day with a noncompliance issue should be removed from both the baseline and project emissions

when using the modelled baseline approach. We believe such an approach is conservative, that it provides a strong signal with respect to regulatory compliance, and that it does so without being overly punitive.

The Reserve also advocates that §95973(b)(1)(E) and/or the 2014 Livestock COP be amended to direct that during periods that a project is out of regulatory compliance, the project should also remove all CO₂ emissions from its emission reduction calculations (provided the combined project and CO₂ emissions do not exceed baseline emissions during the period the project was out of regulatory compliance). For projects that consume a significant amount of fossil fuels (for instance in the use of kilns to dry manure), requiring projects to account for these CO₂ emissions for even a short period of time, could significantly reduce overall project emission reductions. This suggested change in guidance would ensure that projects receive no emission reduction credits during periods of regulatory non-compliance, without overly penalizing projects. (CLIMACTRESERV)

Response: For comments to the provisions requiring only the baseline emissions, and not the project emissions, to be removed from the project during periods the project is out of regulatory compliance, see Response to 45-Day Comment G-1.10. CARB staff has not received any urban forest or rice cultivation compliance offset projects to date, so we are unable determine what modification to the regulatory compliance provisions would be necessary. When CARB staff has reviewed several of these projects, staff may propose future modifications to section 95973(b) and Appendix E as necessary.

Regulatory Compliance OSHA

G-7.4. Comment:

VERA has one suggested clarification to this section [Appendix E] of the amendment package. CARB should clarify that “occupational health and safety” regulation include both the Occupational Safety and Health Administration and the Mine Safety and Health Administration. (VERA, 3DEGREES)

Response: CARB staff disagrees that this change is necessary in Appendix E. Appendix E contains a general reference to any violation of “occupational health and safety regulations, statutes, or laws” issued by any agency. The limitation on the regulatory compliance evaluation applies to all health and safety violations regardless of issuing agency. Thus, there is no need to identify OSHA or the federal Mine Safety and Health Administration (MSHA) specifically.

Regulatory Compliance Calculation

G-7.5. Comment:

Bluesource strongly supports the inclusion of forest carbon projects in the calculation of emission reductions associated with events of regulatory nonconformance. With regard

to calculating the emission reductions associated with such events, however, we would recommend the following changes to the proposed text:

For projects using a protocol in section 95973(a)(2)(C)4., the entire number of calendar days during which any portion of the project was not in regulatory compliance must be removed by dividing the total calculated emissions reductions for the 12 month period from the end of the previous Reporting Period, by the total number of days in the previous 12 months, either 365 days or 366 days, to calculate a daily emissions reductions. The daily emissions reductions will be multiplied by the number of days the project was not in regulatory compliance to calculate the total emissions reductions out of compliance. ~~and the total emissions reductions out of compliance his number will be subtracted from the total calculated emissions reductions for the Reporting Period to get the total emissions reduction in regulatory compliance for the Reporting Period.~~ ~~added to the project baseline for the end of the Reporting Period and the emissions reductions for the Reporting Period, excluding the days the project was out of regulatory compliance, will be calculated.~~ (BLUESOURCE)

Response: CARB staff disagrees that these changes are necessary. The entire calendar day of the violation should be removed (i.e., it is a 24-hour period and not based on the precise time the violation occurred). It is clear later in section 95973(b)(1)(E)3. that the total number of complete days (24 hours) are removed from the reporting period. Removing the emissions from the baseline as currently specified has the effect of removing the emissions from the reporting period. CARB staff believes that modifying the baseline is the more appropriate method because it still allows the use of the existing equations in the protocols without any further modification like would be required for the commenter's suggested method. Therefore, CARB declines to make the requested changes.

Livestock Project Activities

G-7.6. Comment:

Appendix E Section (b) for livestock projects should be revised to state: "...Project activities begin at waste collection and end at onsite biogas usage and the disposal of associated digester effluents lawful deposit of effluent from the digester into an approved storage basin." (VERA, 3DEGREES)

Comment:

Scope of Regulatory Compliance (Appendix E)

3Degrees also has specific recommendations in regards to the amendments made to *Appendix E: Offset Project Activities Within the Scope of Regulatory Compliance Evaluation*. 3Degrees supports the added exclusion of noncompliances relating to health and safety regulations or tardy report submittals in its eligibility for receiving ARB

offset credits. However, we stress the need for an additional exclusion to be included in Appendix E.

Crop nutrient management plans are complex, dynamic, and wide-reaching, and ultimately have no bearing on the integrity of offsets generated from livestock projects. A farm's Comprehensive Nutrient Management Plan ("CNMP") can be several hundred pages long and achieving 100% compliance can be an ongoing challenge while meeting the dynamic needs of the farm. We observe that the types of violations that livestock farms experience against their CNMP are much more related to the complexities of managing crops (fertilization rates, irrigation practices, and crop nutrient uptake rates) than they are related to the manure itself. These issues tend to be unrelated to the manure itself or to the digester which processed the manure. Such issues are not caused by the manure nor affected by the quality or production of the manure--they result instead from mistakes in implementation of a farm's CNMP. In fact, the design of manure storage basins are regulated by USDA NRCS Conservation Practice Standard No. 359 to provide enough volume capacity to store other non-project elements such as stormwater runoff, animal bedding, any raw manure that bypasses the digester, and process wastewater from the milking parlor--even further diminishing any link between the digester project and crop irrigation activities.²

Appendix E Section (b) should be revised to state: "...Project activities begin at waste collection and end at onsite biogas usage and the ~~disposal of associated digester effluents~~ lawful deposit of effluent from the digester into an approved storage basin."

In the absence of the digester project, raw manure would be deposited in the very same storage basins for subsequent irrigation use. All activities taking place beyond this point are completely unchanged and unaffected by the existence of the project.
(3DEGREES2)

Response: CARB staff strongly disagrees that the regulatory compliance evaluation should end after the effluent is removed from the digester. The majority of violations seen to date for livestock projects involve improper disposal of effluent (e.g., over application to fields or spills into waterways). Even though this suggested modification may have no impact on GHG emissions reductions, violations related to effluent disposal could have a serious environmental impacts, including on drinking water and aquatic species. CARB staff will not issue ARB offset credits to a project that is not a good steward of the environment.

Alternative Methods

G-7.7. Comment:

§95976. Monitoring, Reporting and Record Retention Requirements for Offset Projects

Finite considers the proposed addition to §95976(g) regarding approval of alternate methods to be a positive step towards improving the flexibility and adaptability of the Compliance Offset Protocols. However, Finite has concerns about the language in §95976(g) that states that “ARB may rescind approval of the alternate method at any time.” Rescinding a previously approved method in the middle of the development process or during a subsequent reporting period will be very disruptive to landowners, project developers, offset buyers and regulated entities. If a specific project has moved forward based on approval for an alternative method, it’s likely that significant resources were already invested in that specific project; for a variety of reasons, it may not be feasible for a new project to continue development using a different method or technology, or for an existing project to meet their obligations for verification. We urge ARB to continue to let the project use the interim method until the next full offset verification, required at least once every six years. Because the proposed regulatory language states that approval of an alternate method may only be submitted for a reporting period for which a project is receiving a full offset verification, it would seem reasonable for interim approval to last until the next one six years later.
(FINITECARBON)

Comment:

Additional Program Improvements

We also recommend the following improvements to the offset program to facilitate implementation for both ARB and offset project developers.

§ 95976(g) General Procedure for Approving Alternate Monitoring and Measurement Methods Pursuant to Compliance Offset Protocols

- We support the addition of a General Procedure for Approving Alternate Monitoring and Measurement Methods, particularly remote sensing methods for forestry. We believe that alternate monitoring and measurement methods can significantly increase the accuracy and precision of forest carbon estimates. However, we have concerns about the following language that “ARB may rescind approval of the alternate method at any time.” Due to the significant upfront investment required to develop forest offset projects, and particularly remote sensing technologies such as Light Detection and Ranging (LiDAR), we encourage ARB to not rescind approval of an alternate method when a project may have already invested hundreds of thousands of dollars after receiving approval from ARB. If necessary, ARB could not approve the method on a permanent basis or could even rescind approval of an alternate method from use in future reporting periods. However, we urge ARB to not rescind approval of an alternate method once it has been approved for a reporting period. Removing this language would greatly reduce the uncertainty of developing alternate methods and would encourage ongoing investment in innovation and technology.
(NEWFORESTS)

Response: In proposing section 95976(g), CARB staff determined that it is necessary to maintain the ability to rescind an approved method at any time if it comes to staff's attention that the alternate method is not at least reasonably equivalent to the accuracy of the method(s) commonly employed when the Compliance Offset Protocol was adopted, or is not capable of being verified to a reasonable level of assurance. It would not be appropriate to allow a project to continue to use a method that is not accurate or verifiable, no matter how much of an inconvenience it would be to the project operator. Approval for alternative methods will not be rescinded arbitrarily; approval would only be rescinded if an issue came to CARB staff's attention. As such, CARB staff declines to make the changes proposed by the commenters.

Correctable Errors

G-7.8. Comment:

Requirements for Addressing Discrepancies

We note the addition of the following sentence to Section 95977.1(b)(3)(M):

Correctable errors that, when summed, result in less than a three percent overstatement of the GHG emissions reductions or removal enhancements do not need to be fixed. Errors subject to the three percent exception still constitute errors for purposes of this Regulation, and the Offset Project Operator and Authorized Project Designee, if applicable, are still subject to the requirements of sections 96013 and 96014(d), especially if ARB determines the errors have been repeated across multiple Offset Project Data Reports or the errors were intentional in nature.

In our work performing offset verification services, we have found that the pre-existing language (which required that "...the Offset Project Operator or Authorized Project Designee must make any possible improvements and fix any correctable errors to the submitted Offset Project Data Report") often led to large quantities of time being expended in identifying and correcting errors with very small quantitative impacts. We agree with ARB Staff that "These changes are necessary to avoid a significant amount of work to change relatively small errors in the Offset Project Data Report." However, we have the following suggestions for improvement in the proposed amendments.

- The language that "Correctable errors that, when summed, result in less than a three percent overstatement of the GHG emissions reductions or removal enhancements do not need to be fixed" do not address whether the three percent threshold also applies to "possible improvements". As stated, the language opens the door for the possibility that a correctable error may not need to be made, due to leading to less than a three percent overstatement, but the issue could be termed an area of "possible improvement" and correction may be required nonetheless. This does not seem to be in line with the intent of ARB staff. Unless there is a compelling reason to include the reference to "any

possible improvements”, it is recommended that this language be stricken. It has always been unclear to us what the distinction was between a “possible improvement” and a “correctable error”.

- ARB staff may wish to modify “three percent” to “3.00%” for consistency with the numeric formatting in the definition of “offset material misstatement”.
- The language “...the Offset Project Operator and Authorized Project Designee, if applicable, are still subject to the requirements of sections 96013 and 96014(d), especially if ARB determines the errors have been repeated across multiple Offset Project Data Reports or the errors were intentional in nature” is highly problematic. The suggestion is that a recurring correctable error could constitute a “false, fictitious or fraudulent statement or representation” per Section 96014(d)(2). While we understand that repeated commission of the same error may seem by some to be fraudulent in nature, such a view does not take into adequate account the inherent complexities of offset project quantification of the manner in which professional judgment must often be applied in determination of whether an error exists. We find it highly inappropriate to suggest a relationship between an offset verification body’s independent determination of what constitutes an error and the assessment of criminal penalties of the Health and Safety Code. We suggest the entire clause “...the Offset Project Operator and Authorized Project Designee, if applicable, are still subject to the requirements of sections 96013 and 96014(d), especially if ARB determines the errors have been repeated across multiple Offset Project Data Reports or the errors were intentional in nature” be stricken. (SCS)

Comment:

VERA is supportive of the following staff proposals...

- Inclusion in § 95977.1(b)(3)(M) of a materiality provision
- Revised provisions for regulatory compliance in § 95973(a)(2)(C) (VERA, 3DEGREES)

Comment:

ACR supports the following staff proposals:

- Inclusion of a materiality provision in section 95977.1(b)(3)(M) (ACR)

Comment:

- We also strongly support the inclusion in § 95977.1(b)(3)(M) of a materiality provision, which will increase the focus during verification on high-risk issues that have the potential to materially impact credit issuance. (NEWFORESTS)

Comment:

Materiality

Bluesource supports the introduction of a materiality threshold and believes this will increase efficiency for ARB staff and developers alike without sacrificing integrity.
(BLUESOURCE)

Response: Thank you for the support.

The three percent allowance for correctable errors would apply to discrepancies in the Offset Project Data Report due to correctable errors or possible improvements (which are a subset of correctable errors); therefore no change is necessary.

CARB staff agrees with the comment to identify the number of decimal places to round the three percent to, and has made the modification in the 15-Day proposal.

CARB staff disagrees with the requested modifications to the regulatory language reinforcing the CARBs authority to take enforcement actions for any errors in the Offset Project Data Report. Once an error has been identified in a report, it is expected that the project operator will correct the error prior to submitting the Offset Project Data Report for the subsequent reporting period; this is especially true for any overstatements in an Offset Project Data Report. CARB must be assured that all ARB offset credits issued represent real emissions reductions.

G-8. Verification

Notice of Verification Services

G-8.1. Comment:

Requirements for Submission of Notification of Offset Verification Services

Section 95977.1(b)(1) of the proposed amendments contains the following addition:

If a verification is being audited by ARB pursuant to section 95977.1(b)(3)(W) or by an Offset Project Registry pursuant to section 95987(e) and if ARB or the Offset Project Registry notify the verification body of the audit in writing within five working days of receiving the Notice for Offset Verification Services, the verification body may not conduct the site visit until at least 40 calendar days after the Notice for Offset Verification Services is received by ARB and the Offset Project Registry, unless each auditing entity approves in writing an earlier site visit date.

The above language also existed, verbatim, in the preliminary discussion draft of potential changes that was presented during the workshop held 2 March 2018, and the below comments are identical to those raised in response to said discussion draft.

We understand that the intent is to reduce the advance notice required for offset verification services that are not being audited by ARB or an offset project registry (OPR), while simultaneously ensuring that, where offset verification services are subject to an audit, auditing staff have adequate time available in which to plan for attendance on the site visit. While we appreciate this intent, we are concerned that the 40-day waiting period, after the Notice for Offset Verification Services (NOVS) is first received by ARB and the OPR, would impose undue burden on the conduct of offset verification services. To understand why this is the case, we suggest that the following be considered:

- The NOVS is not typically submitted until after a contractual agreement has been undertaken, between the verification body and the client, to conduct offset verification services. Planning the site visit is, in our experience, an important aspect of the pre-engagement process, as such planning entails ensuring that adequate staff and other resources will be available to support the planned site visit dates. This planning process is typically carried out months in advance of the actual site visit dates, and the date(s) of on-site visits are required, by Section 95977.1(b)(1)(D)(3) of the Regulation, to be included in the NOVS. Aside from the contracting process, there are a variety of practical constraints that lead to a gap between the time of planning for the site visit and the time of submission of the NOVS.
- The limited season available for field-work across much of the United States, coupled with the regulatory deadline for submission of our offset verification statement (as set out in Section 95977(d) of the Regulation) and various practical limitations, act as an effective constraint on the universe of potential site visit dates for a given verification engagement. This is particularly the case when one considers that our staff resources (as with the staff resources of any offset verification body) are finite and, as such, a shift in the site visit dates for one verification engagement will inevitably cause conflict with site visit dates for different verification engagements, resulting in a chain reaction. By the time of submittal of the NOVS, there is often little “wiggle room” available in which to change the planned site visit dates without substantial impact to the verification process.
- While the requirements are only intended to be imposed where offset verification services are under audit, we fear that the potential changes would have the effect of forcing every verification engagement to include a 40-day lead time between submission of the NOVS and the commencement of the site visit (or, at least, to prepare for the contingency of such a lead time being imposed). A de-facto lengthening of required lead time would run counter to the intent behind the potential changes (as we understand it), which was to surgically target situations where offset verification services are subject to an audit and to allow a decrease

in lead time in other situations (i.e., to decrease the required lead time, for offset verification services not under audit, from 30 calendar days to 15 calendar days).

We suggest that one or both of the following solutions be considered in order to address our concerns.

1. Introducing a procedural step, occurring earlier than submission of the NOVS, at which ARB and/or the OPR may select offset verification services for audit and notify the offset verification body of such.
 - For example, the offset project operator or authorized project designee may be required to formally declare an intent to have offset verification services provided for a given offset project data report prior to the submission of the NOVS. Offset verification services could then be selected for audit based upon information provided in such a “notice of intent” document. This would permit offset verification services selected for audit to be identified at a relatively early stage in the planning process and for all entities involved, the OPO, APD, Offset Verification Body, ARB and/OPR to work in concert to plan the commencement of the offset verification services as well as the site visit dates. With concrete information as to which offset verification services are selected for audit, all parties would be able to proceed with enhanced certainty around timelines. Thus, even a 40-day lead time from submission of the NOVS, for offset verification services under audit, would be considered as a procedural step in the planning of the audit because all parties could confidently apply the required lead time to only the small subset of verification engagements subject to an audit, as opposed to unnecessarily lengthening the lead time on all verification engagements.
2. Shortening the required advance notice period, for offset verification services subject to an audit, from 40 calendar days to a more reasonable period, such as 20 calendar days.

We also suggest a slight revision to the following potential addition to Section 95977.1(b)(2):

If the verification body has been notified by ARB or the Offset Project Registry of an audit for the relevant verification, then the verification body must notify the auditing entity at least two working days prior to a revised start date for offset verification services and at least 15 working days prior to a revised site visit date(s), unless each auditing entity approves in writing an earlier date.

In the context of forest offset projects, all site-visit verifications must include a test of the forest carbon inventory, termed “sequential sampling”, in which a subset of inventory plots are re-measured by the offset verification body. One attribute of this test is that it does not utilize a fixed minimum sample size—rather the sample size required varies

depending upon the input data. Therefore, while the commencement of the site visit can be planned for (subject to the constraints discussed above), the final date of the site visit cannot be predicted with complete certainty, and is subject to change during the course of the site visit, depending upon the data collected. In our view, the italicized text quoted above does not adequately make allowance for this reality. Since we understand that the date of commencement of the site visit is likely to be of most significant import in planning an audit of any offset verification services, we suggest that the italicized language quoted above be revised to the following (new language is in bold):

*If the verification body has been notified by ARB or the Offset Project Registry of an audit for the relevant verification, then the verification body must notify the auditing entity at least two working days prior to a revised start date for offset verification services and at least 15 working days prior to ~~a revised site visit date(s)~~ **any revised date of commencement of the site visit**, unless each auditing entity approves in writing an earlier date. (SCS)*

Response: While CARB staff appreciates the comments, CARB staff disagrees that modifications to the Notice of Offset Verification Services section are necessary. Staff cannot make a determination on auditing a project until the verification body, verification staff, verification timing, project operator, and project location are known. CARB staff needs the 40 days to coordinate out-of-state travel to project locations. Verification Bodies can submit a Notice of Offset Verification Services as soon as they have established dates for the site visit and CARB staff will make a determination as quickly as possible.

G-9. Offset Protocol Task Force

Establishing the Offset Protocol Task Force

G-9.1. Comment:

Offset Protocol Task Force

AB 398 recognizes the value of offsets in several ways. One such reaffirmation of offsets is the creation of the Offset Protocol Task Force. This entity is charged with finding more offset protocols to use in the program. VERA is supportive of its creation and its work to find additional protocols that provide direct in-state GHG reductions. Such an entity would benefit from having technical and real-world experience in offset development, accounting, verification and trading amongst its members. (VERA, 3DEGREES)

Comment:

Compliance Offset Protocols

We encourage ARB to include in the 2019 rulemaking the update of existing protocols as well as the adoption of new protocols.

- We support the formation of the Compliance Offset Protocol Task Force to provide guidance on new protocols that can increase in-state offset development.

(NEWFORESTS, CFCC)

Comment:

OFFSET PROTOCOL TASK FORCE

AB 398 recognizes the value of offsets in several ways. One such reaffirmation of offsets is the creation of the Offset Protocol Task Force. This entity is charged with finding more offset protocols to use in the program. IETA is supportive of its creation and its work to find additional protocols that provide direct in-state GHG reductions. Such an entity would benefit from having technical and real-world experience in offset development, accounting, verification and trading amongst its members. (IETA)

Comment:

Attachment 1: October 12, 2017 Workshop Comments

3. Offsets

CARB should establish the Compliance Offsets Protocol Task force as soon as possible and include experts who have issued well-reasoned criticisms of CARB's offset rules. In consultation with the Task Force, CARB should reexamine its existing offset protocols as well as consider establishing new ones, and ensure that all offset protocols include conservative benchmarks for assessing additionality. Such benchmarks must represent environmental performance that is well beyond median or average practice in the relevant sectors. Even performance that is one standard deviation better than the mean implies that 16 percent of projects within that sector would exceed that performance level in the absence of an offset program. This means that such a benchmark could simply select business-as-usual, better-than-average performance projects and that all of the awarded offset credits could be non-additional. CARB can mitigate this risk by setting benchmarks that reflect genuinely extraordinary performance (e.g. two standard deviations above the mean) and applying appropriate discount factors for uncertainty.

Attachment 2: March 2, 2018 Workshop Comments

5. Offsets

b. Other Offsets Topics

In AB 398 the legislature reduced the share of compliance obligations that can be satisfied with offsets as well as requiring that at least half of the offsets submitted for compliance provide direct environmental benefits in California. This is a clear indication that the legislature prioritizes direct emission reductions over offsets (as it stated explicitly in AB 197, enacted in 2016) and is concerned generally that offsets may not achieve climate and other benefits that are equivalent to directly reducing emissions from sources covered by the cap and trade program. In the preliminary discussion draft

staff has only addressed the definition of Direct Environmental Benefits. As stated in our previous comments, NextGen encourages CARB to respond to the legislature's concerns about offsets in a comprehensive manner by quickly establishing the Compliance Offsets Protocol Task force and ensuring that all offset protocols include conservative benchmarks for assessing additionality. (NEXTGEN)

Response: The current rulemaking is separate from the future creation of the Compliance Offsets Protocol Task Force required by AB 398. CARB staff is aware of the legislative direction to establish this Task Force to assess offset project types with applicability in California for the post-2020 period of the Program, and CARB staff will release a solicitation process for establishing the Task Force in a timely and public manner.

In response to the comment on all protocols including a conservative benchmark for assessing additionality, in a 2013 decision, the Superior Court of California found that CARB's "use of a standardized mechanism is supported by evidence contained in the administrative record" and that it is within CARB's "legislatively delegated lawmaking authority to choose standardized mechanisms." (*Citizens Climate Lobby and Our Children's Earth Foundation v. California Air Resources Board* (San Francisco Superior Court, No. CGC-12-519554).) In his decision, the judge wrote:

All parties agree that each and every reduction must be additional. They disagree on how to determine additionality. Determining additionality is difficult, and it is impossible to precisely delineate between additional and non-additional projects. (R24-4-7.) All additionality determinations suffer from this limitation, not just standards-based approaches. Petitioners ignore this reality and insist Respondent must use a perfect additionality mechanism or none at all. This argument is inconsistent with the science behind additionality and Petitioners own statements.

This decision was upheld on appeal. (*Our Children's Earth Foundation v. California Air Resources Board* (234 Cal. App. 4th 870 (2015))). All Compliance Offset Protocols approved by the Board since 2011 and all future Compliance Offset Protocols will continue to utilize a performance standard approach to establish a threshold that is significantly better than average, business-as-usual greenhouse gas emissions for a specified activity.

CARB staff is, as always, committed to ensuring the additionality of the offsets generated through Compliance Offset Protocols and to periodically reviewing Compliance Offset Protocols to ensure the continued additionality of offset credits generated.

CARB staff strongly disagrees with the comment by NEXTGEN that the passage of AB 398 indicated a general concern that offsets may not achieve climate and other benefits that are equivalent to directly reducing emissions from sources

covered by the cap and trade program. The program has specifically been designed such that all offsets meet the AB 32 requirements of being real, permanent, additional, quantifiable, verifiable, and enforceable. There is no doubt that ARB offset credits represent real GHG emissions reductions resulting in climate and other co-benefits.

H. DOMESTIC AND INTERNATIONAL LINKAGE

H-1. Linkage in General

Coordination with Linked Jurisdictions

H-1.1. Comment:

Price ceiling discussion should occur in coordination with linked jurisdictions.

Finally, we would like to reiterate our previous comments about the importance of coordinating with linked jurisdictions and potential linked jurisdictions on topics that may impact the larger Western Climate Initiative (WCI) market like the price ceiling. This is one of the reasons that it is important that CARB rather than the Legislature is able to set the price ceiling so that the agency maintains the ability to remain coordinated as much as possible with linked jurisdictions. We would appreciate it if CARB could respond regarding whether productive conversations on this topic have occurred with Quebec and any potential linkage partners. (EDF)

Response: As with any regulatory amendment process related to the Cap-and-Trade Program, and as noted in the ISOR (p. 18), CARB staff have discussed and coordinated with Québec staff on the adopted regulatory amendments, including the cost containment mechanism required by AB 398 and adopted by the Board.

H-2. Linkage Revocation

Managing Ontario's Withdrawal

H-2.1. Comment:

Western Climate Initiative

CARB and Quebec acted swiftly and effectively to manage the impact of Ontario's withdrawal and should continue with plans to retire excess allowances.

EDF is deeply disappointed in the political decision earlier this year in Ontario to end their cap- and-trade program and withdraw from the Western Climate Initiative (WCI). EDF commends the staff of CARB and the WCI partners in Quebec for taking swift and decisive action to maintain the stability of the linked market. This was the most important immediate step CARB and WCI could take, and now it is very appropriate that CARB turn its focus to maintaining the environmental integrity of the linked program. Retiring allowances in California accounts to ensure there is no negative impact on the

market from Ontario's departure is an important step to maintain stringency of the program and ensure California stays on track to meet its emission reduction targets. (EDF)

Response: CARB staff share the commenter's concerns.

The Board adopted amendments which enable the cancellation or issuance of additional allowances to ensure the environmental stringency of the California Cap-and-Trade Program is maintained as if there had not been a linkage approved with the External GHG ETS. When California links its Cap-and-Trade Program with programs operated by other jurisdictions, CARB ensures environmental integrity through determining that linkage meets the requirements of Section 95941. Under Section 95941, CARB may only approve a linkage after complying with the Administrative Procedure Act (Government Code sections 11340 et seq.) and after the Governor of California has made the findings of equal stringency required by SB 1018 (Gov. Code, §§ 12894(f) and (g).) Pursuant to the adopted amendments, California may delink if the government of a linked jurisdiction has taken an official act to revoke, repeal, or indefinitely suspend its ETS program or one of the linkage findings made pursuant to Government Code section 12894(f) is no longer supported. The process by which this determination would be made is contained in new section 95942(i) that was adopted by the Board.

Analyzing Ontario's Withdrawal

H-2.2. Comment:

2) **Develop a report on Ontario's withdrawal.** Most observers expected that Ontario would be a net consumer of compliance instruments through 2020. Instead, Ontario's brief participation increased market supply. We recommend CARB develop a report that:

- a) Analyzes the impact of Ontario's withdrawal on the net supply of allowances in the cap-and-trade program;
- b) Analyzes whether the impact of Ontario's withdrawal could have been anticipated and mitigated in advance; and
- c) Evaluates alternative strategies for managing cross-border allowance transfers in future de-linking events. (IEMAC)

Response: CARB staff has concluded that the adopted amendments clarify the process for the Executive Officer to take the same types of steps that enabled CARB to successfully delink from Ontario. CITSS functionality allows CARB to prevent or enable cross-jurisdictional transfers once the Executive Officer has determined that the conditions to delink have been met. The process for delinking is set forth in the amendment adopted by the Board in section 95942(i).

In addition, the commenter requests an analysis of the net supply of Ontario allowances. CARB staff notes that the exact number of allowances resulting from the linkage with Ontario that remain above the California and Québec allowance budgets was publicly released as part of the quarterly reporting on compliance instruments on July 9, 2018. This amount was 13,186,967.⁵⁴³ The process in newly adopted section 95942(i) specifies that CARB may “cancel or issue additional allowances to ensure the environmental stringency of the California Cap-and-Trade Program is maintained as if there had not been a linkage approved with the External GHG ETS.”

The requests for additional study contained in the comments are outside the scope of the adopted amendments.

Support for Linkage Revocation Clarification

H-2.3. Comment:

Staff have introduced several provisions to authorize the steps that CARB took in response to Ontario’s cancellation of its cap and trade program this summer. These include a provision giving the Executive Officer authority to suspend, revoke or repeal an approved linkage if a linked partner takes an official act to revoke its program, and the authority to modify auction dates and notifications.

WPTF supports staff effort to provide clarity around procedures for revoking linkage and appreciates the regulatory confirmation that all compliance instruments issued by Ontario that are held in accounts of California and Quebec entities remain valid for compliance. (WPTF)

Response: Thank you for the support.

Linkage Revocation Clarification

H-2.4. Comment:

CCEEB is concerned that allowances they purchased in good faith under a linked, verified program could be arbitrarily and abruptly confiscated or cancelled by ARB. We hope and believe that this is not the intent of the amendment to §95942. It is our understanding that ARB can and may choose to hold back allowances that would otherwise be auctioned by the state, but in no circumstances should allowances be confiscated from regulated parties due to the decision of an approved GHG ETS to revoke, repeal or rescind its program.

CCEEB suggests adding this language to §95942 of the regulations:

(i) If an approved External GHG ETS has taken an official act to revoke, repeal, or indefinitely suspend its ETS program or one of the linkage findings made

⁵⁴³ <https://www.arb.ca.gov/cc/capandtrade/complianceinstrumentreport.xlsx>

pursuant to Government Code section 12894(f) is no longer supported, the Executive Officer may suspend, revoke, or repeal the approved linkage. In taking such action, the Executive Officer may limit transfers in or out of holding accounts pursuant to sections 95921 or 96011, modify auction notices pursuant to section 95912, and modify holding limits pursuant to section 95920, and cancel or issue additional allowances to ensure the environmental stringency of the California Cap-and-Trade Program is maintained as if there had not been a linkage approved with the External GHG ETS. (CCEEB)

Response: CARB did not include revisions that would result in the confiscation or cancellation of entity-held allowances, and as such, CARB disagrees with the change recommended by the commenter. The Board has adopted amendments to specify the process for the cancellation or issuance of additional allowances to ensure the environmental stringency of the California Cap-and-Trade Program is maintained as if there had not been a linkage approved with the External GHG ETS. In the event this provision is utilized, CARB would cancel or issue additional allowances from the State's allowance budgets, not from individual entity accounts.

The adopted amendments do not authorize the Executive Officer to cancel or confiscate allowances held in individual entity accounts vis-à-vis a delinkage event, only to prevent further transfers. As indicated in the Staff Report, CARB acknowledges that entities do not have visibility into the jurisdictional origin of the compliance instruments they acquire. For example, in the case of Ontario, the adopted amendments clarified that Ontario-issued compliance instruments currently held in California entity accounts continue to remain valid for compliance and trading, but no new transfers of Ontario instruments after June 15, 2018 would be accepted.

CARB does not intend to penalize registered entities for holding allowances issued by other jurisdictions. Since CITSS does not display the jurisdiction of origin for compliance instruments, California registered entities cannot exercise due diligence in evaluating the provenance of the instruments they acquire. Only the Executive Officer, through CITSS, is in a position to identify compliance instruments and prevent damage to the environmental stringency of the Program and financial losses to California market participants. Newly adopted section 95942(i) clarifies the process for such action.

Environmental Integrity Clarification

H-2.5. Comment:

With respect to the new provision that authorizes the Executive to issue or cancel allowances to maintain environmental integrity, WPTF requests that staff explain how a determination would be made as to the need to maintain environmental integrity. We also recommend that CARB include additional language in the regulation stating that

any cancellation of allowances necessary to maintain environmental integrity not be made from entity holding or compliance accounts. (WPTF)

Comment:

In response to the recent actions taken by the Ontario government, under the proposed changes to the regulation, ARB grants the Executive Director the authority to suspend, revoke or repeal an approved linkage if a linked partner revokes its program. Shell Energy supports ARB's efforts to ensure there is a process when a member of the program withdraws its participation. It is unclear, however, how ARB would define maintaining "environmental integrity," a provision that allows the Executive Director to cancel allowances. More clarity is needed on what constitutes "environmental integrity." Language must be adopted stating that any cancellation of allowances will not be made from entity holding or compliance accounts as this would constitute a legal "taking." (SHELL)

Response: When California links its Cap-and-Trade Program with programs operated by other jurisdictions, CARB ensures environmental integrity through determining that linkage meets the requirements of Section 95941. Under Section 95941, CARB may only approve a linkage after complying with the Administrative Procedure Act (Government Code sections 11340 et seq.) and after the Governor of California has made the findings of equal stringency required by SB 1018 (Gov. Code, §§ 12894(f) and (g).) Newly adopted section 95942(i) clarifies the process by which California may delink if the government of a linked jurisdiction has taken an official act to revoke, repeal, or indefinitely suspend its ETS program or one of the linkage findings made pursuant to Government Code section 12894(f) is no longer supported. CARB will assess environmental integrity by reference to its GHG reduction goals and, as such, the proposed amendments define "Environmental Stringency" as "the ability of the California Cap-and-Trade Program to deliver the GHG emission reductions contemplated by this article, including the allowance budgets established in this article." See also Response to 45-Day Comment H-2.4.

Finally, while the amendments to the Regulation would not result in the cancellation of allowances in individual entity accounts, nor does CARB intend to cancel allowances in individual entity accounts, CARB disagrees with the commenter's assertion that cancelling allowances in entity holding or compliance accounts would constitute a legal "taking." The Cap-and-Trade Regulation explicitly states that compliance instruments do not constitute property or a property right (see section 95820(c)). Additionally, the California Court of Appeal has stated that allowances are not property for takings purposes. *California Chamber of Commerce v. State Air Res. Bd.*, 10 Cal. App. 5th 604 (2017).

I. SUPPORT FOR THE PROPOSED AMENDMENTS

I-1. General

Support for Proposed Amendments

I-1.1. Comment:

On behalf of major U.S. businesses representing over \$587 billion in annual revenue, I write to express our support to amend the Cap-and-Trade Regulation to make the Program consistent with AB 398 requirements. A strong Cap-and-Trade program, in conjunction with California's other key climate programs, such as the Low Carbon Fuel Standard, is critical to meeting the state's 2030 greenhouse gas (GHG) reduction goals...

California's Cap-and-Trade program has a track record of successful compliance and has proven an excellent backstop for the state's GHG mitigation program ensuring California will meet its current climate goals. The Cap-and-Trade program and complementary air quality measures are crucial to the state's powerful toolbox to reduce emissions, maintain market certainty, increase economic vitality and ensure all Californians have access to healthy air.

The proposed amendments provide a reasoned approach to ensure consistency with AB 398. In particular, the proposed price ceiling and combination of cost containment measures strike a good balance to drive emission reductions while providing a "safety valve" if something unforeseen with the market occurs.

California's Cap-and-Trade Program is working. The Program has become an integral part of the economy, stirring innovation and building new industries. Further, California's demonstrated success in addressing climate pollution in the world's 5th largest economy is critical for inspiring similar action around the globe. We urge the Board to adopt the proposed amendments to ensure the Program continues to drive down emissions in a cost-effective manner. (BICEP)

Comment:

I'm here to express our support to amend the cap-and-trade regulation to make the program consistent with AB 3398 requirements. BICEP members recognize the economic opportunities associated with tackling climate change and the costs of inaction, and are committed to working with policymakers to pass meaningful energy and climate legislation and regulation that will help the nation rapidly transition to a low carbon 21st century economy. A strong Cap-and-Trade Program in conjunction with California's other key climate programs, such as the Low Carbon Fuel Standard, is critical to meeting state's 2030 GHG reduction goals. California's Cap-and-Trade Program has a track record of successful compliance and has proven an excellent backstop for the state's GHG mitigation program, ensuring California will meet its current climate goals. The Cap-and-Trade Program and complementary air quality measures are crucial to the state's powerful toolbox to reduce emissions, maintain market certainty, and increase economic vitality while ensuring all Californians have

access to clean and healthy air. The proposed amendments provide a reasoned approach to ensure consistency with AB 398...

In summary, California's Cap-and-Trade Program is working. The program has become an integral part of the economy stirring innovation and building new industries. Furthermore, California's demonstrated success in addressing climate pollution in the world's 5th largest economy is critical for inspiring similar action around the globe. We urge the Board to adopt the proposed amendments to ensure the program continues to drive down emissions in a cost effective manner. (BICEP2)

Comment:

While the proposed amendments do not follow EDF's exact recommendations, we recognize the role CARB is playing in balancing multiple policy interests. EDF supports the overall adoption of these proposed amendments in order to move the cap-and-trade program forward into the next decade. (EDF)

Comment:

With its Proposed Amendments, ARB has taken another significant step towards reducing carbon emissions while also promoting economic efficiency and environmental co-benefits. (POLICYINTEGRITY)

Comment:

I am here before you today to speak in support of the Cap-and-Trade Program overall. Long Beach has been supportive of this program since AB 32 was introduced back in 2006. (LONGBEACH)

Comment:

We've worked closely with staff and very much appreciate the allowances the staff have provided for legacy contract generators without industrial counterparties.

We fully support the draft amendments before you today, as well as supporting AB 32 and the Cap-and-Trade program generally. (CROCKETTCOGEN2)

Comment:

I am here on behalf of E2's 600 California members to show business support for staff's proposed amendments to California's Cap-and-Trade Program.

Staff's proposal would advance a program that ensures environmental integrity and strong ambition while providing important provisions to contain program costs. E2 is a strong proponent of California's Climate and Clean Energy Program. And last year, we advocated in support of the AB 398, which extended California's Cap-and-Trade Program beyond 2020.

Our support for AB 398 was predicated on the Cap-and-Trade Program's strong track record of success reducing emissions and advancing California's clean energy economy.

It is truly good for the environment and the economy.

Since the program's implementation, \$2.2 billion in cap-and-trade funds have been invested in nearly 30,000 projects across the state directly supporting almost 20,000 jobs.

And 68 percent of these funds benefit California's disadvantaged communities.

In every corner of the State, California's climate program and its bedrock policy, Cap-and-Trade, is working.

The State is exceeding its greenhouse gas targets, program compliance is strong, and the state's economy is booming. Furthermore, cap and trade is the embodiment of California's global climate leadership.

And many states across the country depend on that vision that California sets.

In fact, E2 is advocating for passage of a cap-and-trade bill in Oregon, which is modeled off of California's program. The package proposed by staff will further the Cap-and-Trade Program's success.

The amendments provide an appropriate balance of ambition and price containment, and will ensure the program maintains the flexible market-based approach, while safeguarding the market's sacred role necessary to reduce emissions in step with our 2030 goals.

Therefore, E2 requests the Board vote yes on staff's proposal.
(ENVENTREPRENEURS)

Comment:

We'd like to let the Board know that we support the cap-and-trade amendments as presented by staff today, and we believe it's consistent with AB 32, as it was discussed and negotiated in the legislature. CSCME believes it strikes a balance, and will achieve the State's post-2020 greenhouse gas reduction goal.

We believe it will be done in a cost effective manner, while minimizing emissions leakage, which we all recognize any leakage would undermine the program, damage the economy, and hurt employees. CARB staff has repeatedly recognized the high risk of leakage that our industry faces, year-in and year-out.

These amendments will minimize the risk of leakage to our industry in the near term. As such, CSCME encourages you to adopt these amendments as soon as possible.
(CSCME2)

Comment:

While this set of proposed amendments is not exactly what EDF had been recommending, we do recognize that CARB is balancing multiple policy interests, so we are generally supportive of these amendments. (EDF2)

Comment:

NextGen is broadly supportive of the proposed regulation. We thank the Board and staff for the extensive opportunities they've provided for public participation, the thorough and transparent processes that has informed this proposal. (NEXTGEN2)

Comment:

I just want to reiterate we really appreciate staff's great work in taking the many goals in AB 398 and rolling them into regulation. We supported many of staff's recommendations in our written comments. (PHILLIPS662)

Response: Thank you for the support.

Support for Cap-and-Trade Approach

I-1.2. Comment:

AWEA California strongly supports the ARB's efforts to fight climate change, and as a general matter, supports the State's Cap-and-Trade program. (AWEA)

Comment:

The Joint Utility Group continues our strong support for a well-designed Cap-and-Trade system and view it as an essential and flexible component of the state's greenhouse gas (GHG) reduction efforts. Cap-and-Trade establishes a firm GHG emissions reduction target and provides flexibility to foster innovative GHG emission reductions that minimize costs to California consumers and businesses. (JOINTELECUTILS)

Comment:

CMTA continues to support a well-designed cap-and-trade program as the most cost-effective method for achieving carbon emissions reductions while limiting the impact to California's economy. Enabling companies to choose the most economical method for reducing emissions and maintaining a stable market will help limit the negative effects of imposing regulatory compliance costs on California manufacturers and other obligated parties while no other competitive jurisdictions impose similar costs on their manufacturers. (CMTA2)

Comment:

The California carbon dioxide emissions cap-and-trade program is the best designed emissions trading program in the world and has contributed to the state achieving its 2020 goals four years ahead of schedule. (IEMAC)

Comment:

PG&E continues to support Cap-and-Trade as a program that will help the state meet its aggressive environmental goals while maintaining a healthy economy. (PG&E)

Comment:

First of all, I'd just like to say, you know, we appreciate the staff's effort in the development of this package. And we are in general support of this package. We see it as a good thing. It is -- we feel it's met the requirements under 398 in order to focus on cost containment, and we believe that it's leading in the right direction. (CLFP2)

Comment:

I wanted to first staff off by saying that we are strongly supportive of the Cap-and-Trade Program and appreciate legislative efforts to extend it through 2030. Also, want to thank staff for helpful clarifying edits that were reflected in the 45-Day package, and had some recommendations to further improve in the 15-Day package. (SCPPA2)

Comment:

We support the Cap-and-Trade Program and believe that your staff has worked very well with stakeholders to implement and propose these amendments. There's a lot to like in the 45-Day language, but we look forward to working to improve with the 15-Day language and subsequent implementation. (SMUD2)

Response: Thank you for the support.

Support for AB 32 and SB 32 Goals

I-1.3. Comment:

In submitting these comments, LADWP reaffirms its strong support of the Assembly Bill 32 (AB 32) and Senate Bill 32 (SB 32) goals of expeditiously achieving substantial greenhouse gas (GHG) emission reductions in a cost-effective manner that protects ratepayers and minimizes impacts to low-income communities. (LADWP)

Comment:

The ISO supports California's efforts to track and reduce greenhouse gas emissions in California's electricity sector and will continue to work collaboratively with state agencies and stakeholders to advance this objective. (CAISO)

Response: Thank you for the support.

J. OPPOSITION TO THE PROPOSED AMENDMENTS

J-1. General

Opposition to Cap-and-Trade Approach

J-1.1. Comment:

I live in Cupertino California the Cap-and-trade system is not a benefit to the public especially in my case with the Lehigh Southwest Cement and Quarry and the Stevens Creek quarry at my door who continue to pollute...

I would like to mention my take on all this the way I see it if a company sells their credits because they wish to make money or where given to many, to begin with by the state representatives who decide by some crude method that the amount of credits fits that company need it is too late to save the public from harm. The company such as the Lehigh Southwest Cement and Quarry buy credits at state-sanctioned auctions and on secondary markets are allowed to emit more pollution and the public suffers serious harm and even death. Trading one companies credits for whatever reason is wrong it does not benefit the public who now must endure more pollution from the company that buys the credits Lehigh, for example, can buy more credits they are over their limit. Why set limits on pollution if there is a way to just buy more credits from the state the system is flawed in so many ways and I have never understood how this system was even allowed...

The Bay Area Air Quality Management District over the Silicon Valley under the Air Resource Board needs to address this Cap-in-trade situation along with the state working together to shut down the Lehigh Southwest Cement and Quarry and the Steven Creek Quarry that have been polluting the public the Air, Water and Soil are highly polluted and the permit given out to these polluters only allows them to pollute. The levels of pollution are set high by the state and the EPA and so it really looks as if they are setting them high in order to allow the polluter to pollute and keep operating. It also seems that the polluter is always under these set levels and is allowed to pollute. The cumulative effect of the pollution to the public is not even taken into consideration there is no testing of the amount of pollution the public has endured and my question is why have the agencies and especially the State and Federal Health agencies not conducted tests on humans to see what is causing all of the health problems such as cancer and death. The EPA moves very slowly to set limits for each pollutant and because of that we the public continue to suffer.

I truly believe that the Cap-and-trade system should be abolished never to be heard from again... (HELGERSON)

Response: This comment makes no specific request pertaining to the proposed amendments and is therefore outside the scope of the proposed amendments. The Cap-and-Trade Program is one of a suite of state policies to reduce greenhouse gas emissions. It does not increase the allowed amounts of other pollutants at stationary facilities such as cement plants as it does not obviate or

alter existing air quality permits. Potential effects of the Cap-and-Trade Program on local emissions are discussed in the Environmental Analysis for the current amendments, included as Appendix B to the Initial Statement of Reasons and in Response to 45-Day Comments K-1.3.

Opposition to Amendments Increasing Prices

J-1.2. Comment:

We have a concern about today's proposal and the effects that it's going to have on fuel prices, and energy costs. Many of the people in my trade have a lengthy commute to work. Although California is kind of in a construction boom right now, many of those jobs are in cities that our members can't afford to live in, so they commute more than 100 miles a day just to get to work. The working men in this -- men and women of this state have already shouldered the higher -- highest energy costs in the country and a housing market has priced them out. We can't afford to take on a larger financial burden. If costs continues to rise, we'll have less money in our pocket to spend on goods and services that support our local economies and our families. We urge that you take some cost containment into consideration on this, and take a good hard look at what it's going to do to the working people of California. (NCCRC)

Comment:

We're concerned that any increase in -- for example, some of the farm workers travel 60 miles, 70 miles to go work from Orange Cove to Mendota to go pick melons, okay? That is outrageous and it's real costly, when you're dealing with farm workers that are in poverty. But you know what, they're proud farm workers, and they go out and work every day when there is work. They work on a seasonal basis, the lowest wages that you can ever imagine. But you know what, we're still proud and we keep working. We are the food basket of the world, and people don't recognize that. If you increase the food who's going to pay for it? The people. The people will pay for it. So this is why I'm here asking the Board to please -- and I'm glad to hear the Chairman say that there's misinformation. I'm glad to hear that. And I'm hoping that it is -- that is the cause, because we are concerned that the well-being of the citizens of our community are really concerned. And we are concerned that -- a lot of people don't know, but we're having to pass taxes for law enforcement in the small rural cities, because we're losing our police departments. There's a lot of poverty in the cities in Fresno County. But you know what, we still want protection, so we tax ourselves, you know, for police protection. So again, Madam Chairman, on behalf of the citizens we serve, especially the farm workers and all of our communities, we thank you. (ORANGECOVE)

Comment:

Please consider our opposition for the proposed price ceiling. Even though we realize that this is a worst case scenario, we always know that in California, worst case scenarios seem to happen more often than they should. And so we -- we would take

that as a part of the Board's proposal today to oppose the ceiling. Our business community in the Coachella Valley, like other communities throughout Coachella -- throughout California depend on affordable energy in order to sustain jobs. As we all know, the cost of doing business in California continues to escalate, which makes it harder for our businesses to grow and pay good wages. It is important to promote an environment that supports small businesses owners and entrepreneurs instead of continuing to burden them. We already know that California consumers pay 49 percent more than the national average for their utility bills. Our members cannot afford higher fuel and energy costs. We feel the lawmakers' intention is that your Board needs to avoid adverse impacts to our residents, households, businesses, and not create excessive costs that will hurt the state's economy. I ask your Board respectfully to reject the proposed high ceiling, which would result in devastating effects on our small business community that rely on economic activity. (COACHELLA)

Comment:

Our organization was also in support of the cap-and-trade extension. I'm here this afternoon to speak in opposition and of concern with the proposed price ceiling before you for consideration here today. Our 1,200 members and the 77,000 jobs that they provide in California's Central Valley represent a beautiful mosaic of mom-and-pop shops, small family-owned businesses, immigrant-owned businesses, and women-owned businesses. Over two-thirds of our members have less than 10 employees with many of those being people who have just started their business and are grasping at the American dream. I say all that to emphasize that the proposal here today will make their dreams of growing their business or surviving that much more unlikely. In our home region, businesses owners pay more in energy costs and in transportation costs than near any other region in California. We have hotter and colder weather. We drive longer distances for daily necessities. And we drive more than anyone else. Higher prices will devastate our business community and our families. This possible increase in fuel costs will force thousands of more families to make the choice that too many already have to make between fueling up to go to work or putting food in the fridge for them and their kids. This will force a business owner trying to make payroll, while balancing rising costs in products question whether or not it makes sense to go forward. We already pay, as one of my colleagues said, 49 percent more in utility costs than the national average. And because of this, consumers are hurt all the way down the line. Let's not make it harder for business to stay in business. Let's not hurt employees and families. Let's consider our friends and neighbors in California's Central Valley who can't afford this. I please ask that you reject this proposal and take our statement into consideration. (FRESNOCHAMBER)

Comment:

I am here because the pricing proposal before you today will hurt my community. CARB's proposal is not what the legislature envisioned when they came together from both sides of the aisle to pass AB 398. The language in the bill directed CARB to

establish a ceiling on the price of allowances to avoid adverse impacts on residents, households, businesses, and the state's economy. This proposal will definitely cause adverse impacts on my community. Our residents cannot forward such an increase in energy and fuel costs. I ask that you take our residents into account when you cast your vote today and urge you to follow the directive set forth by the legislature. Thank you for your time and consideration. (FOWLER)

Comment:

I'm here today to voice our strong opposition to the proposed price ceiling in CARB's proposal. The Latino Seaside Merchants Association represent Latino businesses in the tri-county area, San Benito, Monterey, and Santa Cruz County. Our business community depends on affordable energy in order to sustain jobs that pay good wages, offer products and services at reasonable prices, and promotes an environment that supports small business owners and their employees. We are concerned about the harm to our members if the cost of electricity, gas, and diesel dramatically escalate. These excessive costs will hurt our suppliers and consumers. With the increase of costs, our suppliers will be forced to increase their costs, which in turn affects the employees. Our businesses and consumers cannot afford higher fuel and energy costs. We have situations where we have -- as some of the other groups have mentioned, we have our employees and our businesses that are commuting. They're going three to four hours to another location, and sometimes they're piled up in a car or in a van, and they're -- you know, they're basically pooling their resources to be able to get to their jobs. If you increase that more, and they haven't received any type of wage increase, what happens is then they really are impacted and it's a detriment to their family. Additionally, growing costs under this proposal makes it more difficult for businesses to maintain good wages for their employees. Unaffordable operational expenses that can't be avoided will likely result in pay raises -- pay raises getting deferred, new hires getting put off, or even workers losing their jobs. I ask the Board respectfully to reject the proposed price ceiling, which would only make it harder for these employers to sustain good-paying jobs and not have our economy threatened. I also ask that we consider what's happening around us today. We are having a disastrous fire in California in two locations. And all those vehicles that are commuting, the fire trucks, the supplies, the sheriffs, the paramedics and all that, they're making round trips. They're going across. They're help -- they're coming in from other areas. You can only imagine how much more the cost will be if they're -- the fuel costs are increased. I also want to ensure that you're aware that the central coast at the seaside merchants -- Latino merchants represent is predominantly the agriculture and hospitality industry. And the agriculture out of the Salinas Valley, which is known as the salad bowl of the world, is the second largest in the United States. And they're dependent on transportation, and they're dependent on the fuel, and all their equipment and machinery. And, you know, when you look at it, it's not just the employee. It just keeps on going up till it gets to the consumer. (LSMA)

Comment:

And I, too, am concerned about the rise in the cost of gas and electricity for my community in South Central Los Angeles as we cannot afford the cost increase. And I ask the Committee to be mindful and considerate of my neighbors, as we would have to decide which bill to pay, gas or electric, if you make the decision to increase the cost of gas and electricity. I ask the Board to be considerate as the working class for we just can't afford it. I'm a part of that group. If the cost jumps the way that we've been told, just couldn't afford it. We have to pay for gas. That price goes up. Electricity goes up. The cost to ride the train goes up. Take the train and the bus in order to get to work and then to get back home. That's an increase, and we would like -- I would like for you to be considerate of us the citizens. (NANLA)

Comment:

Today, I believe a lot of people in this room are protecting the worst case scenario. For us, gas prices for middle class people, people of lower than middle class, it affects us directly and indirectly, whether we want to admit or we don't want to admit it. In the famous words of Muhammad Ali, "Don't count the days. Make the days count". I would say today, for us, don't count the dollars, but make our dollars count that we've already spent. For us, in Los Angeles, I also work with the Black Lives Matter. But today, for me, I would say our communities matter, our gas prices matter, our economics matter. And raising our gas prices would just gash us. I would ask that this Board recycle the money that we already have into the community programs that we have, especially for Los Angeles, Compton, Inglewood, Long Beach, anywhere inside the L.A. county area and the -- and outside of there. It affects our communities, our youth programs. It affects everyone. I was speaking with a gentleman today that we came down here with, and -- I just found out. I didn't even know this. We don't even have -- at some L.A. Unified School Districts, we don't even have a nurse that comes to our schools every day. Some of them have to wait to get sick basically. That's Basically what you're saying. Like, you can't get sick on Monday. You've got wait till Tuesday or Wednesday. That affects us directly. I would -- I would thank you guys for your time, and I would just ask that the monies that we have that we would allocate it directly to our communities and the programs that we have for our youth today. (BMCLA-NAN-NAACP)

Comment:

We are deeply concerned that if there's any increase, because it has a profound an impact on those within my community. Also, many of the people in my community are paying 50, 60 percent of their salaries just for housing. So any increase anywhere will have a profound impact on their lives or whether they eat, or even whether they have a place to live if there is an increase. So I want us to please look at the cost and hopefully like -- like the gentleman before me had talked about the worst case scenario, it can happen. So if it does happen, I want us to be proactive -- the Board to be proactive in putting in mechanisms in place to safeguard the community and to safeguard the most

vulnerable. And I believe that each and every one of us are aware that California leads the country in the poverty rate, where there is one out five Californians living in poverty. And so as we make considerations, I think that we need to look at the people more than the corporations. We know that the large corporations have had a windfall due to the recent tax break. And so we need to give some break to the people who actually make things happen. Also, CARB has acknowledged that the majority of the stakeholders input has indicated the importance of a reasonably low-price ceiling and appropriate placement of speed bumps to put market safeguards in place. Nonetheless, the agency has included in its SRIA a lower range and upper range scenario of price ceiling and speed bumps that are higher than a majority of the stakeholders recommended. The stakeholders have spoken. I plead -- I stand here asking that you would hear us. Also, Supervisor Gioia, I want to thank you for bringing up the point, because I have noticed that about if there's just an interruption, oil prices or gas prices go up 50 percent. I don't know what authority you have, but I would encourage you to make sure you look into that. And next time it happens, that something -- that there is an investigation, because many people are hurting unnecessarily. (HOLMANUMC)

Comment:

We understand more that we have to do more to reduce exposure of pollutants and improve the quality of life in California communities facing environmental and economic change, because -- and due to facing environmental economic -- the change through the CARB -- through CARB. And it's very important for us to truly understand the decisions that you guys make. As -- but as we further analyzed this situation, we have concluded that despite your higher purpose of prioritizing environmental justice, using the amendment to do so really is not the way to motivate. In fact, it's the way to shun the possibilities of communities positively viewing your higher objective, and engage, and collaborate with CARB. This is why we respectfully ask you to consider our strong opposition to the proposed price ceiling this Board is doing. (LBA)

Comment:

We've heard that a lot today as it relates to the worst case scenario. And if we get to the worst case scenario, are we prepared for the worst case scenario to -- we have a safety net and place to safeguard us. I would like to say that the Board's proposal that's going to take place could worsen -- could worse the cost of all Californians, especially on the -- of the seven million California families already struggling just to get by on a day-to-day basis. ZEV subsidies aren't going to communities of color, minorities. They're areas with the highest concentration of solar panels or wealthy suburban. Many low income Californians can't afford to live near their places of work simply because the cost of housing is simply too high and we cannot afford it. Increasing transportation costs will affect them the most, simply because they can't afford to live near their work place. In my community alone -- my community alone that I see every day, there are people who are simply struggling on a day-to-day basis . We're feeding. We're housing. We're doing the best that we can. But if things are constantly increased, it

takes a great impact and affect on the surrounding communities at large. I would say to you today, and I urge you t take steps that will contain costs and meet our environmental goals, not simply to raise the price, because if we hit it and the refinery said the pump is going to hit it, the station owners are going to hit it, and we're going to hit it, and we're going to feel it hard into our pockets. (BMCLA)

Comment:

I normally would not get involved with such issues of politics. However, I also pastor a group of people who will be well deeply affected if gas prices rises higher than they already are. I've heard several times about worst case scenario. As far as I'm concerned, we already are in worst case scenarios. I don't know if this is allowed, but the Bible says when the galley are an authority, the people rejoice. But when the wicked are in power, they groan. And I want to just share that the church in which I pastor, Solid Rock Mission Church in the City of Compton, Compton is a very poverty type community. Things are already bad in that community, really bad in that community. Even on Wednesday nights, out of my own pocket, I make sure the community -- streets surrounding my community is fed, because things are that be d. That diabolical around that city. And I would just say please consider that these gas prices, if they go up, everything goes up, crime goes up, and everything else goes up. Thank you so much for this time. (BMCLA2)

Comment:

I think we're all aware of the fact that we have to aggressively address the climate change. And listen, I'm the one that realizes that in order to do that, there are certain prices that we must pay. I want to also say that I commend you and your work. But those costs ought not be paid disproportionately by communities of color, and low-income Californians who can't even afford some creature comforts. The church where I minister I watch broken people. And these people are broken, because sometimes they have to choose between -- between a meal and a ride to work. The reality is they don't work in the area that they live. And because of that, they have to -- you know, they have to travel that distance. And it has become so bad in our community that they're losing their jobs. And they're losing their jobs, because they can't get to work. All I would encourage you to do is to recognize that reality appropriately. Even as you now, you know, decide on this very issue. (GSBC)

Comment:

I'm concerned about how golden it is as it relates to is it because of the economic welfare and policies or is it because of the golden cloud that hovers over our communities, because of the increasing amount of pollution. Pollution that greatly affects our communities, disappropriated number of our youth, asthmatic, can't breathe. And is already stated, if a parent has to make a choice, because there's not a nurse in a LAUSD school, you have to ask the question, if the child gets sick on the day that there's no nurse, that parent has to leave their job that they're already struggling. Many

parents are working multiple jobs because of the downsizing of the work days. Some parents now multiple jobs because they've been taken from a 40-hour week because employers don't want to pay for health care. Some working 28 hours and have to go back and do another job. They have to use public transportation in order to get to work, go through school. I'm Part of the National Action Network Los Angeles Chapter. And I sit and watch them walk to school with their children, get on a bus to go to work, to leave work early, to come back and get their child or their children to take them home. Hopefully, there's something to eat, because they've been enough hours they've accumulated in order to feed them. Murphy's law says whatever can go wrong will go wrong. And I understand what was said and what was stated as it relates to potential possibilities. But if it can go wrong, it will go wrong. And I'm thankful again for looking at what our supervisor here said, whenever there's a problem in El Segundo about the gas, refineries shutting down, it hits us first. Our communities become a premier target for price increase. Everything is going up, and even though they're moving toward \$15 an hour, that's really not a substantial amount of money, if you're only working 20 hours a week. Thank you so very much for this time. (MOSELY)

Comment:

I ask you today to consider rejecting the price ceiling that is recommended in the staff proposal, and adopt the one that is more in line with the bipartisan agreement in AB 398. I know our residents, businesses, and our local economy will feel the negative effects of increased energy cost, whether it's directly to refuel energy purchases or indirectly in the cost of goods and services. Our local economy is driven a lot by tourism. I know a lot of other cities around the state it's the same way. Significant increase in the price of fuel will have negative consequences on our local businesses and workers who rely on a healthy tourism presence. Unlike other cities in the State coastal areas, our local economy is still recovering from the Great Recession. We do not want to take a step backwards. AB 398 represented a significant victor for the environment and for all Californians and it received bipartisan support, as it should have. The expectation was that the regulatory process should avoid adverse impacts. I believe this current price ceiling proposal falls short of that expectation. In Orange Cove, there's not a lot of plug-in stations to do that or solar panels on roofs. These proposals will have real-life consequences for people of color, people in low-income communities. I don't believe that it's alarmist for them to be here, and to talk about those real-life consequences. And so I ask you to consider adopt a price ceiling that is in line with both the language and spirit of AB 398. Thank you. (PLACERVILLE)

Comment:

We own and manage affordable housing. We're also developers. We also run a energy program and we have been a recipient of LIWP funds. And we're able to do some really major upgrades to homes in West Sacramento and Pinole -- excuse me, Pittsburg, where we did -- using cap-and-trade funds. So just want to shout-out for that and acknowledge that. We were be able to put solar -- solar panels on homes. We were

able to do major upgrades to homes, that we couldn't normally do through our other energy programs. So good on that. Really positive. Totally support that. So -- but I do need to acknowledge that we're very -- because we track the housing industry, we're very aware and sensitive about cost to housing. We are still -- we are in a high housing crisis. There is a huge lack of affordable housing rentals and ownership. So for example in my county, Solano, even though CHOC has -- is in around five or six different counties. But in Solano specifically, you know, a large amount of money is coming into that county, as well as the Bay Area, as well as the State and through REITS to buy and purchase multi-family complexes, to do minor upgrades, a lot of the time using public purpose funds, and then doubling and tripling the rents. So we continue to have a housing crisis and will continue to do so, unless there's some dramatic -- beyond your role, dramatic changes in policy. But just want to point out your policy has a very detrimental effect on the cost of housing. I can go into more detail, but I'm not going to use my last minute. Just to say, unfortunately, talks have broken down between -- we belong the 200, between your staff, that we were not able to come to a compromise or reasonable accommodation. So we filed a lawsuit. And because of discrimination -- we believe discriminatory practices that these regulations have on low income, especially peoples of color. So I want to invite everyone who has not been heard or doesn't believe they're going to be heard join us in our lawsuit. This superior court just acknowledged that our suit has merit and is advancing our suit through the court system. So we would love to work with you to come to a reasonable accommodation. Again, if people here in the room feel that we're not going to be heard, or this report is not going to address some of our real-life concerns, the court is an alternative. So thank you for the opportunity to speak. (CHOC)

Comment:

I am here to voice our strong opposition the proposed price ceiling that is being considered by the Board today. The legislature provided a clear outline for what they wanted the Cap-and-Trade Program to be. At the heart of the design, there are cost containment features, such as a price ceiling that places a limit on the price allowance -- of allowances, as well as two speed bumps which triggered the sale of additional allowances in order to reduce market volatility. The proposed price ceiling misses that mark. The legislature fully intended the price ceiling and speed bumps to serve as safeguards that provide cost containment. If these are set too high, these will be ineffective in reducing market volatility. As a business organization, we aren't opposed to cleaner air or a healthier environment. However, we do become anxious when policies are introduced that aim to improve air quality but risk increasing the cost to do business here in California. California is already one of the most expensive states to run a business. Business here pay more on their utilities than the national average. And the gap between California and the rest of the nation is only getting worse. Under this proposal, increased costs will make it more difficult to do business in California. Rising operational costs will likely result in delayed pay raises, reduce hiring, and even people losing their jobs. The new pricing structure needs to protect consumers,

businesses, and the economy against any adverse impacts. I respectfully implore you to establish a lower price ceiling. As currently configured, this ceiling will only put our economy at unnecessary risk. (VICA)

Comment:

But first, I would like to thank the Board for the opportunity that you have provided for me, the incentive programs you have as far as purchasing a tractor incentive program. Without that program, I would not have been able to purchase a new tractor. And I would also like to have this opportunity extended to the other small farmers -- continued to the other small farmers. They need the opportunity also to upgrade their tractors, so they can participate in this clean air business. I feel that if the cost to purchase credits sky rockets, it will mean less credit to purchase and less funding for farmers to upgrade their equipment. I don't use pesticides on my crops, and I farm sustainable. When I go to farmers market, I'll also teach them how to eat the, you know, health food. So that's one of the benefits of being a small farmer. I -- also, I want a clean environment to live in, not only into the underserved areas, but also throughout the state. What I'm asking you to please consider is the consequences of setting the cost of carbon credits too high on small farmers like myself who want to do the right thing. But absent the investment of incentives to upgrade equipment, many small farmers will be -- will have to shut down, and they would have to sell their property to big ag business. And as you know, small farmers is an asset, not only to this community, but also to this civilization. If you look at the United States, the United States was started by small farmers. You know, we -- they advance on us. And I think that, you know, in order for us to get young people into it, I think that avenue should still be there. We should sustain it. Because when I ask the Board too to think about the collateral damage that will be done to the least of us, you know, if consideration isn't sent forward. That's probably all I have to do, but I thank the Board for what you're doing. But I think that not only do we have to breathe, but we have to eat in order to live in this civilization. So I think you for this opportunity to stand before you. I thank you for your time also. And I ask you in advance to take some consideration about the collateral damage that you may do to the least of us. (AAFC)

Comment:

And I'm here comment on CARB's scoping plan. Our focus is to close the ratio wealth gap through homeownership. Following the Great Recession and recent housing crisis, the racial wealth gap is at its largest since the Great Depression. Several years ago, we started The Two Hundred Project. Our plan was to organize 100 community leaders across the state with a series of mini-conferences aimed at developing and understanding of the obstacles to homeownership. Today, The Two Hundred represents a coalition of over 800 community leaders, which now includes YIMBYs, millennials, and students. And our plan now is to organize -- to include student -- senior citizens. The Two Hundred Project is led by a leadership council composed of esteemed community leaders that have a long history of defending the civil rights of

marginalized communities. Founding members were the Honorable Cruz Reynoso, the first Latino State Supreme Court Justice; Joe Coto a former State Assemblyman, and former Chair of the Latino Caucus; John Gamboa who has been a champion of civil rights for many years; and Herman Gallegos who was a founding founder of the National Council of La Raza with over 50 years of activism. The Council includes leaders from throughout the State, and is committed -- who are committed to social equity. As you know, and have heard, The Two Hundred sued CARB because we believe the scoping plan will disproportionately negatively impact communities of color. What you may not know is that The Two Hundred is deeply concerned about the future. It is not naive about GHG and the effect on global warming. Like GHG scientists, The Two Hundred relies on facts. California is now a majority minority State. And the future economy will rely on people of color. They are our seed corn. They will pay the taxes and fund entitlements for retiring Baby Boomers. Latinos are the majority of California's K through 12 students. Ninety-five percent of California Latino youth under 18 are native born. Latino youth under 20 make up more than half of the California's population under the age of 20. The Two Hundred understands that public policy cannot be made in a vacuum. Past public policies like redlining denied people of color the opportunity to buy a home and accumulate wealth. This is at the core of today's racial wealth gap. Between 1934 and 1962 the federal government issued \$120 billion in FHA and VA loans, of which 98 percent went to white families, and only two percent went to African-American and other minorities. This policy created the largest middle class in the world, and a legacy of wealth to pass on. It is also institutionalized housing segregation ghettos, which results in negative health outcomes, health levels of -- high levels of stress, diabetes, high blood pressure and lower life expectancies, inferior school systems, higher crime rates. Home ownership is tried and true path to success and well-being in society. Policies that increase the cost of housing like net zero and prices that increase commute costs. Policies to reduce GHG must not -- must equitably spread the burden and not further penalize those that have been historically marginalized. Thank you. (CDCCB)

Comment:

I came here today to voice my opposition for the proposed price ceiling that is part of the Board's proposal. Let me clarify. I understand that there might be been a little bit of misconception. I appreciate the clarification, but I came all the way from Riverside County, so I'm still going to speak. We're a family-owned and -operated business that works with concrete cutting and drilling projects that range from small residential to large capital improvement projects, such as LAX. We have 23 employees. As a small business in Riverside County, we run a tight budget. I need as much certainty as possible with outside costs, including energy and fuel. Our energy costs are some of the highest in the nation. By increasing energy and fuel costs to businesses, we will have to look for ways to pass out -- pass on added expenses, either by raising our prices or reduce or workforce. In 2008, I almost had to close the doors because diesel was \$5.49 a gallon. I don't want to get anywhere near that anymore. We all want

cleaner air, I agree. And I'm doing my part, because ever since this started, I have had to upgrade my equipment from tier 2 to tier 3, tier 3 flex to now tier 4, and tier 4 final, et cetera. I -- these machines now have to have more filters and sensors to burn cleaner, and they're less reliable. Even the manufacturers can't keep up with giving us what we need. So now I have to have three machines instead of two machines, so I can have backups. So we're already being impacted. And we appreciate what the Board is doing for a better environment, but I would say at whose expense? I respectfully ask for you to reevaluate your proposal. We need a price ceiling that does not punish California's small businesses and consumers. (PGCS)

Comment:

I'd like to echo the remarks made earlier today by our fellow industry partners and representatives and those to come, but would like to emphasize the concern on the price ceiling. We are concerned that the Legislature's direction is being ignored, and that the proposed program will drastically increase the cost of consumer goods to Californians. As presented, we believe that the proposed price ceiling would fail entirely at its statutory purpose of controlling costs that are placed on households, businesses, and the overall economy. Agriculture and its related industries, including manufacturing and processing, employs tens of thousands of Californians who depend on agriculture for their jobs and wages, whether they work on the farm, in its supply chain, or at the neighborhood grocer. Higher costs will force many to make difficult decisions for their businesses and employees, as they try to find ways to continue to push forward to provide food not only to California, but to the nation and the world. Higher costs already affect our ability to compete nationally, and directly impact hiring and wage decisions made for employees. Higher energy costs that will result from this price ceiling will only make this problem worse. Please keep in mind that these additional operational expenses are all factored into the prices everyone pays at the grocery stores, restaurants, and anywhere else they buy California grown food. If you increase one of these costs, you increase the price of food. If the Board decides on a path that does not contain -- that does not contain costs, it would make it more expensive to grow, ship, process, and store food impacting millions with higher food prices. This would especially hurt low income families for whom healthy groceries are a major expense. We believe that a balance that reduces greenhouse gas emissions while containing costs is a way to protect this industry and create more sustainable environment. Our members are stewards of the land who do everything to not only be efficient but sustainable. (MCFB)

Comment:

Our farmers received incentive funding for cap and trade that allowed them to remove old tractors and trucks, and replace them with equipment that produce significantly less emissions. However, we worry that if projections aren't correct, and the amount reaches the price ceiling, it would decrease the purchases of credit, which would reduce the amount of incentive funding, and prevent farmers from upgrading their equipment.

Our farms pay some of the highest utility rates in the country. And when you factor in the cost of fuel, many of our small forms will simply not be able to stay in business. Besides the potential loss of jobs, farmer workers travel longer distances un less fuel efficient vehicles to work. Any increase in utilities or fuel is less money for family expenses. Agricultural workers, farmers, all suffer with increased energy costs. On behalf of the Nisei Farmers League, we urge this Board to adopt a price ceiling consistent with the bipartisan agreement contained in AB 398. Thank you for your time and consideration. (NISEIFARMERS)

Comment:

I'm here today because the proposal before you today will harm my community. Many Central Valley communities have been left behind in the economic recovery. Our residents and farmers still struggle with the effects of the recession. Our community wants better air quality, but we want to make sure that the costs do not dramatically increase and cost and even greater hardship on our residents. I want to repeat that last statement, because it's important. Please do not pass a price ceiling that will increase cost of credits to the point where no one can afford to purchase them, therefore closing businesses, increased job loss, and energy costs. This type of help is not what my community needs or wants. Let's work together to fix our air and environment, but in a way that it doesn't hurt our community in the process. (ORANGECOVE2)

Comment:

All the statistic, all the data that is required, I'm sure the Board would -- can get all of that. But I want you to just hear from the shepherd's heart, or the heart of a faith leader how important it is that our concerns be considered. We hope that you would consider all that the inner-city, and the downtrodden, and disenfranchised go through on a day-to-day basis. It's important to us, as we lead this charge -- we're in the trenches, we're on the front lines, leading a people that feels like they're disconnected, disenfranchised. There's almost no hope. And we're there on daily basis just leading that charge. One of the programs -- one of the programs that our organization provide is a food program. We have a homeless shelter, but there is a food pantry that we have. You should see the lines that come to our church, to our local edifice, you know, just reaching out to get whatever resources that they can get. It would touch your heart . It would touch your heart. As I said, we're just a few blocks away from, you know, skid row downtown Los Angeles. You know, as a male guy, you figure you have to put on your hard and your boots and stuff to walk down there in that area. I do not know if the Board could stand walking down in that degraded area. It's rough. It's tough. It's people living like you wouldn't believe. I'm sure you've seen the picture. I know you have the data. But, you know, I'm asking the Board at this time -- I'm asking the Board at this time -- I'm pleading -- I'm pleading our case. We're asking that the Board would take into consideration all that it needs. Every is an issue. The gas is an issue. The energy is an issue. The housing is an issue. You know, the resources that always, you know, seems like the good old boys get the contracts that sort of thing. Would you consider us

in South Los Angeles, would you consider us the people that are on skid row, would you consider the inner-city kids that have the programs that we need. You know, they're not in the suburban areas where, you know, they seem to have these things that -- at their finger tips. But we're finding -- I'm hoping that someone that would stand with me that would champion for these people, for these disenfranchised people that they will come and help us. (VISIONS)

Comment:

When the legislature extended cap and trade last year, it specifically tasked the Air Resources Board with making sure costs for carbon emission allowances would not become so high it would hurt businesses and consumers. To do -- to do that, ARB must set a ceiling price for the carbon allowances. However, the recommendation before your Board sets the ceiling price so high, it will likely result in skyrocketing costs for carbon allowances. When businesses have to pay more, those costs are passed on to consumers, and some businesses will be driven out of California. Californians already pay an average \$0.85 more per gallon of gas than residents of other states. The legislature increased per gallon costs by another \$0.12 last year. And costs are expected to increase another \$0.36 to \$0.44 per gallon beyond that under ARB's enhanced Low Carbon Fuel Standard. California's families simply cannot afford more spikes. Overly high price ceilings would result in exactly what the legislature wanted to avoid in passing AB 398. BizFed Central Valley is asking the Board to reconsider the carbon allowance price ceiling at a more realistic level. (BIZFEDCV)

Comment:

And a lot of those farms and ranches are price takers. We're highly dependent on export markets for many of our fresh grown products including locally in Tulare County a lot of citrus and grapes. We compete locally, nationally, and globally with farms that are able to produce at much lower regulatory costs than those of us based here in California. And farms are especially vulnerable to rising energy costs. The cost of doing business in California is already alarmingly high. Our operational costs must also be passed along the entire food chain that you represent in the grocery store, the wholesaler, the supplier, and the distributor. In Tulare County, the agricultural industry directly supports approximately 25 percent of our employment base, second only to government employment. We are directly impacted anytime prices rise for food, and certainly impacting the jobs that are available in our local economy. Indirectly, our multiplier effect in our community is additionally three more dollars for every dollar produced within agriculture. And when drought and water impacts are crippling our communities, it is difficult to leverage all of those additional costs on the backs of all of our other production inputs. In addition to the cost that we see directly involving shipping, transportation, supply chain management, and many other costs, we also have a rather disadvantaged population in many respects. About 25 percent of our county's population relies upon the food link pantry system in Tulare County to supplement their food insecurity issues. We know that imposing this price ceiling may

largely impact and hurt some of our lowest income families, and families directly employed in agricultural positions. We know that passing on more energy and fuel costs disproportionately impacts those low-income communities, particularly in farm communities like Tulare County. Decisions that you will make will impact jobs directly in agriculture and many outside indirect jobs, and, in general, have a significant impact on families in Tulare County and the central San Joaquin Valley. For these reasons, I would ask you to respectfully reconsider the price ceiling. We oppose the current proposal and would ask that you seek to find a more reasonable approach to this plan. (TCFB)

Comment:

I do have the blessing and the burden of dealing with the least fortunate in our communities. As one of my colleagues just spoke, one of my programs is I do feed homeless, as well as give them a shower. And to experience -- to come out and actually experience the gratefulness that meal and that shower. But some of those same folks even drive off, drive off with -- they have to borrow gas money that I give out of my own -- out of my pocket. When we do it to the least, I'm unapologetically a Christian. The Bible tell me -- when we do it to Christ say we're doing it unto him. I -- as the Supervisor made a statement as far as he don't see -- where he doesn't see the outrage or -- a lot of times you don't see the outrage, because there's a disconnect. Mainstream knows who don't get hurt, and don't -- but I'm here to offer not as a way of -- I believe in -- by omission of permission, that we all are responsible for the conditions of our community. So as a way of kind of bridging the gap, I offer my services to any of you up here who want to connect or -- I can get you -- you want to see outrage, I can get you -- I can set up those town halls where you'll get that outrage. But at the end of the day, we need to work together. And unlike the administration at the top now, we want to be able to build bridges and not walls. (GLBC)

Comment:

Today, I want to talk to you about not raising the electric/gas prices. One of the reasons being is because the people that move here are the same people that are leaving here, and we can't even hold the people that are moving here due to the increase in inflation. So when we -- if you raise the gas prices, that's going to make the economy in California less sustainable. So we have to do what's good for the greater good of the community. (NAN)

Comment:

I wanted to talk about -- a little bit about agriculture briefly in our region. It's a \$2.5 billion industry in 2017 numbers. So that was what our farm gate value was. That isn't the value of the produce when it hits the grocery store. That's the farm gate value. And when you see an agricultural industry we're dependent on so many things. We're depending on water. We're depending on the land obviously. We're depending on a whole host of other things, inputs, and obviously energy. We're extremely dependent

on energy and the cost of energy, and how that impacts us. And that's already been covered. But I want to talk about a couple different commodities. Our top four commodities are dairy, walnuts, almonds and wine grapes in some order every year. They kind of bounce back and forth depending on prices and yields on that given year. Let's talk about briefly about dairy. You've had dairy interests speak already today. In the last 10 years we've seen exactly one dairy expand in our county. One. We've seen no new applications for no -- there's not been one new application for a dairy. It requires a use permit in our county. Not one new dairy has come to our county, and only one is expanding. We need to talk about what's going on in the industry, because I think it's getting lost here. The problem that we're seeing is that there's -- nobody is looking at the cumulative impacts. I'm in a meeting this week in this room. Last week, I was across the hall. I could be down in Fresno at another one at this very moment. I mean, there's always another meeting, and nobody is looking at the cumulative impacts to agriculture of all of these regulations and costs. And as you look at that, dairy is the first one I wanted to mention. Asparagus. We were the number one asparagus growing county in the State. At one point, we had over 60,000 of asparagus. We have less than 1,000. Cumulative impact of regulations like this are the cause of that. Less than 1,000 acres. Our last big processor just went out business. Has closed doors. We have some small ones left, but it's very small at this point. That was a significant industry for us and it's gone. Old Vine Zinfandel. How many of you have seen bottles of Old Vine Zinfandel from Lodi, or the foothills, or whatever. These vines lasted more than 100 years, and they continued to produce wonderful wines. And they're now being pulled out. It's kind of a ironic that they could make it through prohibition, but they can't live in California's regulatory climate anymore. Made it through prohibition, but can't stand -- or can't make it through California. Walnuts. One of the fastest growing commodities in our county the last probably 10 years, in terms of acreage. A lot of people pulling old vine and planting walnuts and almonds, to be honest with you. But you know where our newest processor is? Sparks, Nevada. Cost of doing business in California. So now our walnuts being processed, being taken, shipped, and taken to Sparks where the rest of that economic activity is taking place. So we'd ask you to look at these things. You know, I said our crop report was 2.5 million[SIC]. It's not going to be 2.5 million[SIC] in 2018. I can already tell you that. The numbers -- farm prices are depressed right now. The farm economy is depressed right now. Rules like this certainly are not helping. (SJFB)

Comment:

I think we've heard a lot today about some of the political concerns and some of the structural concerns of this program moving forward. CCEEB, in general, supports the structural changes that are being made to this program as we -- as we proceed into the 2020 area -- or the post-2020 program for SB 32 compliance. We support the staff's recommendations and urge the Board to adopt them in regards to the allocations to the third compliance period and other things that will keep this market kind of even and steady, which is really the goal of markets and what business is looking for in most

regulations. We want to see that steady and even consistent hand from the regulator to allow us to enter into this market and make the investments that we need to make between now and 2030 in order to achieve California's goals. That can't be done by disrupting a third compliance period to achieve a three-year increase in revenues, only to bring us back down in 2021. Those disruptions are not necessarily built out of having this even pace and good steadiness, as much as they are built to kind of punish businesses that some folks don't see acceptable in this state anymore, as they're trying to make this investment. And it sends the wrong signal as executives and stakeholders and shareholders are making investment decisions for the California companies. And so to that end, we urge the Board to kind of keep the steady pace, maintain the CP3 -- the third compliance period industrial assistance factors as it evens us down over into the next phase of the program, as adopted by 398. It's that even and steady transition that's needed in order to ensure that the investment is made here and not made elsewhere. Additionally, we'd like to support banking, as this allows businesses to make those early investments. It also allows them to kind of jump in early, while they're doing the physical infrastructure needs that they have to do at their facilities. As you guys know, we have a lot of regulations and laws that extend beyond this building in terms of permitting. Those permitting things can't be made overnight. You know, we know that for a large facility, it can take sometimes seven years to get the permits. And that -- we're going to see that in the later years of this program, especially when the markets tighten up. And then to that end, we do have the political concern. And I think the biggest political concern that you guys saw here is the price ceiling. We do have concerns about cost. Wages haven't grown substantially in California or the rest of the United States over the last 20 years. They're not keeping up with inflation. And to that end, the public's ability to pay over time is going to be tightened. We've seen how this fight has ended up in other infrastructure fights. You know, and those of you at the local level know that -- what it takes to get those bonds passed. We're continuing to place an additional burden on the public to pay costs to fund the programs that we need. And in doing so, we need to balance that. And so it is a political decision for this Board to make, but we want to make everyone aware that it has to be considered that this is going to provide a burden. And we have to be willing to accept that burden, whether we hit that ceiling or not. It's the -- that's the signal that's going to be sent. So we urge the Board to move forward with this process and adopt this rule. (CCEEB2)

Comment:

We are opposed to the price ceiling for reasons that have already been stated and articulated far better than I ever can. Thank you very much. (APC)

Comment:

I'm here to urge you to reject the proposed price ceiling, which is part of the Board's proposal today. IEEP is concerned about the harm that our communities could have if the cost of electricity, gas, and diesel dramatically escalate.

Simply put, we cannot afford unending dramatic increases in fuel energy costs. The Inland Empire covers more than 24,000 square miles. And while our region is working harder to improve our transit -- public -- our public transit system, you know, driving to get to where you need to go still remains reality. You know, I drive 45 minutes to get to work every day, and I'm one of the lucky ones frankly, because that was considered a short drive.

More and more people are spending more time on the road, and the cost of fuel is taking up a larger and larger share of their budgets. By setting the price ceiling so high, we think the Board is risking increasing that burden on drivers that face every day in Southern California. You know, IEEP supports efforts to reduce our greenhouse gas emissions.

And while we recognize there is going to be increased costs associated with doing that, we shouldn't seek to needlessly increase those costs, which is what we think the current proposal does by setting such a high price ceiling.

California -- you know, as was mentioned earlier California is responsible for only one percent of the world's greenhouse gas emissions.

And where our strength really lies in is being able to demonstrate a program that shows, look, you don't have to choose between the environment and a healthy economy.

You can have both. We think that the carbon -- the Cap-and-Trade Program is one of those programs that really is designed to really showcase that, because we can show we can achieve the successes and the greenhouse gas emission reductions without setting those impacts so high. We also urge you to keep in mind the costs that, you know, consumers and businesses are already facing. When it comes to transportation result of Senate Bill 1, IEEP opposed the initiative that would have repealed it, because we think sometimes it is important to invest in that.

And while we're willing to pay for our share to improve our transportation system, to improve our environment, we think that those same goals to reduce GHG emissions can be done with minimizing the risk to consumers by setting that cap lower. So I would urge you to reconsider that, and reject that part of the proposal. (IEEP)

Response: These comments request that CARB reject the proposed price ceiling on the grounds that Californians cannot afford higher energy costs or that the proposal would impact household net costs. They do not propose any particular alternative except to reference a non-specific "bipartisan agreement" without listing a specific price. In response to these comments, see Responses to 45-Day Comments B-3.12 and B-3.15. For a discussion of the price ceiling and leakage, see Response to 45-Day Comments B-3.14. With respect to the commenter (CCEEB) who also supported staff's proposal to modify the allocation assistance factor for the third compliance period to be equivalent to the 100

percent assistance factor in the second compliance period and the post-2020 compliance periods as required by AB 398, thank you for the support.

K. ALTERNATIVES TO THE CAP-AND-TRADE PROGRAM

K-1. Additional Strategies

Post-2030 Commitments

K-1.1. Comment:

D. An important factor in California's progress towards achieving climate goals as the state approaches 2030, will be whether and how soon the state can codify ambitious, midcentury goals.

Setting binding, statutory goals and extending the cap-and-trade program beyond 2030 could significantly influence the behavior of the market and market participants as the state approaches 2030. Setting these ambitious goals could keep the pressure on market participants to continue banking and to achieve relatively cost-effective reductions as soon as possible. It could also send a stronger signal to the larger economy that could spur adoption and innovation which could bring more reduction opportunities within that cost-effective range. As described above, there could be an important opportunity to increase ambition through cap adjustments at strategic points. Setting a long-term target that will drive necessary reductions is another important way to keep California on the reduction trajectory that science demands. (IEMAC – Foster Appendix)

Response: This comment is outside the scope of the proposed amendments. The current 2030 emissions cap of 40 percent below 1990 GHG emissions levels was codified by the Board in 2017 pursuant to SB 32. Executive Order B-55-18 establishes a goal of carbon neutrality by 2045.

Direct Reductions and Additional Programs

K-1.2. Comment:

CARB's greenhouse gas program should be designed to effectively reduce our state's greenhouse gas emissions to meet the mandates in Senate Bill 32 (SB 32), while analyzing and addressing any disproportionate impacts in our state's disadvantaged communities. CEJA believes the best, and likely only, way to accomplish this is by requiring direct emission reductions and aggressively expanding complimentary climate programs outside of cap and trade. However, given CARB's large reliance on cap and trade for reductions, CEJA and APEN are providing the below recommendations for strengthening the cap and trade program in response to CARB's Discussion Draft...

Given the significant work the cap and trade market is expected to do, we urge CARB to continue developing additional complimentary emission reduction policies and programs. This will help reduce the pressure on the cap and trade market, and it would

also help achieve more clear compliance with AB 197, which requires prioritization of direct emission reductions. It would also help CARB develop a more clear regulatory path to reducing vehicle emissions, also needed to achieve environmental justice as well as meet our 2030 targets. (CEJA)

Response: As the commenter notes, CARB implements a variety of programs designed to reduce GHG and local pollutant emissions, including the Cap-and-Trade Program. This comment focuses on a request for additional programs, which are outside the scope of the proposed amendments. The use of complementary policies in tandem with the Cap-and-Trade Program is necessary to maximize long-term GHG reductions. As suggested by the 2018 IPCC Report, a combination of broad and targeted measures may be the most efficient and effective means to dramatically reduce GHG emissions. The 2017 Climate Change Scoping Plan presents existing complementary GHG reduction policies and programs to address a 2030 target. These include renewable energy and energy efficiency policies, SB 350, increased stringency of Low Carbon Fuel Standard (LCFS) (18 percent carbon intensity [CI] reduction by 2030), Mobile Source Strategies and Sustainable Freight Strategy, Short-Lived Climate Pollutant Reduction Strategy (SLCP Strategy), and increased stringency of SB 375 2035 targets for Sustainable Communities Strategies. CARB notes that the proposed amendments fully comply with AB 197, as discussed in Response to 45-Day Comment B-1.3. Activities focused on local emissions are further discussed in Response to 45-Day Comments K-1.3.

Local Emissions Caps

K-1.3. Comment:

Second, environmental justice has been largely ignored in California's C&T policy. We request that there be stronger *local* caps on concentrations of toxins and particulates from fossil fuel combustion. (CLIMATEREALITY, WEBER, HERNANDEZ)

Comment:

Though the first C&T priority must be for CARB to reduce emissions caps, we also urge state lawmakers to create additional stronger local caps on concentrations of toxins and particulates from fossil fuel combustion...

We request that... (b) CARB consider additional rules to address the inadequacies in protecting health among local communities. (SILICONVALLEYCOALITION)

Comment:

Further, there is no cap on local toxins affecting the communities where the polluters reside. This is a critical missing piece of this cap and trade bill and needs to be changed to protect citizens living in these geographic areas...

The Lehigh Southwest Cement and Quarry or now called the Lehigh Hansen Cement and Quarry is an abomination has been so for over 90 years and counting they are running out of limestone to mine their cement and will soon very soon need to apply for a permit to mine another pit that will destroy 30 thousand trees and 600 acres this should never be allowed. If they are allowed to by more credits to increase this pollution allowance limit the people here in Silicon Valley and the SF Bay area will continue to suffer it seems there will be no end to this poison, pollution, and destruction.

The Bay Area Air Quality Management District over the Silicon Valley under the Air Resource Board needs to address this Cap-in-trade situation along with the state working together to shut down the Lehigh Southwest Cement and Quarry and the Steven Creek Quarry that have been polluting the public the Air, Water and Soil are highly polluted and the permit given out to these polluters only allows them to pollute. The levels of pollution are set high by the state and the EPA and so it really looks as if they are setting them high in order to allow the polluter to pollute and keep operating. It also seems that the polluter is always under these set levels and is allowed to pollute. The cumulative effect of the pollution to the public is not even taken into consideration there is no testing of the amount of pollution the public has endured and my question is why have the agencies and especially the State and Federal Health agencies not conducted tests on humans to see what is causing all of the health problems such as cancer and death. The EPA moves very slowly to set limits for each pollutant and because of that we the public continue to suffer.

I truly believe that the Cap-and-trade system should be abolished never to be heard from again and that each polluter company should have strong very strong limits set on their emissions and that the Bay Area Air Quality Management District should start to impose stronger regulations on the 400 hundred companies in the Silicon Valley that they say are polluting. There are they say 2,000 thousand companies that are polluters but it seems they can only handle 400 hundred at this time. I have asked them and the Air Resource Board to start their strong new regulations on these companies that include the Lehigh Southwest Cement and Quarry and the Steven Creek Quarry so far nothing is happening and so I have gone to the Air Resource Board to get some answers.

I hope that our representatives will take this matter very seriously and help to stop the pollution of our homes. (HELGERSON)

Response: The commenters request local caps on toxins and particulates, with the last commenter discussing water and soil pollution and closing down two cement plants. These comments are beyond the scope of the amendments proposed in this rulemaking, and no further response is necessary. Notwithstanding this, the Board notes that the amendments do not significantly alter the overall manner in which the Cap-and-Trade Regulation is designed to reduce statewide GHG emissions. While focused on GHG emissions, the Cap-and-Trade Program is expected to reduce criteria pollutant emissions. Based on

the available data, the current law and policies that control localized air pollution, and the expected compliance responses to the Regulation, CARB has consistently concluded that increases in localized air pollution, including toxic air contaminants and criteria air pollutants, attributable to the Program are extremely unlikely.

In addition, local air districts, rather than CARB, have direct authority to regulate criteria pollutant and toxic emissions from stationary sources. Nevertheless, for many decades, the State has implemented many policies and programs to address and reduce criteria and toxic air pollutants. As a result of these state and local efforts, significant progress has been made in reducing diesel particulate matter (PM) and many other hazardous air pollutants. For example, and based on the most current CEPAM inventory (2016 SIP inventory tool V. 1.05), statewide NOx emissions have been reduced by 26 percent between 2012 and 2017, and diesel PM has been reduced by 50 percent over the same period.

It is important to note that the Cap-and-Trade Program is just one of many programs that address air emissions in California, and CARB is just one of several organizations responsible for administering these policies. Following are examples of additional efforts in the State to reduce air emissions, as led by CARB and other organizations. To date, at least half of the monies collected from the sale of Cap-and-Trade Program allowances at the quarterly auctions have been allocated for programs that benefit disadvantaged communities. These investments yield GHG and air pollutant cobenefits. The list below includes some of the programs being funded by the Cap-and-Trade Program auction monies that are benefitting disadvantaged communities:

- Low-Income Weatherization Program/Renewable Energy
- Urban forestry
- Zero and near-zero emission passenger vehicle rebates
- Heavy duty hybrid/ZEV trucks and buses
- Pilot programs (car sharing financing, etc.) in disadvantaged communities
- Intermodal affordable housing
- Transit-oriented development

While data does not indicate that the Cap-and-Trade Program is contributing to increases in local air pollution, CARB recognizes the need to achieve additional emissions reductions of toxic and criteria pollutants that are impacting communities. As discussed initially in Chapter 1 of the ISOR and further below, AB 617 (Chapter 136, Statutes of 2017), the Community Air Protection Program provides a new framework and tools for CARB, in collaboration with local air

districts, to deploy focused monitoring and ensure criteria and toxics emissions reductions at the community level. Some communities, largely low-income and composed of people of color, continue to experience higher exposures than others because of the cumulative impacts of air pollution from multiple sources located in these communities. AB 617 directs and authorizes CARB to take several actions to improve data reporting from facilities, air quality monitoring, and pollution reduction planning for communities affected by a high cumulative exposure burden. With regard to reporting, it requires CARB to develop a uniform statewide annual reporting system of criteria pollutants and toxic air contaminants for certain categories of stationary sources. As for monitoring, it required CARB to prepare a monitoring plan by October 1, 2018 to identify the highest priority locations around the state to deploy community air monitoring systems. By July 1, 2019, any district containing a high priority location would need to deploy a community air monitoring system for that location or locations. The districts would also have authority to require nearby facilities to deploy a fence-line monitoring system under certain conditions. These efforts will help better understand the complex emissions interrelations between the Cap-and-Trade Program and air district criteria and toxics programs. Finally, with regard to planning, AB 617 also requires CARB to prepare, in consultation with numerous stakeholders (including environmental justice organizations), a statewide strategy to reduce emissions of toxic air contaminants and criteria air pollutants in communities affected by a high cumulative exposure burden. The Board approved AB 617 program requirements and community selection at the September 2018 Board hearing. See also Response to 45-Day Comment B-1.7.

These topics are discussed in more detail in Chapter V of the Initial Statement of Reasons, in the December 10, 2018 Final Environmental Analysis,⁵⁴⁴ and, with respect to previous amendments to the same Regulation, in the July 17, 2017 Final Environmental Analysis.⁵⁴⁵

Environmental Justice Representation

K-1.4. Comment:

I write separately to address to the subcommittee report on the Environmental Justice Implications of California's Climate Change Policies. I would like to thank my colleagues for revising their subcommittee report in response to public comments at our September 2018 meeting and appreciate its expanded scope. In my judgment, however, the report's evaluation of CARB's engagement with the environmental justice community lacks sufficient balance and remains inadequately supported by evidence.

⁵⁴⁴ <https://www.arb.ca.gov/regact/2018/capandtrade18/capandtrade18.htm>

⁵⁴⁵ <https://www.arb.ca.gov/regact/2016/capandtrade16/capandtrade16.htm>

Furthermore, this particular topic lies outside our committee’s proper scope. The IEMAC does not include representation from anyone whose professional role focuses on the interests of environmental justice communities.⁵⁴⁶ An inclusive consultation process might fill that gap, but if the subcommittee engaged in substantial discussion with environmental justice organizations during the revision process, the final report contains few details. I therefore respectfully submit that the subcommittee report should not be taken as an adequate evaluation of the interaction between CARB and the environmental justice community in California. Going forward, I would urge the IEMAC to conduct a more balanced and inclusive analysis of environmental justice governance concerns, if indeed it is our proper role to evaluate the processes by which CARB and the environmental justice community interact. (IEMAC – Cullenward Appendix)

Response: The commenter evaluates the IEMAC comments (45-Day Comments K-1.5) on CARB’s engagement with the environmental justice community. This comment makes no request regarding the amendments themselves and therefore is outside the scope of the proposed amendments. Nevertheless, CARB notes that AB 32 calls for CARB to convene an Environmental Justice Advisory Committee (EJAC), to advise the Board in developing the Scoping Plan, and any other pertinent matter in implementing AB 32. It requires that the Committee be comprised of representatives from communities in the State with the most significant exposure to air pollution, including, but not limited to, communities with minority populations or low-income populations, or both. CARB consulted 13 environmental justice and disadvantaged community representatives for the 2017 Scoping Plan process, starting with the first Committee meeting in December 2015. In February and April 2017, members of the California Air Resources Board held joint public meetings with the EJAC to discuss options for addressing environmental justice and disadvantaged community concerns in the Scoping Plan. The full schedule of Committee meetings and meeting materials is available on CARB’s website.⁵⁴⁷

Starting in July 2016, the Committee hosted a robust community engagement process, conducting 19 community meetings throughout the State. To enhance this community engagement, CARB staff coordinated with staff from local government agencies and sister State agencies. At the community meetings, staff from State and local agencies participated in extensive, topic-specific “world café” discussions with local groups and individuals. The extensive dialogue between the EJAC, State agencies, and local agencies provided community residents the opportunity to share concerns and provide input on ways California can meet its 2030 GHG target while addressing a number of environmental and

⁵⁴⁶ Four of the five voting committee members are academics who do not specifically focus on environmental justice issues (myself included). A fifth member, Mr. Foster, specifically disclaimed any role in speaking for the environmental justice community in his present professional capacity. CalEPA video recording of the September 2018 IEMAC meeting, morning session, timestamp 1:51:50.

⁵⁴⁷ www.arb.ca.gov/cc/ejac/ejac.htm

equity issues. Disadvantaged communities are also considered priority communities for the purpose of Greenhouse Gas Reduction Fund expenditures, as required by SB 535 and AB 1550.

In addition, since early 2017 CARB has had an Assistant Executive Officer for Environmental Justice. Her office coordinates outreach to environmental justice community representatives regarding CARB activities, including on the adopted amendments to the Cap-and-Trade Regulation. CARB staff informed the EJAC of public workshops and the availability of the proposed amendments, as well as meeting with some of the EJAC members to discuss the proposed amendments. Environmental justice representatives are welcome to meet with CARB staff, comment during public comment periods, and otherwise participate in the Cap-and-Trade Regulation amendment process.

Improving CARB Inclusiveness of Communities and Environmental Justice Concerns

K-1.5. Comment:

- More is expected and must be done to further an inclusive and transparent process between the agency, environmental justice advocates, and local communities to foster trust...

C. Governance

CalEPA staff are to be commended for their thoughtful and deliberate approach to addressing some complex issues and tradeoffs across a state that is regionally and culturally diverse. The cap-and-trade program design should continue to reflect its intention of being the backstop to the suite of climate policies that help drive down CO2 emissions. At the same time, the state should also support efforts to address air quality concerns in marginalized communities across the state through additional policies like AB 617, which we agree with environmental justice communities, is but a first step to truly prioritizing addressing local pollution in vulnerable communities.

It is important to recognize and commend the leadership within the environmental justice movement for pushing the concerns of many Californian's to the forefront of our political discourse pertaining to how we will prioritize those concerns within the context of climate action. Environmental justice communities are supportive of the governance changes that have been adopted to ensure their concerns receive the proper attention and action from senior staff within CARB and CalEPA. Today, the California Air Resources Board has expanded to include two voting members with experience on environmental justice issues. Additionally, the Legislature through AB 197 now has two appointments to CARB that are non-voting members but can continue to provide legislative oversight on concerns raised by environmental justice communities before the Board. CARB has also created the role of Assistant Executive Officer for Environmental Justice primarily responsible for coordinating with and representing the interests of environmental justice communities on behalf of the agency.

Finally, in 2015 the agency recommissioned the Environmental Justice Advisory Committee (EJAC), which is comprised of community leaders and experts on environmental justice issues. Since the passage of AB 32 in 2006, the environmental justice advocates and community leaders have grown in influence. That influence is reflected in these governance changes ensuring that these communities can participate more directly and substantively in how California addresses climate change and local air pollution challenges. CARB staff continue to demonstrate the importance of ensuring community leaders are included in the regulatory process through its public workshops held in environmental justice communities, increased transparency with public reporting of data, and willingness to adjust outreach efforts to ensure cultural relevance and competency. We recommend that CARB remain consistent in these outreach efforts both with local communities and with current EJAC committee members...

F. EJAC Recommendations

While there are some stark differences between the EJAC recommendations on which tools the state should adopt to meet its emissions goals and what was eventually adopted, staff and Board support of the committee is helping to build trust. It is important to note that trust does not require that the recommendations from the EJAC be accepted. Even when there are disagreements and discrepancies between recommendations and policy implementation, trust can still be cultivated if recommendations are received and analyzed by staff, and if the discussion around these recommendations is transparent and substantive.

Shared benefits from the state's climate policies are critical to ensuring equity is achieved. Some examples of this are the state's California Alternate Rates for Energy (CARE) Program that helps to reduce energy costs for low-income families. Programs like these are supported by EJAC members who understand how these programs will be impacted by new regulations. Having this perspective is important to reducing the potential for negative unintended outcomes associated with the agency's strategies.

Also of concern to environmental justice advocates is the definition of what constitutes a "Direct Environmental Benefit". These communities have long held that offsets, which can provide an important means of enhancing cost effectiveness of climate change mitigation, export California benefits and contribute to the creation of toxic hotspots in vulnerable communities. Ensuring that offset projects from outside of California meet specific verifiable criteria on a project by project basis, can alleviate most of the concerns that benefits from approved offset protocols will indeed benefit Californians in some direct way. The creation of the Offset Protocol Task Force by AB 398 will also provide some assurances to environmental justice communities and advocates that more deliberate consideration will be given to new offset projects in the state.

While differences remain between CARB's positions and the concerns of some environmental justice leaders in how air quality and GHG reductions are addressed, it is crucial that CARB continue to engage and work with environmental justice communities.

There also remains concerns that AB 197, which calls for CARB to prioritize direct emission reductions is somehow not being implemented with the appropriate intent of the legislation fully realized.

The most important component of AB 197 to environmental justice advocates is the direction it gives CARB to prioritize direct emission reductions at the source level. There continues to be an underlying concern that the state's primary focus particularly with the cap and trade program to reduce GHG emissions will diminish the priority to address localized criteria pollutants from industrial sources. This tension continues to undermine efforts to narrow the communication gap between CARB staff and many advocates adding to lingering sentiments of mistrust. Although these issues fall outside of the scope of this committee, however we do recognize that trust is earned, and CARB should continue to take the necessary steps to build that trust with communities who have historically not played a direct role in creation and implementation of air quality regulations.

The recommendations of the EJAC, while not accepted completely, demonstrate that people are paying close attention to the decisions that CARB is making and want to be a part of the solution to the crisis. The recommendation of this committee is that CARB continue to be transparent and consistent in engaging with and strongly considering the analysis and recommendations without prejudice from EJAC members and local environmental justice advocates.

G. Conclusion

In this commentary, we have highlighted some issues and concerns that warrant particular attention going forward:...

2) We acknowledge the governance changes that have been made to help EJ communities participate more directly and substantively in how California addresses climate change and local air pollution challenges. It is important that CARB remain consistent in these outreach efforts both with local communities and with current EJAC committee members...

5) We acknowledge EJ concerns pertaining to the implementation and intent of AB 197. We encourage CARB to continue working with the Legislature and EJAC committee members to address and alleviate these concerns.

We are hopeful this commentary will reflect the progress that CARB has made in working to ensure environmental justice communities participate in a robust vetting process of pending regulations so as to feel that they are indeed being heard. It is clear however that in spite of this progress, more is expected and must be done to further an inclusive and transparent process between the agency and local communities. CARB should continue to build trust with communities who have historically not played a direct role in creation and implementation of air quality regulations.

We also sought to provide a balanced analysis of the current program and the EJ perspective that continues to encourage CARB to consider and identify gaps, which may need further action to ensure local communities share in the benefits of California's climate policies. That is an outcome that both the agency, the Legislature, and environmental justice communities want. The IEMAC committee fully agrees with this and believes these recommendations can help continue to keep the state on track to meet its GHG emissions goals, while also ramping up its effort to mitigate and reduce local pollution burdens in California's most vulnerable communities.

[The original comment, which includes a reference list, is available at <https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=ct2018>.] (IEMAC)

Response: The commenter acknowledges CARB's governance changes relating to environmental justice and requests CARB continue environmental justice outreach and coordination relating to AB 197 implementation. CARB thanks the commenter for the support and will continue coordinating with stakeholders and implementing AB 197. With respect to the portion of the comment referencing environmental justice concerns and AB 398's "direct environmental benefits" requirements, see Response to 45-Day Comment G-3.2. The comment is otherwise outside the scope of the proposed amendments. For more discussion of CARB's communication regarding environmental justice, see Response to 45-Day Comments K-1.4.

Addressing Local Air Pollution

K-1.6. Comment:

- Local and regional air pollution poses significant environmental and health risks, and these local pollution problems should be addressed as vigorously as global climate change...

California's efforts to mitigate global climate change are important. However, climate change is not the only environmental concern that poses significant risk to the well-being of Californians. Local and regional air pollution poses significant environmental and health risks. Going forward, these local pollution problems should be addressed as vigorously as global climate change, particularly in marginalized communities which are disproportionately exposed to these risks. (IEMAC)

Response: This comment does not address any of the proposed amendments in this rulemaking, and is therefore outside the scope of the proposed amendments. CARB agrees that GHGs are not the only air pollutant that must be addressed. State and local efforts to reduce criteria and toxic air pollutants are discussed in Responses to 45-Day Comments B-1.7 and K-1.3.

Environmental Justice and Monitoring Distribution of Impacts

K-1.7. Comment:

- Continue to monitor and analyze the distribution of emissions impacts associated with California's GHG emissions trading program on disadvantaged communities...

Chapter 3: Environmental Justice Implications of California Climate Change Policies

Authors: Quentin Foster and Meredith Fowle

A. Context

California faces intensifying risks from climate change, including more intense forest fires, coastal erosion, prolonged droughts, and more frequent episodes of extreme heat. In response to these escalating risks, California has committed to reducing its greenhouse gas emissions, and to protecting the public against significant climate change related damages. The state is implementing a suite of policies designed to reduce in-state GHG emissions and stimulate the development of low carbon solutions that can be deployed more broadly...

The critical importance of local air pollution problems notwithstanding, our committee is tasked with reviewing California's GHG cap-and-trade program and associated climate change policies. Our charge is not to question the fundamental policy architecture, but rather to evaluate the policy design and governance choices that could have significant implications for program effectiveness. The focus of this sub-committee, in particular, is on how California's climate change policies and programs could impact socioeconomically disadvantaged communities.

In this commentary, we briefly review some of the research that investigates these issues, we assess the ways in which California Air Resources Board (CARB) has been responsive to environmental justice (EJ) concerns, and we highlight some policy design and implementation features that warrant particular attention.

Although conversations with the EJ community were considered carefully in the writing of this report, this is not intended to be a consensus document. This comment seeks to characterize the range of opinions and perspectives on key issues, identify knowledge gaps, and highlight issues that merit careful attention going forward.

B. Lessons from literature on cap-and-trade and environmental justice

Although the GHG cap-and-trade program has attracted a great deal of attention, it is important to keep in mind that cap-and-trade plays a supporting role in California climate policy. More prescriptive programs and regulations are expected to deliver the

majority of mandated GHG emissions reductions.⁵⁴⁸ That said, the cap and trade program does have three critical roles to play:

- 1) A binding emissions cap ensures that the state's GHG emissions reduction targets are met.
- 2) Trading of allowances between firms can significantly reduce abatement costs incurred to meet the cap.
- 3) The sale of allowances raises revenues that can be used to mitigate adverse impacts of climate change and/or reduce any inequities in cost burden.

Economists favor market-based climate change policies, such as emissions trading programs, because they are designed to seek out and incentivize the least costly GHG abatement options. Environmental justice advocates have been quick to point out that the least cost climate change mitigation solutions need not be the most equitable or desirable. In principle, revenues raised through the sale of allowances can be used to offset these inequities. In practice, this kind of redistribution can get complicated.

One complication is that GHGs are often co-emitted with local pollutants that cause localized health and environmental damages. Thus, the allocation of GHG emissions abatement responsibilities can have important implications for local environmental quality. Historically, GHG emissions and emissions of local pollutants from point sources have been strongly positively correlated. In the past, changes in emissions have primarily been driven by variation in industrial production levels. However, the relationship between GHGs and local pollution could look quite different if pollution reductions are induced by a policy targeting one form of pollution. For example, a gas-fired boiler could increase combustion temperatures to lower GHGs, but this would increase local pollutant emissions (Holland, 2012). In this case, mandating a decrease in GHGs would lead to a *deterioration* of local environmental quality. The impact of a policy-induced reduction in GHGs on local pollution will really depend on the extent to which local and global pollutants are substitutable.

Economists have begun to empirically investigate the cross-effects of pollution regulations. Holland (2012) examines the response of GHG emissions to an increase in the stringency of NO_x regulations for California power plants. In this context, electricity generating firms primarily complied with the policy by reducing output which reduced both types of pollutants. Brunel and Johnson (2016) isolate plausibly exogenous spatial and temporal variation in local and regional air pollution induced by the Clean Air Act in order to empirically evaluate complementarities in U.S. manufacturing sectors. In contrast to Holland, they find that significant, policy-induced reductions in local pollution have not had ancillary benefits in terms of GHG reductions, presumably because abatement investments delivered targeted reductions in regulated pollutants. These

⁵⁴⁸ Companion policies, such as the renewable portfolio standard, are expected to deliver the majority of GHG emissions reductions. CARB estimates that cap-and-trade will deliver less than 30% of mandated GHG emissions reductions by 2020. See [CARBs Climate Change Scoping Plan](#)

findings highlight the possibility that historic correlations in local and global emissions trends can be misleading indicators of how a policy-induced change in one form of pollution will affect the other.

A recent paper by Cushing et al (2018) examines temporal patterns in local pollutants, toxics, and global pollutants emitted from point sources regulated under California's GHG emissions trading program. These authors compare emissions levels prior to the policy (2011-2012) and the three years following the introduction of the policy (2013-2015). The study finds that, variation in GHG and local pollutant emissions were positively correlated over this time period. Notably, 52% of facilities regulated under the GHG emissions trading program increased emissions in the post-policy period relative to 2011-2012. The authors estimate find that emissions increases between these two time periods were disproportionately located in low income and minority neighborhoods.

The findings of Cushing et al. are concerning but not dispositive. One complication lies in the inter-temporal comparison that these authors construct. Comparisons across these two time periods confound the effects of the GHG cap and trade program with some other significant determinants of local pollution and GHG emissions. For example:

- 1) Over the period 2013-2015, in addition to implementing the GHG emissions trading program, California (and the rest of the country) was recovering from the recession. With economic recovery comes an increase in industrial production and associate emissions.

- 2) In the electricity sector, the closure of the San Onofre nuclear power plant in 2012. This major shut down induced a significant increase in output among fossil fuel generation in the state. It is estimated that the nuclear plant closure increased greenhouse gas emissions from power plants in California by 35%.

In order to isolate the effect of the GHG cap-and-trade program on the distribution of emissions over this time period, additional work is needed to control for these and other factors.

A second concern pertains to the sensitivity of the results to the chosen time period. Cushing et al. report: "Since California's cap-and-trade program began, neighborhoods that experienced increases in annual GHGs and co-pollutant emissions from facilities nearby had higher proportions of people of color and poor." However, subsequent research looking into this question has found that the answer is sensitive to how the comparison is constructed. For example, Meng (2018) finds no significant difference in average GHG emissions trends over the period 2012-2015 across disadvantaged and non-disadvantaged communities. If anything, emissions trajectories over this period suggest the emissions gap is narrowing.

In sum, the empirical evidence on the cross-effects of local and global pollution regulations is mixed. It is not our role to debate the merits of these aforementioned

studies. Instead, we advise the legislature and staff to monitor and analyze the distribution of emissions impacts associated with California's GHG emissions trading program, in addition to other policies...

D. Monitoring impacts of GHG emissions regulations on local air quality

While climate is the focus of this committee, it is important to recognize the air quality impacts on vulnerable communities of climate regulations. To that end, the 2017 Scoping Plan includes a strong acknowledgement that climate action can only be considered fair and equitable when inequities across communities are addressed.

The passage and subsequent implementation of AB 197 and AB 617 provides an opportunity for the agency and the state to demonstrate the priorities of local air quality coupled with climate and the prevention or mitigation of unintended consequences. Coupled with the last update to the CalEnviro Screen, a tool that aides the state in identifying hot spots in communities across the state for investment and encourages collaborative action with local communities. This is especially relevant to identified neighborhoods where local air districts are tasked with addressing toxic and local criteria pollutants that are known to exacerbate poor health outcomes. With the support and backing of the Board, increased local monitoring and real-time data collection, fair and equitable action on climate and air quality can be catalyzed throughout the state.

The IEMAC committee had the opportunity to meet with environmental justice advocates to discuss, among other issues, the intent and potential of AB 617. Their assessment is that the AB 617 process is extremely new and under development. EJ advocates correctly note that many of the key pillars and programs of AB 617 have yet to be defined. Important concerns were raised about enforcement protocols for air districts. Thus, while the policy constitutes a promising first step, we cannot safely assume that it will sufficiently address environmental justice issues. Although there is real potential, it is far from clear that AB 617 will indeed provide the robust changes necessary to how the state addresses local criteria pollutants. We agree with this assessment.

In order to be successful, implementation of AB 617 will require consistent and adequate funding from the Legislature, and sufficient and dedicated staff. Workshops are being convened throughout the state to engage communities on best practices and planning. Efforts to develop relationships with local leaders that will lead to truly identifying the sources of concerns are ongoing.

There is a critical trust gap that must be overcome if this program development process is to be successful. Given the striking inequities in exposure to harmful local air pollution, environmental justice communities may have low expectations and/or anticipate minimal attention and effort from the agency. This committee recommends that staff continue to have robust engagement with community leaders, ensuring information materials are culturally relevant, and maintain transparency of timelines, goals, and information. We furthermore recommend that communities that have not

been included in the first round of implementation continue to be engaged. For example, Richmond was not prioritized in the first round, but given its proximity to a major oil refinery, should be considered for the second round of implementation.

While AB 617 presents a potentially significant step forward in addressing the social needs that run parallel to air quality challenges, understandable skepticism remains. Agencies must earn trust and demonstrate meaningful progress by investing substantively in substantive environmental quality improvements, particularly in communities impacted disproportionately by adverse public health outcomes related to local air quality conditions and other environmental factors such as transportation, proximity to ports, and freight goods movement...

1) We encourage the legislature and staff to monitor and analyze the distribution of emissions impacts associated with California's GHG emissions trading program, in addition to other policies. (IEMAC)

Comment:

...I want to thank my colleagues for expanding the coverage of their subcommittee report to include technical matters related to the relationship between greenhouse gas emissions, local air pollutants, and the distributional consequences of state energy, climate, and environmental policy—all important issues that are relevant to environmental justice communities and state policymakers alike. I believe the IEMAC is well suited to analyze these kinds of issues and welcome the subcommittee's engagement here. (IEMAC – Cullenward Appendix)

Response: The commenters request that CARB analyze the distribution of emissions impacts, relating to GHG emissions and local pollutant emissions. These topics are discussed in Responses to 45-Day Comments B-1.7 on local air pollution and 45-Day Comments B-1.3 on modeling and analysis and AB 197.

Disadvantaged Community Investments

K-1.8. Comment:

E. Investing in EJ Communities

California climate change policy includes a number of programs designed to mitigate the impacts of California climate policies on low income households. Programs include:

1) the provision of climate credits directly to households; 2) climate investments and other efficiency, fuel switching, and vehicle mile reducing programs and policies that help households lower their expenditures on electricity, natural gas and gasoline; and 3) low-income rate assistance programs, which although unrelated to the Cap-and-Trade Program, can reduce households' budgetary burden associated with electricity and natural gas consumption. Because the latter two types of measures can lower energy and gasoline bills, they indirectly help to lower any Cap-and-Trade compliance cost passed on to customers.

A 2016 study conducted by the UCLA Luskin Center estimated that low income households would receive more in climate credits than they would pay in Cap-and-Trade associated costs as electricity consumers (Gattaciecceca et al. 2016). In other words, low-income households could receive a positive financial impact of between \$215 and \$246 cumulatively, from 2016 through 2020, associated with the Cap-and-Trade Program.

In addition to climate credits, it is estimated that over half of the \$2 billion in implemented projects (\$1 billion) is providing benefits to disadvantaged communities, including 31 percent (\$615 million) going to projects located within these communities. This exceeds the requirement under SB 535 (De León) that at least 25 percent of investments are allocated to projects that benefit disadvantaged communities. In 2016, Governor Brown signed AB 1550 establishing new investment minimums for disadvantaged communities, and low-income communities and households. In addition to subsidizing the cost of critical mitigation projects, additional programs designed to reduce the financial pressure on low-income communities due to increase in energy costs are also supported by investments from the revenue in the cap and trade program.

As noted above, the GHG cap-and-trade program provides an essential means of raising revenues to support promising climate change mitigation investments, and to offset inequalities (pre-existing or policy induced). We encourage CARB and the Legislature to continue working together to prioritize promising investments in disadvantaged EJ communities...

3) We underscore the importance of investing substantively in critical environmental quality improvements in EJ communities via AB 617 and related regulations.

4) We encourage CARB to work with the Legislature to broaden opportunities for meaningful mitigation investments in disadvantaged communities throughout the state. (IEMAC)

Response: The commenter discusses ways that low-income households currently benefit from Cap-and-Trade Program proceeds and other programs and encourages continuing and further investments via AB 617, related regulations, and mitigation activities. CARB thanks the commenter for the support. The expenditure of Greenhouse Gas Reduction Funds is overseen by other processes, including legislation, and is not covered by the Cap-and-Trade Regulation. Nevertheless, these topics are further discussed in Response to 45-Day Comments K-1.4 and B-1.7. Electric and gas utilities' use of proceeds from allowances allocated to them is discussed in 45-Day Section C-3, with Response to 45-Day Comments C-3.4 discussing a request for the use to focus on disadvantaged and low-income communities. The other aspects of this comment are outside the scope of these amendments.

Electrification Measures

K-1.9. Comment:

Additional Cost Containment Actions: SMUD reiterates recommendations that CARB should continue to develop and consider policies that decrease the demand for allowances, such as electrification, and policies that provide supply flexibility when needed in order to foster stable market prices at levels below the price ceiling. The best market structure is one where the price ceiling influences the market by providing political certainty to help drive abatement but is never reached (not because it is set high, but because abatement actions flourish and keep prices below the ceiling). SMUD suggests that it is appropriate for CARB to consider structural changes including:

- Additional electrification measures to reduce demand for allowances... (SMUD)

Response: This comment is outside the scope of the proposed amendments. CARB agrees that electrification is among the necessary tools for reducing GHG emissions in the long term, but this type of prescription is not within the scope of the Cap-and-Trade Regulation. Insofar as it reduces GHG emissions, benefits customers and meets other Regulatory requirements, utilities may opt to use the value of their allocated allowances to support electrification.

Reducing California Fossil Fuel Production

K-1.10. Comment:

Finally, we recommend CARB identify a clear process to identify possible mechanisms to reduce fossil fuel production in California to achieve our 2030 and 2050 GHG reduction targets. When it adopted the 2030 Scoping Plan, CARB also resolved to “continue to evaluate and explore opportunities to achieve significant cuts in greenhouse gas emissions from all sources, including supply-side opportunities to reduce production of energy sources.” CARB has yet to clearly outline what such a process will entail, but this will be a critical step to ensuring that our state has the needed policies in place to meet our 2030 and 2050 GHG reduction goals. (CEJA)

Response: This comment is outside the scope of the proposed amendments. However, CARB recognizes the importance of reducing fossil fuel use in California. The transportation sector comprises half of California’s GHG emissions. Successful implementation of the 2017 Scoping Plan is estimated to reduce on-road fuel demand by 45% by 2030, and reduce GHG emissions for the sector by roughly 30% in 2030 from 1990 levels. CARB’s numerous programs to address transportation sector emissions include the Mobile Source Strategy, Advanced Clean Cars Regulations, Clean Vehicle Rebate Program, Sustainable Freight Action Plan, Low Carbon Fuel Standard, Cap-and-Trade Regulation, and Oil and Gas Regulation.

These programs reduce GHG emissions, transform and diversify the fuel mix, reduce petroleum dependency, and reduce emissions of criteria pollutants and toxics. The Low Carbon Fuel Standard has achieved a 3.5% reduction in carbon intensity of transportation fuels so far, and will achieve a 20% reduction by 2030. The Cap-and Trade Program covers transportation fuels and process and combustion emissions at refineries and oil and gas production operations, driving onsite emissions reductions and incentivizing cleaner fuels investments and more efficient energy use. CARB estimates the Oil and Gas Regulation generates continuing reductions of more than 1.4 million MTCO_{2e} per year, representing a methane reduction from this sector of over 40% by 2021, with associated co-benefits of reducing toxic and volatile organic compound (VOC) emissions.

California has also invested significantly in low carbon transportation through consumer rebates for zero-emission vehicles (ZEV), transportation equity projects to increase access, and clean truck and bus vouchers for hybrid, zero-emission, low NO_x technologies. Almost \$600 million has been invested in demonstrations and early commercial pilots for clean engines and facilities, including a zero-emission drayage truck demonstration project, zero- and near zero-emission freight facilities, zero-emission truck and bus pilot commercial deployment projects, and the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project. California is home to nearly 50 percent of ZEV and 40 percent of clean fuel investments and 90 percent of U.S. total investments in clean transportation infrastructure.

Nevertheless, CARB recognizes that the current state-level policies may not be sufficient to address the transportation sector's GHG emissions. From 2014 to 2016, emissions from the sector – specifically from gasoline used in on-road vehicles – increased four percent. CARB Board Resolution 17-46 directed CARB staff to evaluate and explore opportunities to achieve significant cuts in GHG emissions from all sources, including supply-side opportunities to reduce production of energy sources. Governor Brown has also provided direction to explore new regulatory actions to accelerate inclusion of zero emission vehicles in public and private light- and heavy-duty vehicle fleets. In response, CARB is considering options to expand and accelerate efforts to reduce transportation fuel use and emissions. CARB held three public workshops on these topics in August and December 2018. These workshops provided a forum for experts to discuss additional options to further expedite efforts to reduce GHG emissions from California's production and combustion of petroleum transportation fuels and explored additional mechanisms to reduce emissions from this sector on the fuel supply side and demand side through increasing the volume of zero emissions vehicles.

Maintaining Transportation Sector Emission Reductions

K-1.11. Comment:

- Evaluate alternative methods to reduce emissions in the transportation sector if the state cannot implement its tailpipe and ZEV standards...

In some cases, it appears that an allowance price that could practically be achieved – even without overlapping policies – would be insufficient to incentivize the necessary emissions reductions in the short run or the investment in infrastructure and innovation that is necessary in the long run. In this case, government regulation may have a special role in coordinating these transformations. This seems especially true in the transportation sector, where allowance prices in cap-and-trade may be insufficient to direct the changes necessary to achieve large emissions cuts in the sector.

California enforces its vehicle mandates under a waiver granted by the US Environmental Protection Agency (EPA). The EPA is currently proposing to revoke California's waiver to issue GHG standards for passenger automobiles and for its ZEV program. The ARB Scoping Plan for 2017 considers the possibility that the federal government will attempt to limit California's authority to issue tailpipe standards. If the federal effort succeeds in either delaying the implementation of the standards or blocking them all together, the Scoping Plan calls for achieving emissions reductions from the same sector. However, it will be a challenge for California to do so if the federal government succeeds in either delaying or forestalling vehicle emissions standards for 2021-2025 altogether. Additionally, under the Clean Air Act, California will need to get federal permission (a waiver) to issue standards for 2025 and beyond. Although California has a strong legal case that it can continue to impose its 2021-2025 standards for passenger automobiles and require compliance with its ZEV program, no legal case is without uncertainty. And transportation is the largest source of GHGs in the state and the sector showing increases, rather than decreases, in emissions in recent inventories...

2) We ask CARB to evaluate alternative methods to reduce emissions in the transportation sector if the state cannot implement its tailpipe and ZEV standards.

We list below several possibilities, none of which we have examined in detail. We recommend that ARB consider these possibilities.

- a. Consumption based pricing of vehicle miles traveled;
- b. Increase in tax subsidies or direct subsidies for EV purchases;
- c. Feebates associated with vehicles according to technology characteristics;
- d. Additional housing and land use standards to reduce vehicle miles traveled;
- e. Regulations or limitations on extraction of fossil fuel resources;

f. State fleet mandates, and incentives for corporate and local government fleet conversions;

g. Carbon intensity of vehicles manufacturing modeled after the Low Carbon Fuel Standard but focused on automobiles rather than fuels...

[Sections h. and i. address policy overlap more generally and are included and responded to above.] (IEMAC)

Response: This comment does not propose any changes to the proposed amendments, and is therefore outside the scope of the proposed amendments. Notwithstanding this, see Response to 45-Day Comment K-1.10.

Cap-and-Trade and Minimizing Overlapping Policies

K-1.12. Comment:

1. CAP AND TRADE IN THE POLICY MIX

IETA encourages using the cap and trade program as a “workhorse” rather than a “backstop” for meeting the state’s ambitious climate goals. Overlapping policies impose a greater burden on regulated entities, in terms of costs per ton of abated carbon emissions, than the cap and trade program, which delivers climate goals at least cost. The overuse of overlapping policies unnecessarily reduces demand for allowances and the resultant dampening of allowance prices creates a cycle of dependency that “requires yet more regulation to achieve long-term emissions goals”.⁵⁴⁹ This unfortunate dynamic persists because cap and trade communicates underlying costs by way of a price signal, while overlapping policies masks underlying costs.

IETA therefore emphasizes the importance of answering the following two questions posed by the Chair of the Independent Emissions Market Advisory Committee (IEMAC), Dallas Burtraw, and a Member of the IEMAC, Ann Carlson, in their recently posted report: (1) are there estimates of the [abatement] cost of various overlapping policies, and (2) are there estimates about the degree to which overlapping policies put downward pressure on allowance prices? We urge CARB to estimate (and do so frequently) the abatement achieved by overlapping policies at entities regulated by the cap and trade program as well as the cost of abatement for those overlapping policies. Further transparency is needed to begin understanding the interaction between overlapping policies and the cap and trade program, including implications for allowance prices and overall compliance costs.

IETA understands that it is unlikely for significant changes to be made to California’s current climate policy mix in response to this specific set of proposed amendments. We need to highlight that California continues to increase the assertiveness of its climate

⁵⁴⁹ Burtraw, Dallas, and Carlson, Ann. 2018. “Subcommittee Report on Overlapping Policies”. Report for the Independent Emissions Market Advisory Committee. Released on 18 September 2018. Available [here](#).

goals and underline that there is increasing need for future restraint from the overuse of overlapping policies, which will better serve to ensure a rational and robust pathway to achieving these goals at least cost. (IETA)

Response: CARB staff did not propose modifications to other regulations as part of this rulemaking. As such, the request to rely less on overlapping policies is outside the scope of the proposed amendments. Notwithstanding this, see Responses to 45-Day Comments B-1.2, B-1.3, and K-1.2 for a discussion of the importance of complementary policies to achieving California's emission reduction targets, especially in light of the latest report from the IPCC. For more regarding CARB's analyses, see Responses to 45-Day Comments B-1.3 and C-1.5.

Entity Reporting on Policy Overlap

K-1.13. Comment:

Overlapping Policies

- We support the assertion by others that there are regulatory policies that overlap with the cap-and-trade program by targeting the same regulated entity more than once. Regulatory policies dictate how reductions must be met while cap-and-trade does not. How an entity meets their emissions allocation is up to them and, therefore, this does not restrict reductions from a regulatory policy being used to meet cap-and-trade obligations and result in double-counting, reducing the demand for allowances, lowering allowance prices, and affecting the ability for California to meet its reduction targets. For example:
 - If regulatory policies also target 20% of AB32 covered source emissions, this could lead to both programs incorrectly reporting success in meeting their annual reduction goals. Total reductions required from both cap-and-trade and regulatory programs to meet California's 2030 goal are 1.72b tonnes (32% (620m tonnes) from cap-and-trade and 68% (1.1b tonnes) from regulatory policies). If both sides report meeting their 2030 goals, 220m tonnes (1.1bx 20%) could be double counted.
- We recommend CARB consider requiring compliance entities to include the volume of reductions that resulted from their compliance with regulatory policies to start understanding the impact of overlapping policies...

SUBCOMMITTEE REPORT ON OVERLAPPING POLICIES

1. We support the recommendation that there are policies that overlap with the cap-and-trade program by targeting the same regulated entity more than once.
2. We support the conclusion that this overlap can lead to an oversupply of allowances that may dampen prices in the cap-and-trade market.

3. We also suggest that the overlapping policies affect the ability for CA to meet its reduction targets.

a. For example: Total reductions required to meet 2030 goal are 620m tonnes (38%) from cap-and-trade and 1.1b tonnes (68%) from regulatory policies. Assuming both programs meet their goals but 20% ($1.1b \times 0.20 = 220m$) of the regulatory policy reductions comes from cap-and-trade covered sources, this reduces cap-and-trade's net contribution to 400m ($620m - 220m$) even though it will be recorded as a 620m reduction.

4. Regulatory policies dictate how reductions must be met while cap-and-trade does not. How an entity meets their emissions allocation is up to them and, therefore, this does not restrict reductions from a regulatory policy being used to meet cap-and-trade obligations and result in double-counting.

5. We recommend CARB consider requiring compliance entities to report their GHG reductions resulting from compliance with regulatory policies other than cap-and-trade. (DENTONS)

Response: This comment is outside the scope of the proposed amendments. GHG reporting is covered by the Mandated Reporting Regulation, which is concurrently being amended but also does not include the commenter's request in the scope of its amendments. In addition, and contrary to the commenter's concerns, GHG reporting under MRR also informs the State's GHG Inventory, which ensures that there is no double counting of GHG emissions or GHG emission reductions. As such, there is no need for the requested changes, even if they were in the scope of the amendments.

Assessing Policy Overlap and Price Impacts

K-1.14. Comment:

- Identify the potential that overlapping or companion policies may reduce allowance prices and examine remedies if this is a problem...

Chapter 2: Overlapping Policies

Authors: Dallas Burtraw and Ann Carlson

A. Context

California's cap-and-trade program to reduce greenhouse gases is a highly visible piece of the state's portfolio of climate policies. However, it is only one element of the state's program to reduce greenhouse gases to meet its 2030 target. The state has adopted a number of additional policies, including a stringent Renewable Portfolio Standard, land use measures to reduce vehicle miles traveled, a Low Carbon Fuel Standard, and greenhouse gas emissions standards for various categories of vehicles. The 2017 Scoping Plan adopted by the Air Resources Board, in fact, identifies regulatory

measures that are designed to achieve a majority of the emissions reductions required by statute. The cap-and-trade program is, nevertheless, an extremely important part of the program. It serves a number of valuable functions. These include

- 1) introducing greater cost effectiveness by making sure that low cost opportunities for emissions reductions are captured;
- 2) ensuring, through the cap, that the overall statutory emissions goals are achieved;
- 3) providing a signal to innovators about the value of low-carbon investments.

B. Key considerations

Though California's suite of regulatory policies is impressive and responsible for a significant portion of GHG emissions, one issue they raise is that these policies may overlap with the cap-and-trade program by targeting the same regulated entity more than once. By adopting overlapping policies, the state may create effects that are not always fully transparent or that can undermine the goals of the policies. For example, overlapping policies may dampen prices in the cap-and-trade market. These price-dampening effects can, in turn, reduce incentives for technological innovation. Overlapping policies also tend to (though not always) mask their cost and may be more expensive per ton reduction of GHGs than a less fettered cap-and-trade program. Overlapping policies can also produce many benefits, some of which we also highlight. Our focus in our subcommittee report is on these policies and their interaction with the allowance market.

C. Case studies and public comments

1. Overlapping policies

Many policies that overlap with cap and trade are initiated by other agencies in local, state and federal government. Examples of policies that overlap with the cap-and-trade program include:

- 1) The Low Carbon Fuel Standard (LCFS) regulates the full life cycle of transportation fuels. This includes their production, transport, and combustion. The cap-and-trade program includes petroleum transport fuels and natural gas, though is not based on life cycle emissions but instead only combustion. Compliance for one program can achieve compliance for the other if the compliance for one program reduces the required amount of reduction for the regulated entity under the other program; whether the LCFS or the cap-and-trade program requires the compliance depends on individual circumstances (Controlling Greenhouse Gas Emissions from Transport Fuels: The Performance and Prospect of California's Low Carbon Fuel Standard). Even though LCFS allowance prices are significantly higher than allowance prices under cap-and-trade, the interactive effects of the program vary depending on factors like the

carbon intensity of a particular fuel. As Parson, et al. explain, a fuel like fossil CNG, which has a relatively low carbon intensity, receives credits under the LCFS but must surrender allowances under cap-and-trade. By contrast, some high-intensity fuels achieve their compliance through purchasing LCFS allowances, not through cap-and-trade.

2) The Renewables Portfolio Standard (RPS) requires the state's electric utilities to achieve a set percentage of their energy from defined renewable sources such as wind and solar. The percentage has increased over time, so that by 2030 the state's utilities must achieve 60 percent of their energy from defined renewable sources. The state's utilities (both investor-owned and publicly-owned) are also subject to the cap-and-trade program. The RPS in effect directs the utilities how to achieve the majority of their emissions cuts – by procuring energy from renewable sources and is expected to have additional costs to the state even as it advances the integration of renewable energy technology into the electricity system. If the RPS did not exist, utilities could instead meet their cuts under the cap-and-trade program by choosing how they would comply. Other programs that operate similarly include energy efficiency standards and mandates for the procurement of battery storage. Each of these have their own long-run justifications, but each may introduce additional costs in the short-run compared to cap and trade (though energy efficiency may be cheaper in the short-run).

3) The Zero Emission Vehicle (ZEV) and GHG mobile source standards. Expanded electrification and energy efficiency in transportation will yield reductions over the next decade. Although car manufacturers are not subject to the cap-and-trade program, as described above, fuels are [sic].

2. Issues Raised by Interactive Effects of Cap-and-Trade, Complementary Policies

The overlap of the cap-and-trade program with other regulatory measures could be mutually reinforcing or could undermine the incentives or cost effectiveness of each of the approaches. Overlapping and companion policies have many and varied justifications, including importantly the attainment of ancillary environmental benefits and especially environmental improvements in disadvantaged communities. For example, the RPS, with its requirement that utilities procure renewable energy, lowers air pollutants to the degree that renewable resources displace dirtier energy sources like natural gas. Other justifications include promoting targeted technological change and building infrastructure. For example, the RPS may have helped stimulate technological innovation and driven down procurement costs for renewable projects.

The policies that directly regulate emissions from sources that are also covered by the cap-and-trade program, however, can be expected to put downward pressure on the cap-and-trade allowance price. That is because when policies direct how emissions will be reduced (through, for example, mandating that utilities procure a set amount of renewable energy), there are fewer emissions to be reduced in the cap-and-trade

market (even though the lower emissions resulting from the RPS help utilities achieve compliance). A lower price in the market has advantages, such as protecting California industry, but that lower price masks what are in some cases higher costs for these industries if the cost of meeting the RPS, for example, is higher than the cost of cutting emissions through other means. Another disadvantage of a lower allowance price is that it lessens the economic signal from the cap-and-trade program that influences investments by industry, businesses and households and therefore opportunities for technological innovation. As climate goals become increasingly ambitious, most economists advocate for an increasing role for pricing. However, a declining price that results from an abundance of overlapping policies undermines confidence in the market and expectations about a price signal, creating a cycle that requires yet more regulation to achieve long-run emissions reduction goals...

3. Public Comments

We highlight two comments received by the committee. These comments have not been evaluated by the full committee.

1) AB 32 requires the state to account for emissions associated with imported power. In doing so, the state applies a protocol to identify or assign an emissions rate to imported power. Entities that deliver imported power to the California grid are responsible for surrendering emissions allowances commensurate with the embodied emissions of that power. Consequently, relatively low-emitting power may be preferentially directed to the California market. The same power may have created renewable energy credits that are used for compliance in a renewable portfolio program in California or another state. If the California power market is valuing the power because it is clean, then the renewable credits might be double counting that attribute in other programs. Conversely, the renewable credits might be lowering the price of renewable power that is made available to the California energy market. Among suggestions shared with the committee was the idea that renewable power that is imported to California be identified as a zero-emissions import in WREGIS, so that other programs can consider the influence of the overlapping policies.

2) One comment suggested that compliance entities report the greenhouse gas emissions reductions that are achieved from overlapping regulatory programs. This reporting protocol may have merit, but it may lead to ambiguous assignment of emissions reductions across programs. We invite ARB to consider the possibility further.

D. Recommendations for cap-and-trade regulatory amendments

We do not see opportunities to address overlapping policies in the short-run context. We have suggestions for analysis that could be important to the direction of the program in the long run.

E. Recommendations for longer-term implementation

Overlapping policies raise a number of issues that could benefit from additional analysis and consideration.

1) Identify the potential that overlapping or companion policies may reduce allowance prices and examine remedies if this is a problem.

We believe it would be beneficial to have more analysis about the price effects of having policies that overlap with cap and trade. First, on a per ton of GHG reduction, are there estimates of the cost of various overlapping policies like the RPS, energy efficiency and car standards? And are there estimates about the degree to which overlapping policies put downward pressure on cap-and-trade allowance prices? If the downward pressure is significant, there are design choices for the cap-and-trade market that can alleviate this pressure. For example, the existing price floor provides assurance of a minimum value of investments in compliance. But there may be opportunities to supplement the price floor with additional measures, such as additional emissions/price containment points or other adjustments to allowance supply when companion policies have their desired effect. Relatedly, there may be opportunities to align price-based policies like the RPS and the LCFS with the cap-and-trade program provides cost and price management in a complementary way across these programs. We recommend that ARB consider these possibilities and opportunities...

h. We encourage ARB and other state agencies to look for opportunities to infuse incentives in regulatory policies that overlap with the cap-and-trade program. We also encourage ARB to look for ways of aligning these efforts to improve cost effectiveness. An example might be linked cost containment.

i. Without providing guidance about how to do so, the committee urges state agencies including the ARB to rigorously evaluate companion policies to identify their motivation such as market failures, technological or infrastructure development, or research. This effort will help ARB to assess the influence these programs may have or are intended to have on the cap-and-trade program.

F. Conclusion

Policies that overlap with the cap-and-trade program affect the performance of the program. This committee advises that ARB and other state agencies be proactive in understanding how that interaction will affect the market as well as how the market might affect the performance of the overlapping policies. (IEMAC)

Response: This comment proposes additional analysis beyond the scope of the proposed amendments. CARB staff take related policies such as the Renewable Portfolio Standard and Low-Carbon Fuel Standard into account when proposing Cap-and-Trade Regulation amendments and implementing the Program, and will take into account the commenter's encouragement in this direction. Regarding coordination with other agencies, per the requirements of AB 32, CARB staff consulted with the Public Utilities Commission regarding the adopted

amendments. Staff also regularly consults with other agencies, such as the California Energy Commission and CALFIRE, on topics relevant to their jurisdiction. Current and future analyses conducted by CARB and reports on publicly available information are discussed in Responses to 45-Day Comments B-1.3 and L-1.1. Regarding renewable power accounting, see Response to 45-Day Comment E-2.2. CARB encourages the commenter and others to continue to engage with CARB regarding what types of analyses they believe will prove most useful in guiding regulatory development.

Incentive Programs

K-1.15. Comment:

And then from the cap adjustment factor, we realize that there are adjustments being made and we constantly have to improve our process.

And to that end, we support the incentive programs that the Air Resources Board has been instrumental in putting forward with these cap-and-trade funds, through the Energy Commission, through agricultural assistance, through the California Department of Food and Ag with the FARMER program, the SWEEP program.

These incentive programs we're very much in favor of. I'll conclude with that.
(BOSWELL)

Response: Thank you for the support.

Low Carbon Fuel Standard

K-1.16. Comment:

b. CARB should adopt a LCFS carbon intensity target significantly higher than the proposed 18%

The Low-Carbon Fuel Standard (LCFS) must set a more ambitious carbon intensity target than the 18% reduction indicated in the Staff Presentation related to the LCFS Draft Regulatory Text.⁵⁵⁰ Existing evidence suggests there are likely to be ample supplies of fuel to support carbon intensity (CI) reduction targets well above 18%. Several independent research groups including the International Council on Clean Transportation,⁵⁵¹ ICF International,^{552, 553} Promotum,⁵⁵⁴ and CARB itself⁵⁵⁵ have evaluated low-carbon fuel supply and concluded that ample supply exists to support significant substitution of low-carbon alternatives for gasoline and diesel through 2030.

⁵⁵⁰ https://www.arb.ca.gov/fuels/lcfs/lcfs_meetings/092217workshop_presentation.pdf Slide 19

⁵⁵¹ <http://www.theicct.org/potential-low-carbon-fuel-supply-pacific-coast-region-north-america> NextGen funded and contributed to this report.

⁵⁵² <http://www.ucsusa.org/clean-vehicles/california-and-western-states/west-coast-oil>

⁵⁵³ <http://www.caletc.com/wp-content/uploads/2016/08/Final-Report-Cap-and-Trade-LCFS.pdf>

⁵⁵⁴ <https://www.nrdc.org/file/2547/download>

⁵⁵⁵ https://www.arb.ca.gov/newsrel/petroleum_reductions.pdf

A higher CI reduction target would directly reduce emissions by substituting lower-carbon options for high-carbon petroleum fuels, thereby mitigating some of the strain on the cap and trade system. In addition, the proposed LCFS amendments include new provisions relating to Refinery Investment Credits, Renewable Hydrogen Production, Co-Processing and Innovative Crude Production, these provisions incentivize efficiency improvements in the petroleum production and refining process that significantly reduce GHG and air pollutant emissions. The pollution reductions incentivized by these provisions could achieve many of the stationary-source pollution reduction goals set forth in AB 197.

Prior to AB 398, it was intended that the Refinery Rule would achieve the intended reductions from refineries. CARB now lacks the authority to implement the Refinery Rule, but the LCFS program can create a strong incentive for significant reductions in air pollutant emissions from refineries through the Refinery Investment Credit, Renewable Hydrogen Credit, Co-Processing and Innovative Crude provisions in the LCFS. Increasing the CI target strengthens the incentive for refiners to make these investments by sending a strong market signal and maximizing the value of LCFS credits generated by these projects. (NEXTGEN)

Response: This comment deals with provisions to the Low Carbon Fuel Standard and is therefore outside the scope of the proposed amendments. No response is required.

L. PUBLIC PROCESS AND INFORMATION DISCLOSURE

L-1. Process and Timing

Additional Analysis

L-1.1. Comment:

The IEMAC recommends that CARB perform additional analysis or collect additional information to cast light on potential problem areas identified by the subcommittees. In some cases, this information may exist and we welcome direction to that information; in other cases, there may be opportunities to improve existing information or to develop new analysis. In some cases, the IEMAC suggests revisions to the draft cap-and-trade regulations CARB issued on September 4, 2018. (IEMAC)

Response: This specific comment does not propose any changes to the amendments in this rulemaking and is therefore outside the scope of the proposed amendments. CARB's analyses, including the AB 398-required report, are discussed in Responses to 45-Day Comments B-1.3 and C-1.5. With respect to requests for additional information, CARB staff continues to assess other types of information that might be helpful to release, while balancing the need to protect confidential information. The comment includes reference to revisions that were raised in other portions of the commenter's report. Those

portions, as well as responses, are included in the relevant sections of this FSOR.

Leakage Prevention

L-1.2. Comment:

D. Recommendations

We make several recommendations with regard to the monitoring and mitigation of emissions leakage [regarding industrial and electricity emissions] in the context of its cap-and-trade program:...

3) **Evidence-based decision making.** Rigorous empirical assessments of leakage risk are complicated by data limitations and identification challenges, as discussed in this subcommittee report. To date, these complications have limited the extent to which commissioned research informs California's approach to leakage mitigation. The subcommittee notes that the current abundance of caution has potentially important implications for abatement costs and the distribution of those costs. Methodological challenges notwithstanding, CARB should continue to work with the research community to strengthen the link between empirical evidence on leakage risk and the calibration of compensating subsidies. (IEMAC)

Response: This comment is outside the scope of the current rulemaking. CARB is required by AB 32 to minimize leakage to the extent possible and will continue to monitor and address leakage using the most appropriate data and methods. As indicated in Responses to 45-Day Comments B-1.3 and C-1.5, AB 398 requires CARB to report to the Legislature, by December 31, 2025, on the progress toward meeting the greenhouse gas emissions reduction targets established pursuant to AB 32 and SB 32 and the leakage risk posed by the Regulation. In making this report, AB 398 requires CARB to include recommendations to the Legislature on necessary statutory changes to the Program to reduce leakage.

Compliance Instrument Data Disclosure

L-1.3. Comment:

1) **Improve and increase program reporting.** Current program data reporting is helpful, but incomplete. We recommend CARB increase transparency by:

a) Reporting allowance holdings by jurisdictional type (i.e., distinguishing between allowance holdings from California, Quebec, and Ontario in quarterly compliance instrument reports).

b) Reporting the number, vintage, and jurisdictional totals of allowances that are banked at the end of each three-year compliance period.

c) Developing a metric that tracks the bank of compliance instruments on an annual basis, not just at the end of three-year compliance periods (e.g., as developed by Inman et al., 2018c).

d) Reporting public data on secondary spot market prices (e.g., weekly averages), as is done for other key climate programs such as the Low Carbon Fuel Standard. (IEMAC)

Response: The comments are outside the scope of the current rulemaking. However, CARB has developed and published expansions to its existing reports on compliance instruments holdings and transfers of compliance instruments between accounts that address the request. See Response to 45-Day Comment B-1.3 for further discussion on the analyses and information released by CARB staff.

Environmental Analysis Topics

L-1.4. Comment:

5. The environmental review alternatives analysis should assess the impacts of surplus credits and the 2018-2020 assistance factors for refineries.

In previous comments, the Center recommended that the alternatives analysis in the EA include an assessment of the potential reductions achieved if a 75% (and lower) Industry Assistance Factor were applied to petroleum refining for the 2018-2020 period, with respect to the emissions from that sector over that period and subsequently through 2030. The Center also recommended that the EA include an alternatives assessment of the impacts of sunseting allowances banked before 2020, with its implications for new, on-site reductions in the years after 2020.

The alternatives analysis provided in the draft EA for the proposed amendments contains neither of these alternatives, even though they would feasibly attain most of the objectives; nor did the EA explain why it was not analyzing them. On the other hand, the EA includes clearly infeasible alternatives, such as an alternative that would exclude DEBS requirements (Alternative 6), even though it obviously fails to comply with the requirements of AB 398. The Center recommends that the EA analyze a scenario in which surplus credits are retired and CARB provides lower 2018-2020 assistance factors for refineries—an alternative clearly more feasible than several of the ones it did analyze. (CENTERBIODIV)

Response: With regard to the suggested alternative and project design changes, as explained in more detail on page 93 of the Draft Environmental Analysis (EA), while CARB, by virtue of its certified program, is exempt from Chapters 3 and 4 of CEQA and corresponding sections of the CEQA Guidelines (Cal. Code Regs., tit. 14, § 15000 et. seq.), the Guidelines nevertheless provide useful information for preparation of a thorough and meaningful alternatives analysis. The Guidelines specify that “[a]n EIR need not consider every

conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation.” (Cal. Code Regs., tit. 14, § 15126.6(a).) An EIR need not consider multiple variations of alternatives, nor must it consider alternatives to components of the project; rather, it should focus on alternatives to the project as a whole. (See Cal. Code Regs., tit. 14, § 15126.6(a).)

With regard to the comments proposing sunsets to surplus allowances, the allowance caps are set to help the state achieve its statutory mandates. CARB notes that the 2016 Edition of the Greenhouse Gas Inventory demonstrates the state has achieved emissions below the 1990 level 4 years earlier than mandated by AB 32. Having emissions below the allowance caps and reducing emissions to meet statutory mandates is a desirable outcome. AB 398 contains a specific provision directing the California Air Resources Board (CARB or Board), in adopting a post-2020 Cap-and-Trade Program, to evaluate and address concerns related to overallocation in the state board’s determination of the number of available allowances for years 2021 to 2030, inclusive, as appropriate. (Health & Safety Code § 38562(c)(2)(D).)

In response to the direction in AB 398, staff focused on whether the allowance budgets (caps) established from 2021 through 2030 need to be adjusted to account for any unused allowances from 2013 through 2020. Concerns have been raised about the possibility that the potential pool of unused allowances hinder the ability of the post-2020 period of the Cap-and-Trade Program (Program) to deliver the necessary greenhouse gas (GHG) emission reductions needed to achieve the 2030 target established by Senate Bill (SB) 32 (Chapter 250, Statutes of 2016). Based on the current best available data, CARB determined that while there may be unused allowances in the early years of the Program, the design features of the Program and the established declining caps reinforce a steadily increasing carbon price signal through the next decade. This analysis can be found in Appendix D to the Staff Report (Appendix D: AB 398: Evaluation of Allowance Budgets 2021 through 2030).

Further, sunsetting any existing unused allowances or removing allowances from the post-2020 caps would will increase allowance prices and prices will increase higher and sooner than would occur under the proposed amendments to the Regulation. While this could potentially result in additional GHG emissions reductions beyond those needed to achieve the statutory targets, this would increase the potential for leakage and result in a less cost-effective Program. It could also accelerate and intensify, rather than reduce or avoid, impacts identified in the Draft EA. As such, it does not meet a fundamental requirement in order to be a viable CEQA alternative.

At the outset, staff notes that the purpose of an alternatives analysis is to reduce or avoid one or more potentially significant environmental impacts. It remains

unclear how commenter's suggestions would reduce or avoid any potentially significant impact identified in the Draft EA.

With regard to the comment to reduce allowance allocation to refineries from 2018 through 2020, AB 32 and AB 398 require that we minimize leakage. Allocation to industry is to mitigate against leakage—which would be the relocation of emissions, along with associated jobs, and production outside of the State in response to the Cap-and-Trade Program. Assistance factors are one of several factors used in allocation to industry for leakage prevention. With AB 398 setting the assistance factors at 100 percent from 2021 through 2025, with data that shows we remain on track to achieve the 2020 target early, and the much deeper reductions needed in the next decade, CARB staff believes a smooth allocation path between 2017 and 2021 is the most conservative path to protect against emissions leakage, enable earlier investments in onsite equipment upgrades, and allow for economic growth. Like the other alternative suggested above, this suggestion could also accelerate and intensify, rather than reduce or avoid, impacts identified in the Draft EA. As such, it does not meet a fundamental requirement in order to be a viable CEQA alternative.

Importantly, a 100 percent assistance factor does not mean entities get all the allowances they need to comply with the Program—they still need to reduce onsite or seek out additional allowances. By 2030, entities will receive about half of the allowances they receive today as the allocation continues to drop each year at the same rate as the overall caps in the Program. Between 2021 and 2030, the cap decline rate is almost double what it is today.

For background, when the Program was initially designed, assistance factors were set at 100 percent and were proposed to drop each compliance period as there was an expectation for carbon pricing or carbon regulations to phase-in in other regions. Today, we have not seen the expansive use of carbon pricing or GHG regulation we expected to see, consequently the leakage risk has not changed very much since the beginning of this Program. Moving forward, we are hopeful actions under the Paris Agreement will change this and as other regions address GHGs, our industry and their competitors in other regions will face similar requirements.

M. COMMENTS SUBMITTED TO MANDATORY REPORTING REGULATION COMMENTS LOG

The comments below were submitted during the 45-Day comment period for Proposed Amendments to the Regulation for the Mandatory Reporting of Greenhouse Gas Emissions rulemaking that was conducted in parallel to the rulemaking to amend the Cap-and-Trade Regulation. While these comments were submitted outside of the present Cap-and-Trade rulemaking, the comments included herein are related to the

amendments to the Cap-and-Trade Regulation and CARB staff provides the below responses in the interest of responsiveness and transparency.

M-1. Post-2020 Price Ceiling and Reserve Tier Prices

Slower Price Ceiling Increase

M-1.1. Comment:

SoCalGas appreciates the difficulty of determining an appropriate ceiling price while balancing the various and sometimes divergent objectives of setting this policy. We continue to urge ARB to use the criteria laid out in the AB 398 legislation to guide them, as required by law and not be distracted by other considerations, such as internal corporate carbon pricing and other concepts.

In the ISOR, Staff proposes a price ceiling that begins at \$65 in year 2021 and escalates at a rate of 5% plus the rate of inflation until reaching an estimated \$119.50 in 2030.⁵⁵⁶ A price ceiling that reaches well beyond \$100 in the later years, when the ceiling is more likely to be hit, is very concerning to SoCalGas. Some independent experts have found that in cap-and-trade markets with a finite compliance period and with hard floor and ceiling prices, the equilibrium price will most likely be at the floor or ceiling.⁵⁵⁷ This phenomenon should be carefully considered when evaluating potential ceiling prices.

While SoCalGas is hopeful that compliance entities will be able to find cost-effective abatement opportunities below the price ceiling, it is not a forgone conclusion that they will. Therefore, it is critical for the protection of California consumers and to adhere to the legislative direction of AB 398 to set the price ceiling at a point that will “avoid adverse impacts on resident households, businesses, and the state’s economy” and “the potential for environmental and economic leakage.”⁵⁵⁸ We are not aware of analysis conducted or commissioned by ARB that demonstrates a \$120 allowance price will avert these potentially damaging outcomes.

Furthermore, SoCalGas feels that it is important to use a relevant and defensible price ceiling to protect from threatening the long-term viability and support for the Cap-and-Trade Program within the Western Climate Initiative (WCI) and other jurisdictions with which it might link in the future.

We recommend the elimination of the 5% escalator in the price ceiling calculation or the utilization of a real price adder to the floor price at a value of \$60 or below. The price

⁵⁵⁶ The 2030 value assumes a 2% inflation rate and is in nominal prices

⁵⁵⁷ "Expecting the Unexpected: Emissions Uncertainty and Environmental Market Design", Severin Borenstein, James Bushnell, Frank A. Wolak, and Matthew Zaragoza-Watkins, Energy Institute at Haas Working Paper 274, August 2016.

⁵⁵⁸ https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201720180AB398

adder recommendation would constitute a price ceiling very similar to today's current regulation of the single price tier, set to begin in 2021. (SOCALGAS)

Response: The commenter requests the removal of the five percent increase in the price ceiling or the reduction of the price ceiling to \$60 or less above the price floor. See Responses to 45-Day Comments B-3.9, B-3.14, and B-3.15.

Lower Reserve Tier Prices and Support for Reserve Tier Volumes

M-1.2. Comment:

As acknowledged in Staff's summary of stakeholder input, many take the position that the Reserve Tiers would be more effective if spaced evenly between the floor price and ceiling price, rather than being clustered together near the ceiling. SoCalGas also holds this position. If the Reserve Tiers are placed too close together or too close to the ceiling price we fear they would be ineffective and fail to act as a brake on short-term price spikes as intended by the authors of AB 398.

The Reserve Tier proposed in the ISOR set at 50% and 75% between the floor and proposed ceiling price were 1) skewed too high due to the overly aggressive price ceiling escalator, and 2) set too closely together, jeopardizing their effectiveness. SoCalGas maintains that the Reserve Tiers be spaced equally between the floor and ceiling at one-thirds and two-thirds, respectively.

In addition to the prices selected for the Reserve Tiers, ARB must allocate allowances to each tier. SoCalGas believes that for the Reserve Tiers to be effective they must have sufficient volume. We support ARB's proposed allocation structure and urge Staff to consider any alternatives that would bolster the Reserve Tiers in order to reduce the chances of ever hitting the price ceiling. Maintaining robust Reserve Tiers will both mitigate harmful impacts on the economy as required by AB 398 and reduce the possibility of triggering the provision for ARB to assume the backstop position of maintaining environmental integrity of the program. (SOCALGAS)

Response: This comment requests lower reserve tier prices. See Response to 45-Day Comments B-3.11, B-3.14 and B-3.15. The commenter also expresses support for CARB's proposed allocation structure. Thank you for the support.

M-2. Electric and Gas Utility Allocation

Increased Allocation for Natural Gas Suppliers

M-2.1. Comment: Natural Gas Allowance Allocation

SoCalGas appreciates that staff included language in the Initial Statement of Reasons (ISOR)⁵⁵⁹ acknowledging the need to revisit natural gas allocation if a renewable gas

⁵⁵⁹ ARB. Staff Report: Initial Statement of Reasons. Sept. 4 2018, page 67:
<https://www.arb.ca.gov/regact/2018/capandtrade18/ct18isor.pdf>

mandate or other changes to the sector occur. The natural gas sector in California is already making significant and material steps towards decarbonization, which require substantial investment.

Most notably, Senate Bill (SB) 1440⁵⁶⁰ was passed by the Legislature and signed by the Governor on September 23, 2018. This law requires the California Public Utilities Commission (CPUC), in consultation with the ARB, to consider adopting specific biomethane procurement targets or goals for California's investor-owned utilities (IOUs). SoCalGas was an early supporter of SB 1440 and in favor of the CPUC setting up a program to foster cost-effective procurement of RNG in California.

Staff highlighted in the ISOR that the electric utility sector allocation recognizes the additional cost burden from decarbonization policies while the natural gas sector does not receive a similar allocation adjustment.

As the natural gas sector continues efforts to decarbonize, RNG will play a more important role in achieving the State's climate goals by providing a lower-emission, beneficial use for SLCPs that are currently being released directly into the atmosphere as methane or flared. There are many environmental and economic benefits to employing a decarbonization strategy that includes RNG, for example:

- Enables near-term GHG reduction of medium and heavy-duty transportation while also improving air quality and supporting successful implementation of the Low Carbon Fuel Standard;
- Provides cleaner fuel for ongoing thermal electric generation which supports integration of renewable resources;
- Offers cleaner fuel for customer end-uses, especially in difficult to electrify industrial applications; and
- Plays a critical role in furthering reliable deployment of renewable electricity by utilizing the natural gas pipeline as renewable storage, benefiting from its ability to firm intermittent power, provide storage capacity and scalability compared to other storage options.

SoCalGas looks forward to working with staff and the ARB Board to recognize the costs of these decarbonization efforts through adjustment to the natural gas sector allocation in future Cap-and-Trade rulemakings. (SOCALGAS)

Response: See Response to 45-Day Comments C-2.2.

⁵⁶⁰ 440 (Hueso). Energy: biomethane: biomethane procurement program: <https://www.socalgas.com/regulatory/tariffs/tm2/pdf/GO-BCUS.pdf>

M-3. Use of Allowance Value Allocated to Electric and Gas Utilities

Use of Allocated Allowance Value for Renewable Natural Gas

M-3.1. Comment:

1. EQUITABLE TREATMENT FOR ALLOWABLE USES OF ALLOWANCE

PROCEEDS

Staff proposed specific language in the Proposed Amendments that restricts natural gas utilities from using allocated allowance proceeds for activities other than as described. As currently drafted, the amendments contain more allowable uses for the electric distribution utilities (EDUs) than natural gas utilities. Staff lists as an allowable activity “Renewable Energy or Integration of Renewable Energy” under the section for EDUs. This is a broad category that encompasses construction and procurement of energy from renewable electricity projects but there is no comparable category for natural gas suppliers with respect to renewable natural gas projects, which also reduce GHGs (see benefits noted in Section 2). Similarly, the EDU allowable uses also include infrastructure or other support for “active transportation, zero-emission vehicles, or public transportation” but there is no allowable use for near-zero emission vehicles. In the interest of equitable treatment and to ensure that important GHG reduction activities are not excluded, SoCalGas urges Staff to address this discrepancy.

To assist with remedying these concerns, SoCalGas makes the following suggested edits to the regulation text (edited sections are in red **[bold]**):

1) Revised Section §95893(d)(3)

(3) ~~Auction proceeds and a~~Allowance value, including any allocated allowance auction proceeds, obtained by a natural gas supplier must ~~shall~~ be used ~~exclusively~~ for the primary benefit of retail natural gas ratepayers of each natural gas supplier, consistent with the goals of AB 32, and may not be used for the benefit of entities or persons other than such ratepayers. Allocated allowance auction proceeds ~~may~~must be used to reduce greenhouse gas emissions or returned to ratepayers using one or more of the approaches described in sections 95893(d)(3)(A)-(C)(D) and may also be used to pay for administrative and outreach costs described in section 95893(d)(4). Any allocated allowance auction proceeds returned to ratepayers must be done in a non-volumetric manner.

(A) Biomethane Projects or Integration of Biomethane Projects. Funding programs or activities in the following categories:

1. Construction of projects to develop biomethane (as defined in section 95802) that will directly interconnect with a common carrier pipeline in California, or procurement of biomethane by a natural gas supplier;

2. Support for biomethane projects that are ratepayer-owned or located within the natural gas supplier's service territory; or

3. Infrastructure projects or other projects supporting near-zero emission vehicles.

(A)(B) Energy Efficiency. *Funding programs or activities designed to reduce greenhouse gas emissions through reductions in energy use in the following categories:*

- 1. Energy efficient equipment rebates;*
- 2. Energy-efficient building retrofits;*
- 3. Other projects that reduce energy demand;*

(B)(C) Other GHG Emission Reduction Activities. *Funding programs or activities other than energy efficiency, for which the natural gas supplier can demonstrate GHG emission reductions per section 95893(d)(5). This includes funding projects or activities that reduce emissions of uncombusted natural gas and that are not mandated by any federal, state, or local health and safety requirements, legal settlement, enforcement action, Senate Bill 1371 (Morrell, 2014), or the Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities (California Code of Regulations, sections 95665-95677).*

(G)(D) Non-Volumetric Return to Ratepayers. *Distribution of allocated allowance auction proceeds to some or all ratepayers in a non-volumetric manner, either on- or off-bill.*

2) Revised section § 95893(d)(4).

(4) Administrative and Outreach Costs. Allocated allowance auction proceeds may be used for administrative costs only in so far as those costs are solely limited to necessary costs for the implementation of sections 95893(d)(3)(A)-(G)(D). Allocated allowance auction proceeds may be used for outreach that supports the implementation of the approaches described in sections 95893(d)(3)(A)-(G)(D).

3) Revised section § 95893(d)(5).

*(5) Natural gas suppliers must demonstrate GHG emissions reductions, pursuant to section 95893(e)(4)(B), **as applicable**, for each use of allocated allowance auction proceeds described in sections 95893(d)(3)(A)-(B)(C) that is undertaken.*

RNG is an immediately available resource, representing a significant and unique opportunity to capture short-lived climate pollutants (SLCPs) while at the same time displacing more carbon-intensive fuels at the end-use. Investing in RNG does not come at the expense of other approaches to GHG reduction and is found to be as cost-

effective or better than many alternative methods of reducing GHGs.⁵⁶¹ Including additional activities that reduce GHG emissions such as bringing RNG into the natural gas system and supporting near-zero emission vehicles in the transportation sector would help meet the goals of AB 32. Therefore, SoCalGas supports equitable treatment in the allowable uses of allowance proceeds and requests that Staff consider the suggested regulation language revisions above. (SOCALGAS)

Response: See Response to 45-Day Comments C-3.6.

Transferring Allowances to a Federal Power Authority

M-3.2. Comment:

BPA would like to express support for CARB's proposed amendment to §95892(b)(2) of the Cap and Trade Regulation. This amendment would allow for the direct placement of allocated allowances in the compliance accounts of electric power entities such as federal power marketing administrations. As mentioned above, BP A has a long-term power sales contract to supply power to Surprise Valley Electrification Corp., a preference customer which BPA is statutorily-required to serve. BP A believes this amendment would improve the current process of transferring allowances between BPA and Surprise Valley Electrification Corp. by reducing the administrative workload for compliance reporting and the potential for errors. BPA does request, however, that CARB correct the language of the amendment to reflect the correct title of BPA and WAPA, which are power marketing administrations. Specifically, in § 95892(b)(2), the words "federal power authority" should be changed to "federal power marketing administration." (BPA)

Response: See Response to 45-Day Comments C-3.21.

M-4. Offsets and Offset Program Implementation

Support for DEBS Definition and Efficiency

M-4.1. Comment: Offset Limitations

SoCalGas supports using precise statutory language in the amended regulation for defining Direct Environmental Benefits (DEBs). All projects located in California should automatically meet DEBs standards and out-of-state offset projects can meet the standards by demonstrating they provide environmental benefit to California. Limitations beyond the letter of the law could stifle the offset market when it already faces additional post-2020 restrictions to California-based offsets and the reduced offset usage limits. Additionally, on this topic, we urge ARB to move quickly in forming the new Compliance Offsets Compliance Protocol Task Force so that more offset protocols that benefit California can be developed and made available to compliance entities. (SOCALGAS)

⁵⁶¹ https://www.socalgas.com/1443741887279/SoCalGas_Renewable_Gas_Final-Report.pdf

Response: Thank you for the support. For discussion of the formation of the Offset Protocol Task Force, see Response to 45-Day Comments G-9.1.

V. SUMMARY OF COMMENTS MADE DURING THE 15-DAY COMMENT PERIOD AND AGENCY RESPONSES

Chapter V of this FSOR contains all comments submitted during the 15-day comment period that were directed at the proposed amendments or to the procedures followed by CARB in proposing the amendments, together with CARB’s responses. The 15-day comment period commenced on November 16, 2018, and ended on November 30, 2018, with additional comments submitted at the December 13, 2018 Board hearing on the proposed amendments.

CARB received 29 letters on the proposed amendments during the 15-day comment period and three written comments at the December Board hearing. In addition, 19 commenters gave oral testimony at the December Board hearing. To facilitate use of this document, comments are categorized into sections, and are grouped by response wherever possible.

Table V-1 below lists the organizations and individuals that submitted oral and written comments on the proposed amendments during the 15-day comment period and at the December 13, 2018 Board hearing, identifies the date and form of their comments, and shows the abbreviation assigned to each. One commenter, Covanta, submitted a late comment letter which is therefore not included in this document.

Note that some comments which follow were scanned or otherwise electronically transferred, so they may include minor typographical errors or formatting that is not consistent with the originally submitted comments. However, all content reflects the submitted comments. All originally submitted comments are available here: <https://www.arb.ca.gov/regact/2018/capandtrade18/capandtrade18.htm>. Transcripts for any verbal testimony presented is available here: <https://www.arb.ca.gov/board/mt/2018/mt121318.pdf>.

A. LIST OF COMMENTERS

Table V-1

Abbreviation	Commenter
ACR3	Arjun Patney, American Carbon Registry Written Testimony: 11/30/18
AIRPRODUCTS	Keith Adams, Air Products and Chemicals, Inc. Written Testimony: 11/30/18
BIZFEDCV2	Lois Henry, BizFed Central Valley Oral Testimony: 12/13/18

Abbreviation	Commenter
BMCLA3	Lovester Adams, Baptist Ministers Conference of Los Angeles and Southern California Oral Testimony: 12/13/18
CAISO2	Andrew Ulmer, California Independent System Operator Written Testimony: 11/30/18
CEJA2	Stephanie Tsai, California Environmental Justice Alliance Oral Testimony: 12/13/18
CFCC3	Tony Brunello, California Forest Carbon Coalition Written Testimony: 11/30/18
CLFP3	John Larrea, California League of Food Producers Written Testimony: 11/30/18
CMTA4	Michael Shaw, California Manufacturers and Technology Association Oral Testimony: 12/13/18
CMUA2	Justin Wynne, California Municipal Utilities Association Written Testimony: 11/30/18
COVANTA4	Michael Van Brunt, Covanta Written Testimony: 11/30/18
COVANTA5	Peter Weiner, Paul Hastings LLP Oral Testimony: 12/13/18
CROCKETTCOGEN3	Peter Weiner, Crockett Cogeneration Written Testimony: 11/26/18
CROCKETTCOGEN4	Anna Fero, Paul Hastings LLP Oral Testimony: 12/13/18
DENTONS2	Jeffrey Fort, Dentons US LLP Written Testimony: 11/30/18
EDF3	Katelyn Reodner Sutter, Environmental Defense Fund Written Testimony: 11/30/18
EDF4	Katelyn Roedner Sutter, Environmental Defense Fund Oral Testimony: 12/13/18
GOLDENSTATEPOWER3	Susie Berlin, Golden State Power Cooperative Written Testimony: 11/30/18
IPRE2	Nico van Aelstyn, Indigenous Peoples Reducing Emissions Written Testimony: 11/30/18
JOINTGASUTILS2	Fariya Ali, Gas Utilities Group Written Testimony: 11/30/18
LACVCOALITION	Lovester Adams, for CA Missionary Baptist State Convention et al. Written Testimony: 12/13/18
LADWP2	Bang Phung, Los Angeles Department of Water and Power Written Testimony: 11/30/18
LHOIST2	Justin Andrews, Lhoist North America Written Testimony: 11/30/18

Abbreviation	Commenter
LONGBEACH2	Max Perry, City of Long Beach Oral Testimony: 12/13/18
NCPA3	Susie Berlin, Northern California Power Agency Written Testimony: 11/30/18
NCPA- GOLDENSTATEPOWER	Susie Berlin, Northern California Public Power and Golden State Power Cooperative Oral Testimony: 12/13/18
NEARZERO3	Danny Cullenward, Near Zero Oral Testimony: 12/13/18
NISEIFARMERS2	Manuel Cunha, Jr, Nisei Farmers League Oral Testimony: 12/13/18
NRDC	Alex Jackson, Natural Resources Defense Council Oral Testimony: 12/13/18
P&G4	Simon Martin, Procter & Gamble Manufacturing Company Written Testimony: 11/30/18
PACIFICORP2	Mary Wiencke, PacifiCorp Written Testimony: 11/30/18
PANOCHE3	Robin Shropshire, Panoche Energy Center Written Testimony: 11/30/18
PANOCHE4	Robin Shropshire, Panoche Energy Center Oral Testimony: 12/13/18
PG&E4	Fariya Ali, Pacific Gas & Electric Written Testimony: 11/30/18
PG&E5	Mark Krausse, Pacific Gas and Electric Oral Testimony: 12/13/18
PGCS2	Juan Garcia, PG Cutting Services Oral Testimony: 12/13/18
POWEREX	Mike Benn, Powerex Written Testimony: 11/30/18
QCR2	Sterling Griffin, Quality Carbon Registry Written Testimony: 11/30/18
SCPPA3	Nicholas Blair, Southern California Public Power Authority Written Testimony: 11/30/18
SCPPA4	Tanya DeRivi, Southern California Public Power Authority Oral Testimony: 12/13/18
SDG&E2	Tim Carmichael, San Diego Gas & Electric Company Written Testimony: 11/30/18
SHELL2	Heather Karlstad, Shell Energy North America (US), L.P. Written Testimony: 11/30/18
SMUD3	William Westerfield III, Sacramento Municipal Utility District Written Testimony: 11/30/18
SMUD4	Timothy Tutt, Sacramento Municipal Utility District Oral Testimony: 12/13/18

Abbreviation	Commenter
SOCALGAS2	Kevin Maggay, Southern California Gas Company Oral Testimony: 12/13/18
TURLOCKID2	Josh Weimer, Turlock Irrigation District Written Testimony: 11/30/18
TURLOCKID3	Brian Biering, Turlock Irrigation District Oral Testimony: 12/13/18
VERNON	Angela Kimmey, Vernon Public Utilities Written Testimony: 11/29/18
WPTF2	Clare Breidenich, Western Power Trading Forum Written Testimony: 11/29/18
WSPA5	Juan Garcia, PG Cutting Services Written Testimony: 12/13/18
WSPA6	Juan Garcia, PG Cutting Services Written Testimony: 12/13/18

B. GHG EMISSIONS BUDGET AND COST CONTAINMENT

B-1. GHG Emissions, Costs and Other Priorities

Achieving GHG Reductions

B-1.1. Comment:

I am here as a long-time supporter of the Cap-and-Trade Program, but unfortunately disappointed in the level of ambition reflected in the package before you today. We still believe the role of Cap-and-Trade in our climate policy is critical. We need to steadily increase the price on carbon, we need revenue for investments, and we need platforms to drive climate action beyond our borders. But we think the program can and should be made stronger, to support greater emission reductions and that this package missed opportunities to do so. Indeed, I'd be hard-pressed to point to one area in the market design before you that was left to staff's discretion, where stringency won out over industry's concerns over compliance costs.

Instead, much of the narrative surrounding this package concerned where to set a relief valve price, which, if history is any guide, is unlikely to materialize. Now, WSPA is going to do what WSPA is going to do, which we can't control for. But what I found troubling was staff's response, which appeared to justify its decision to stand firm on its proposal, in part at least by pointing to its inaction on oversupply, on banking rules, and other levers that would have impacted actual prices in the market, not hypothetical possibilities a decade from now.

Ultimately, with the climate crisis growing ever more dire, we feel we need more ambition from our signature climate policies, not less, and that this package fell short. However, I am encouraged to see language in the Board resolution responsive to some

of our concerns, which I hope staff will take seriously. And more than that, I hope tomorrow's discussion and update on the 2030 scoping plan will set the stage for what we see is truly needed to meet our climate goals. And that does not mean asking carbon pricing to carry a weight it is fundamentally ill-equipped to bear, but it does mean being honest that this program cannot close the gap without substantial new effort and engagement by this Board to be more responsive and to promote policies to the sectors trended in the wrong direction, from transportation and on. (NRDC)

Response: The commenter states general dissatisfaction with the adopted amendments and believes this is a missed opportunity to drive greater emissions reductions. The commenter also states that staff should take action that will increase the price of allowances today, that the Program needs to support a steady increase in the price on carbon, and that the Program lacks ambition.

See Responses to 45-Day Comments B-1.3 and B-2.1 for why staff has determined that there will continue to be a steadily increasing carbon price signal, that the adopted amendments contain a number of provisions that will strengthen the Program's ability to help meet the SB 32 target, and for a discussion of why staff is not proposing to change existing banking rules, remove unused allowances, or change post-2020 annual caps as part of this rulemaking.

See Response to 45-Day Comments B-2.7 for an additional discussion of the emissions budgets, including allocating allowances to the post-2020 auction supply, new post-2020 Reserve tiers, and Price Ceiling.

The commenter states that the amendments generally tilted towards a consideration of compliance costs over stringency, while offering no data to show the caps would not be binding on emissions post-2020 or that the steadily increasing price signal was insufficient to prompt the actions needed to help achieve the 2030 target.

Finally, as the commenter notes, Board Resolution 18-51 directs staff to continue monitoring allowance supply, and to quantify and report to the Board, by no later than December 31, 2021, the volume of unused allowances from 2013 to 2020, including volumes held in private accounts, and the potential for unused allowances to hinder the ability of the Program to help achieve the SB 32 target. As staff noted in Appendix D to the ISOR, if it appears statewide emissions are not declining as needed, CARB staff will evaluate which sectors are not responding as anticipated, review all programs that cover those sectors, and ascertain why, as well as assessing the best path forward to ensure California stays on track to meet its legislatively established GHG targets. Periodic reviews of progress toward achieving the 2030 target, including the 2022 Scoping Plan update, and the performance of specific policies will also provide opportunities for the State to consider any changes to ensure we remain on course to achieve the 2030 target.

B-2. Emissions Caps

Emissions Caps Are Appropriate

B-2.1. Comment:

I want to start out by saying in particular, we support staffs position on overallocation, and agree that the current cumulative caps constrain GHG emissions through 2030. Further, they support -- they support also a rising price signal, which I think many of those who criticize these adopt -- these amendments have said they don't. We also believe it's premature to make changes to the allowance budgets at this point. And on the cadence, we've been amending the Cap-and-Trade Regulation. I think you've got plenty of opportunity later to come in and change things, if necessary. ... (PG&E5)

Response: Thank you for the support. See Response to 45-Day Comment B-2.1 for a further discussion of why staff is not proposing to change existing banking rules, remove unused allowances, or change post-2020 annual caps as part of this rulemaking. As noted in Response to 45-Day Comments B-1.3, CARB expects a smooth transition from the current path of meeting our 2020 climate targets ahead of schedule, to the prices that will motivate further reductions to achieve our 2030 target. This smooth transition is realized due to cost-containment features that already exist in the Program and the new features included in AB 398. See Response to 45-Day Comment B-3.14 for a discussion of these cost containment features.

Support for Maintaining Existing Banking Rules

B-2.2. Comment:

SMUD also continues to support the banking structure that has been in place for some time and the program cap that was established in last year's Cap and Trade amendments. The current banking structure is an essential component of a well-designed Cap and Trade program. SMUD believes that the bank of allowances that has developed under the current program is a clear reflection of early emission reductions and clear evidence of a successful banking structure. A program change at this time sends the wrong message that successful reductions will be viewed simply as oversupply. (SMUD3)

Comment:

...In closing, I just want to say we appreciate the continuation of the current banking provisions. This is a vital program component for a utility that is subject to wide swings in available hydropower from year to year. (SMUD4)

Response: Thank you for the support. See Responses to 45-Day Comments B-1.3 and B-2.1 for further discussion on the analyses conducted pursuant to AB 398 that supported staff's determination that no changes are necessary at this time to allowance budgets or banking rules.

As stated in those responses, staff is not proposing to change existing banking rules, remove unused allowances, or change post-2020 annual caps as part of this rulemaking. Based on staff and third-party analyses, it is expected that allowance prices will continue to steadily increase into the next decade. Any proposal to remove allowances from the system must acknowledge that the result will be higher allowance prices, reached sooner, than would result from the proposed amendments to the Regulation.

See Response to 45-Day Comment B-2.8 for the importance of multi-year compliance periods, and why they have been included since the Board first adopted the Regulation in 2011.

Tightening Emissions Caps

B-2.3. Comment:

Second, EDF maintains our position that a modest cap adjustment post-2020 is important to increase California's climate ambition. Specifically, the 52.4 million allowances slated to be split between the two price tiers post-2020 we think should just be removed from the program entirely. We don't see them as needed for cost containment at this point, but we do see it as an important opportunity to increase our ambition a little bit as a State. The Cap-and-Trade Program has been successful at helping to reduce our state's emissions. And tightening that post-2020 cap puts us on an even stronger footing to meet our 2030 target. So again, we would just respectfully ask CARB to consider that. (EDF4)

Response: The commenter requests removing 52.4 million allowances from the Program. CARB declines to make the change requested by the commenter for the reasons discussed in Response to 45-Day Comments B-2.7.

As discussed in that response, and for context, as noted in Appendix D to the ISOR, for the post-2020 period of the Program, Section 95871(a) and Table 8-2 of the Regulation designate 52.4 million allowances from the years 2021 through 2030 to the post-2020 Reserve. These allowances are removed from general circulation and are only available for purchase by covered entities at pre-determined higher prices. These allowances reflect what CARB believes should be removed from general circulation to account for the fact that the 2020 emissions will be lower than the 2020 annual cap based on the most recent modeling completed for the 2017 Scoping Plan and the GHG Inventory.⁵⁶²

While there is still uncertainty as to future emissions, the 52.4 million allowances reflect staff's accounting for expected lower emissions in 2021 with a straight line to the cap in 2030. The 52.4 million allowances account for approximately 2 percent of post-2020 allowances. Importantly, the pre- and post-2020 methodologies are consistent in that allowances are taken from within the annual

⁵⁶² See <https://www.arb.ca.gov/cc/inventory/inventory.htm>.

caps (and general circulation) to populate the Reserve. This ensures that even if the Reserve is utilized, emissions will still be within the cap.

See Responses to 45-Day Comments B-1.3 and B-2.1, that detail the modeling conducted to support the adopted Regulation, and Appendix D to the ISOR. As noted in Appendix D to the ISOR, at this time, staff is not proposing to change existing banking rules, remove unused allowances, or change post-2020 annual caps as part of this rulemaking. See also Response to 45-Day Comments B-1.3 for a discussion of Board Resolution 18-51, that directs staff to report to the Board the pre-2021 allowance supply that may be carried into the post-2020 Program.

Finally, as noted in Appendix D to the ISOR, if it appears statewide emissions are not declining as needed, recognizing that year-to-year variability due to climate, global fuel prices, or economic factors can influence emissions, CARB staff will evaluate which sectors are not responding as anticipated, review all programs that cover those sectors, and ascertain why, as well as assessing the best path forward to ensure California stays on track to meet its legislatively established GHG targets.

B-3. Post-2020 Price Ceiling and Reserve Tier Prices

Support for Post-2020 Price Ceiling and Reserve Tier Prices and Volumes

B-3.1. Comment:

And lastly, I just want to say thank you for holding the line on the price ceiling. While we had recommended an even higher one, we do appreciate that there was no change in the 15-Day package. (EDF4)

Comment:

The primary focus of the proposed amendments is cost containment as instructed by AB 398, an issue that is of paramount concern for food processors given the expected increase in compliance obligations post-2020.

CLFP believes that the proposed regulatory package meets the mandates under AB 398 and strengthens the program overall. We support:...

- CARB's approach in the development of the price ceiling. CLFP believes that proposed price ceiling meets the requirements mandated under AB 398 and is likely provide effective cost containment protections without increasing compliance costs or undermining the environmental integrity of the cap-and-trade program overall. (CLFP3)

Response: Thank you for the support. See Response to 45-Day Comment B-3.15 for a discussion of the adopted Regulation's price ceiling, and how CARB's adopted price ceiling is correctly established in light of the AB 398 legislative

direction. See Response to 45-Day Comments B-3.4 for why CARB declines to increase the price ceiling.

See Response to 45-Day Comments B-3.14 for a discussion of how the new post-2020 Reserve and price ceiling work in coordination with other features of the Program that provide compliance flexibility to meet the 2030 target reliably and cost effectively. The new post-2020 Reserve introduces 156 million allowances for cost containment at prices below the current post-2020 Reserve, and below the price of the price ceiling. The Program also includes limited banking, use of a limited number of offsets, multi-year compliance periods, and the broad scope that identifies a diverse set of sources with a range of emission reduction opportunities.

See Responses to 45-Day Comments C-1.3 and C-1.5 for a discussion of changes made to industrial allocation in response to Board Resolution 17-21 and AB 398. These changes will help minimize emissions leakage, and assist food processors in the post-2020 timeframe.

Price Ceiling and New Post-2020 Reserve Tier Prices Too High

B-3.2. Comment:

I. Establishing a Sustainable Price Ceiling

PG&E reiterates its October 22, 2018 comments⁵⁶³ in support of establishing a sustainable price ceiling. PG&E would like to note that during the November 15, 2018 Board Meeting on the proposed cap-and-trade amendments, there was discussion suggesting that fears of high price ceiling values can be dismissed because ARB would take some unspecified action in the future when allowance prices reach some unspecified point below the proposed price ceiling to prevent allowance prices from reaching too high a price. While PG&E agrees an intervention would likely occur in these circumstances, this structure does little to inspire confidence in the cap-and-trade market. Instead, PG&E agrees with the ARB's Emissions Market Assessment Committee that "It is far better to have a transparent and credible process for limiting allowance prices established in advance than relying upon ad hoc emergency measures during periods of stress."⁵⁶⁴ Further, we believe the Legislature made its intent clear in AB 398 that the credible process for limiting allowance prices would include a meaningful hard price ceiling, with provisions for maintaining environmental integrity. PG&E encourages ARB to establish a price ceiling at level that will accomplish this purpose, without need for "ad hoc emergency measures". (PG&E4)

⁵⁶³ PG&E Comments on 45-Day Cap-and-Trade Amendments, October 22, 2018: <https://www.arb.ca.gov/lists/com-attach/68-ct2018-VSUCY1M3BQkEYVR5.pdf>

⁵⁶⁴ Emissions Market Assessment Committee Discussion Paper: Price Ceiling in the GHG Emissions Cap-and-Trade Market, November 8, 2013: <https://www.arb.ca.gov/cc/capandtrade/emissionsmarketassessment/priceceiling.pdf>

Comment:

C. Cost Containment Design Features

In the 15-Day language, ARB staff did not propose any changes of note to the price ceiling and price containment point mechanisms in the previous 45-Day language. Board Chair Mary Nichols expressed surprise at the industry opposition to the 45-day proposal and speculated that the motivation was just a desire for lower prices. SMUD respectfully disagrees. Keeping Cap and Trade costs under control is certainly important for the long-term viability of Cap and Trade, but SMUD's proposal would have yielded higher price ceiling prices and price containment point prices in some years, and lower in others. It is simply the rapid escalation of these price containment structures that is of most concern. SMUD does not believe there is an economic rationale for this kind of escalation in the price containment structure.

SMUD's recommendation, in our 45-Day comments and verbally at the Board hearing, was simple and consistent with current ARB price containment practice. To reiterate, SMUD's proposal is to mirror the current "floor plus fixed amount" structure that has already been adopted by the Air Board for the single-tier APCR in the current regulations, as follows:

- Price Ceiling equals price floor plus \$60 real (increasing with inflation).
- Price Containment Point 1 equals price floor plus \$20 real.
- Price Containment Point 2 equals price floor plus \$40 real.

This yields a price ceiling point starting in 2021 of around \$78, significantly higher than the \$65 price in the 45-Day language. It also yields a starting level for the first price containment point at about \$38, not much lower than the \$41 price point in the 45-Day language. And finally, the second price containment point would start at about \$58, substantively higher than the \$53 starting level in the 45-Day language. In the latter years, all three price points are significantly lower than in the 45-Day package, yielding better cost-containment in SMUD's mind.

SMUD believes that a significant benefit from this proposal is that the price containment mechanisms are more spread out from each other, allowing two clearly separate market price breaks well below the price ceiling level. The price containment points should be pauses where stakeholders consider additional investments in abatement technologies, rather than waiting for or immediately considering the supply from the next price containment point.

SMUD suggests that the Board direct staff to modify the price containment mechanisms to match SMUD's proposed structure. At the very least, SMUD recommends a Board resolution that directs staff to analyze the structure SMUD is proposing for potential consideration in a subsequent rulemaking. (SMUD3)

Comment:

Also, SMUD is appreciative of the resolution suggesting further work be considered in future rulemakings on cost containment. SMUD continues to believe that the escalation rate in the price ceiling is too high, and the spread between the price containment points should be larger. (SMUD4)

Response: The first commenter states concern that CARB does not have clear procedures or features built into the Program except the price ceiling sale in order to prevent the market from reaching “too high a price.” CARB disagrees with this assertion. See Responses to 45-Day Comments B-3.9, B-3.14, and B-3.15 for how many features within the entire Program support cost containment, why the escalator is appropriate, and a further description of how CARB assessed all AB 398 factors in setting the price ceiling.

As noted in Response to 45-Day Comments B-3.14, the price ceiling is not the sole factor to consider when assessing how the program minimizes leakage. The new post-2020 Reserve and price ceiling work in coordination with other features of the Program that provide compliance flexibility to meet the 2030 target reliably and cost effectively. The new post-2020 Reserve introduces 156 million allowances for cost containment at prices below the current post-2020 Reserve, and below the price of the Price Ceiling. The Program also includes limited banking, use of a limited number of offsets, multi-year compliance periods, and the broad scope that identifies a diverse set of sources with a range of emission reduction opportunities.

See Responses to 45-Day Comments C-1.1, C-1.3, and C-1.5 for a discussion of changes made to industrial allocation in response to Board Resolution 17-21 and AB 398.

The first commenter is also directed to Response to 45-Day Comments B-1.3 that includes a discussion of the Independent Emissions Market Advisory Committee’s (IEMAC) role in reporting on the economic and environmental performance of the Program. CARB is required to report to the Legislature, in consultation with the IEMAC, if two consecutive auction settlement prices exceed the lower of the two new Reserve tier prices. The report would include an assessment of the potential prices to reach the price ceiling for multiple auctions.

The second commenter is directed to Response to 45-Day Comments B-3.9 for a discussion of why CARB declines to adopt the proposal of a fixed adder above the auction reserve price for the post-2020 Reserve tiers and price ceiling. The second commenter is also directed to Response to 45-Day Comment B-3.11 for why the spread between each of the new post-2020 Reserve tier prices and between the second tier price and Price Ceiling is appropriate.

The commenters are both directed to Response to 45-Day Comment B-1.3 that includes a discussion of the benefits of measures contained within the adopted 2017 Scoping Plan, including Cap-and-Trade. Response to 45-Day Comments B-1.3 outlines the modeling conducted in support of the 2017 Scoping Plan, including the uncertainty analysis. This modeling concluded that the 2017 Scoping Plan, which includes the Cap-and-Trade Program, had the highest chance of meeting the SB 32 target, and is 4 times less costly than other alternatives.

B-4. Price Ceiling Units

Generating Price Ceiling Units

B-4.1. Comment:

...though I would like to point out two major recommendations for improving these amendments, which we don't see reflected in the 15-day package. First, as we have suggested before, we strongly encourage CARB to begin working now to identify high integrity emission reductions to back the price ceiling units. When we -- you know, if, at some point, we hit the price ceiling, of course, there will be units sold at the price ceiling. And those need to be matched by reductions. And we would like to see a stream of reductions start ahead of time, so if that happens, we are prepared to maintain the environmental integrity of the program, rather than waiting to see what happens. (EDF4)

Response: See Response to 45-Day Comment B-5.4.

C. ALLOWANCE ALLOCATION

C-1. Industrial Allocation

Support for 2018-2020 and Post-2020 Industrial Assistance Factors of 100 Percent

C-1.1. Comment:

1. Assistance Factors and Covered Industrial Sectors [Table 8-1 under §95870]

Air Products strongly supports maintaining the Assistance Factor at 100% through 2030 for the allocation to industrial covered facilities. Air Products agrees that protection of emissions intensive and trade exposed industry sectors remains important to the overall success of the cap and trade program and confirms that current reductions of the Assistance Factor are not necessary to provide enough incentive for continued investment in emission reduction technologies and operating practices.

(AIRPRODUCTS)

Comment:

Particularly, I'd like to note the support for industry assistance, both in the post-2020 period, as AB 398 directed, but also during the third compliance period. And that smoothing of the transition from the second compliance period through to 2030 is very

important for industry. And as is noted by staff in their analysis of justification for the third compliance period industry assistance, the rapid increase of price, the doubling in price that would occur for a short period of time, would be quite disruptive to industry and to the jobs that they support in all of our communities. I would encourage the staff - the Board and the staff obviously, as I'm sure they will do to closely monitor the prices as this is implemented. We know that in the mid-2020s -- or we believe in the mid-2020s that there will be a significant constraint imposed on, industry, as a result. And the prices could go up significantly as a result of that. So keep -- please keep a close eye on that, as we will, most certainly. In addition to that, we know that California's leadership is the real benefit of the program that we are attempting to implement here. It's not the actual emissions reductions that this particular program will achieve. It's the leadership that could be replicated elsewhere in this country and the world. And we appreciate the time and effort that everyone has put into that as well. (CMTA4)

Response: Thank you for the support.

Support for 2018-2020 Industrial Assistance Factors of 100 Percent

C-1.2. Comment:

CLFP believes that the proposed regulatory package meets the mandates under AB 398 and strengthens the program overall. We support:

- CARB's proposed adjustment to the assistance factors for the third compliance period. CLFP believes that this change is necessary in order to provide a smooth transition into the fourth compliance period. Moreover, a failure to align assistance factors with the rest of the program going forward frustrates the need for certainty, threatens program stability, and is likely to have unforeseen consequences going forward... (CLFP3)

Response: Thank you for the support.

Adjusting Post-2020 Benchmarks

C-1.3. Comment:

With the proposed inclusion of high calcium lime production in the Regulation, a separate benchmark needs to be established in Table 9-1 for this manufacturing process. This difference is based on the stoichiometric differences in the raw materials used to manufacture each product, which results in higher process emissions for dolime vs hi cal lime. This distinction has been recognized by Environment Climate Change Canada (ECCC) in the proposed federal GHG cap and trade program for Canada, and as a result they have developed separate benchmarks.

Utilizing one benchmark for both dolime and lime does not reflect the actual chemical reaction difference that impact CO2 process emissions. Therefore, Lhoist requests that CARB consider a separate benchmark for lime manufacturing...

[Attachment: 2010 Cap and Trade Regulations, Appendix J, Allowance Allocation, Lime Manufacturing, p. J-45]

Lime Manufacturing (NAICS 327420) / Lime Manufacturing (EPA Subpart S)

Lime is derived by calcining limestone. Limestone is a naturally occurring and abundant sedimentary rock consisting of high levels of calcium and/or magnesium carbonate. If the ratio of magnesium carbonate relative to calcium carbonate is high, it is called *dolomite*. Dolomite-derived product is called dolime.

Currently only one lime manufacturing plant operates in California. This facility processes dolomite to produce dolime. In 2008 this facility produced less than 0.1 percent of total GHG emissions from the industrial sector that will be covered by the cap-and-trade program (Table J-4).

Reporting of process emissions from calcinations was not required for the reporting year 2008 and 2009 under ARB MRR but is required under the U.S. EPA MRR starting from the reporting year 2010.

Staff identified two potential product output metrics in lime manufacturing:

- Ton of lime produced from limestone
- Ton of dolime produced from dolomite

Since there is only one facility in this sector in California, and that facility processes dolomite, staff proposes to establish a benchmark using a dolime output metric.

U.S. EPA MRR requires lime manufacturers to report monthly or annual amount of lime produced (or sold+ unsold, tons) by lime type.⁵⁶⁵

⁵⁶⁵ U.S. EPA MRR requirements for lime manufacturers are specified in Subpart S. See: <http://www.epa.gov/climatechange/emissions/subpart/s.html> (accessed 10/10/10).

ECCC Proposal for Lime

- Emission Intensity (EI) = annual sector total GHG emission / annual Lime production. Using data provided by industry.
- Sector Average EI = Average production-weighted EI (2014-2016)
- Proposed OBS Standard EI = 90% Sector Average EI
 - OBS for high calcium lime
 - OBS for dolomitic and specialty lime

	OBS Standard EI * (t CO ₂ e/t lime)
High Calcium	1.1
Dolomitic and specialty	1.4

*Based on the results of the Phase 1 and 2 competitiveness analysis (90% of the weighted average)
Phase 3 not yet finalized

(LHOIST2)

Response: See Response to 45-Day Comment C-1.18.

Request for Alternate Cap Adjustment Factors for Certain Sectors

C-1.4. Comment:

In addition to these points, CLFP continues to urge CARB to increase its efforts to ensure that flexibility is a prominent part in the application of the cap adjustment factor (CAF) analysis. The current CAF for food processors, when coupled with increasing compliance and operational costs attributable to other market and supply factors, arguably nullifies the effectiveness of cost containment efforts and looms as a major threat to California's food processing industry well into the next decade.

The greenhouse gas emissions from the food processing sector represent less than one-half of one percent of the total state-wide greenhouse gas emissions. Left as is, the imposition of the current CAF will impose an unnecessary economic burden on the food processing sector and, through them, the communities in which they operate. Communities, that for the most part, have been identified as disadvantaged under the CalEnviro Screen. (CLFP3)

Response: See Response to 45-Day Comment C-1.9.

C-2. Electric and Gas Utility Allocation

Allocation for Transportation Electrification

C-2.1. Comment:

Future Rulemaking Issues

We would also welcome staff's recognition to assess potential upward adjustments to EDU allowance allocations to reflect the potential emissions shift to the electricity sector from transportation electrification-related activities based upon a demonstrable need. In order to achieve the aggressive transportation electrification efforts proposed by Governor Brown⁵⁶⁶ SCPPA Member utilities will need to continue their transportation electrification efforts and shift to developing a broader scope of aggressive electrification efforts. Per Senate Bill 350 (de Leon, 2015), CARB was directed to "identify and adopt appropriate policies, rules, or regulations to remove regulatory disincentives preventing retail sellers and local publicly owned electric utilities from facilitating the achievement of greenhouse gas emission reductions in other sectors through increased investments in transportation electrification. Policies to be considered shall include, but are not limited to, an allocation of greenhouse gas emissions allowances to retail sellers and local publicly owned electric utilities, or other regulatory mechanisms, to account for increased greenhouse gas emissions in the electric sector from transportation electrification." We look forward to working with CARB staff in the next rulemaking to address this legislative directive. (SCPPA3)

Comment:

B. Electrification Related Load Growth

Once again, the proposed amendments in the 15-Day language do not include any provisions to address Board Resolution 17-21. Board Resolution 17-21 directed the Executive Officer to "... evaluate appropriate quantification methodologies for additional electric distribution allocation that would provide ratepayer benefit for ***the Cap-and-Trade program cost burden*** to EDUs associated with transportation electrification load growth (in recognition of the requirements of SB 350)." This has been a long-standing and repeated Board directive to staff that over the years has not been implemented.

During the informal workshops in this rulemaking, CARB staff requested specific proposals regarding "... methods to quantify transportation-related load growth emissions (quantifiable and verifiable to allocation standards)." When asked what was meant by "allocation standards", CARB staff described an evidence standard that mirrored the same level of demonstration as for industrial sector allocations, which are provided retroactively based on tracked and reported historical data (either product or energy). Such a "metered data or its equivalent" requirement for the cost burden from electrification is not feasible or cost-effective for much of the potential transportation

⁵⁶⁶ Executive Order B-48-18

electrification load, or for the potential building electrification load, because these loads cannot be metered cost-effectively. For example, adding a separate meter to measure the load from replacing a natural gas water heater with an electric heat-pump water heater is infeasible and unnecessary.

SMUD suggests that a new Board Resolution is necessary to direct ARB staff to estimate the Cap-and-Trade program cost burden to EDUs associated with increased transportation and other electrification load growth (in recognition of the requirements of SB 350 and recent state electrification policies), using methods that do not require separate metering or the equivalent of every vehicle or newly electrified building load.

At the November hearing, ARB Staff indicated that they would bring back potential changes to EDU allowance allocations due to the increase in the RPS enacted by SB 100, perhaps in a new rulemaking next year. While increased RPS requirements are likely to lead to reduced utility sector emissions, this is not necessarily a reason to reduce the allocation of allowances to EDUs. SMUD notes that there has been an increased focus by Governor Brown and energy agencies on both transportation and building electrification since the EDU allocations were established, and the implied electric load growth will tend to increase utility sector emissions. The added electrification load beyond that reflected in the load forecasts underlying utility allocations is an *additional* cost burden to ratepayers, not reflected in the administrative allocations.

One way to put the proposed new resolution in place would be to simply consider the potential reduction in EDU emissions from the new 60% RPS as “offsetting” the potential increase in emissions from sharply higher transportation electrification and building electrification goals and leave the EDU allocations as is through 2030. Both issues can be revisited down the line as policy beyond 2030 is developed. (SMUD3)

Response: These comments are outside the scope of this rulemaking because no changes are proposed to the methodology for calculating post-2020 allowance allocation to electrical distribution utilities (EDUs). Nevertheless, staff will take the commenter’s suggestions under consideration for future rulemakings. See also Response to 45-Day Comment C-2.1, which addresses future changes to EDU allocation.

Allocation for Load Growth

C-2.2. Comment:

Supplemental to our verbal comments at the June 21, 2018 workshop and those submitted jointly with the Gas Utility Group and Southern California Public Power Authority, Vernon Public Utilities (VPU) has the following specific comments:

Load Growth: VPU supports providing additional allowances to electric and natural gas utilities to address the ratepayer costs of associated additional emissions from load

growth, and supports verification methods for load growth that are feasible and cost effective.

As California's economy continues to prosper, so does the demand for products and services. In response, new businesses start-up, existing businesses expand, manufacturing and production increases. In addition to these types of load growth, VPU has been experiencing increased transfer load since 2012. Most of our gas customers are transfers from the SoCalGas system and this is a trend we expect to continue. As a result, VPU's Cap and Trade compliance costs will continue to increase pursuant to the Program's design. Presently, Vernon's customer surcharge is \$0.50 per MMBtu, and the portion accounting for transfer load is 38% of Vernon's total Cap and Trade surcharge. VPU suggests the following mechanism to continue to keep the program equitable and mitigate unintended impacts to California's economic growth.

Compensation Mechanisms: One approach could consist of an allocation of non-tradable allowances. Under this approach, CARB would allocate to the covered natural gas supplier additional non-tradeable allowances that they would hold in their allowance accounts. This additional allocation should cover their increased emissions attributable to load growth and would only remain available for that limited purpose. In addition, any unused allowances would be surrendered and permanently retired in accordance with procedures established by the CARB.

Alternatively, CARB could provide each natural gas supplier with an adjustment to its compliance obligation. Similar to getting additional allocation of non-tradeable allowances, and load growth adjustment will help lower the Cap and Trade cost burden due to increase in load demand for new and transfer natural gas load. However, unlike the additional allowance allocation, natural gas suppliers will not get actual allowances, just a downward adjustment to their annual compliance obligations. This will eliminate issues associated with a possible allocation of non-tradeable allowances, the auction or uses of auction proceeds.

Quantification: Load increase could be quantified through the existing Mandatory Reporting Requirement (MRR) reporting and verification process. (VERNON)

Response: The commenter requests additional allowance allocation or a reduction in compliance obligation for electric and natural gas utilities to account for load growth. This comment is outside the scope of the current rulemaking because no changes were proposed to the methodology for calculating post-2020 allowance allocation to natural gas suppliers or electrical distribution utilities. Also, no change is proposed to the calculation of natural gas supplier compliance obligations, which are calculated based on emissions reported under the Mandatory Reporting Regulation.

Response to 45-Day Comments C-2.2 addresses potential future changes to allowance allocation for natural gas suppliers. Response to 45-Day Comments C-2.1 addresses potential future changes to EDU allocation.

The commenter also proposes a potential downward adjustment to the compliance obligation for natural gas suppliers that experience load growth. Surrendering one compliance instrument for each metric ton of covered emissions is core to the environmental integrity of the Program, so an approach of reducing a compliance obligation in response to a growth in emissions would be counter to the design and operation of the Program. As such, these changes were not made.

Increased Allocation for Natural Gas Suppliers

C-2.3. Comment:

1. Continued Consideration for Natural Gas Allowance Allocation

The GUG respectfully requests that ARB staff continue working on natural gas allocation in the next Cap-and-Trade rulemaking, in order to appropriately reflect efforts to decarbonize the natural gas sector. Staff acknowledged the need to revisit natural gas allocation if a renewable gas mandate or other changes to the sector occur in the Initial Statement of Reasons (ISOR)⁵⁶⁷ report which was released on September 4, 2018. Shortly after the ISOR's release Senate Bill 1440 (Hueso) was passed by the legislature and signed by the Governor on September 23, 2018, requiring the California Public Utilities Commission (CPUC) to consider biomethane procurement targets for California's investor owned gas corporations. Therefore, the GUG requests that the intent of staff to revise the natural gas allocation be formalized and confirmed by the Board at the adoption of the current proposed Cap-and-Trade amendments in the Board Resolution. The GUG maintains that the natural gas sector in California is already making significant and material steps towards decarbonization, which require substantial investment and should be recognized in the natural gas allowance allocation as soon as possible. (JOINTGASUTILS2)

Comment:

III. Natural Gas Allocation

PG&E requests ARB Staff to continue working with gas utilities on adjustments to the natural gas supplier allowance allocation in the next Cap-and-Trade Rulemaking. In ARB's Initial Statement of Reasons, ARB Staff notes they will continue to review and consider adjustments to natural gas supplier allocation if the natural gas investor-owned utilities undertake voluntary renewable gas programs, if a renewable gas mandate is enacted, or if other changes to the sector occur. PG&E agrees with ARB's continued review of this issue since efforts to decarbonize the natural gas pipeline are already underway, and the current natural gas supplier allowance allocation does not reflect the increased costs of such efforts for utility customers.

⁵⁶⁷ ARB. Staff Report: Initial Statement of Reasons. Sept. 4 2018, page 67:
<https://www.arb.ca.gov/regact/2018/capandtrade18/ct18isor.pdf>

RNG will play an important role in helping to achieve the State's climate goals by providing a lower-emission, beneficial use for Short-Lived Climate Pollutants that are otherwise emitted to the atmosphere. PG&E looks forward to continuing to work with ARB to recognize the value of RNG-related and other decarbonization efforts in the natural gas supplier allowance allocation in future Cap-and-Trade rulemaking. (PG&E4)

Comment:

Second, staff acknowledged in the ISOR that it should consider adjustments to the natural gas utility allowance allocation. In light of policies or efforts to decarbonize the sector, such as renewable gas mandates or other changes, such adjustments to consider allowance allocations that's consistent with Board Resolution 17-21 that direct staff to evaluate approaches to ensuring ratepayer protection for the natural a supplier sector. 1440 was signed into law, which requires the PUC to consider biomethane procurement targets for natural gas utilities. Therefore, consistent with the ISOR and the Board resolution, we feel that it's appropriate for staff to consider adjustments to the allocation -- or to the allowance allocation for gas utilities at this time. And we look forward to working with staff in this next rulemaking to make that adjustment. (SOCALGAS2)

Comment:

A few areas we'd like to continue to work with staff on include allocation for the natural gas sector to facilitate decarbonization of the gas system. And you heard from my colleague from Southern California Gas Company. We work with staff on some of that. And if the PUC enacts the program, or the utilities voluntarily enact programs to put biomethane into our pipelines, we believe that's a reason for a lower cap adjustment factor. I will point to my friend Alex Jackson that this is at least one area where staff denied business what they were asking for, which was a lower cap adjustment factor for the natural gas sector. So we'll continue to want to work on that. ... (PG&E5)

Response: These comments are outside the scope of the current rulemaking because no changes are proposed to the methodology for calculating post-2020 allowance allocation to natural gas suppliers. Response to 45-Day Comments C-2.2 addresses future changes to allowance allocation for natural gas suppliers.

SB 100 and EDU Allocation

C-2.4. Comment:

SCPPA also recognizes CARB staff's desire to re-evaluate post-2020 EDU allowance allocations given enactment of Senate Bill 100 (de Leon, 2018) with an accelerated 60% Renewables Portfolio Standard by the year 2030. Opening up post-2020 EDU allowance allocation will require close coordination with stakeholders, and SCPPA encourages CARB to start early and provide plenty of review time. Additionally, SCPPA requests that any future CARB EDU Allowance allocation changes use the most recent

IEPR Demand Forecast instead of the 2015 IEPR Demand Forecast to most accurately reflect allowance allocations. (SCPPA3)

Comment:

3. The ARB Should not Revisit Allowance Allocations to Electric Distribution Utilities in Light of the Adoption of SB 100.

One of the fundamental tenants of past allowance allocations to utilities was to provide the utilities with certainty concerning their future allowance allocations. This was a critical component of the 2013 – 2020 allocations.⁵⁶⁸ In the context of this Rulemaking, the ARB has publicly signaled that it plans to amend the utilities 2020 – 2030 allocations to address the accelerated RPS requirements of SB 100. Doing so would undermine the fundamental principle of providing certainty in allocations, making the utilities' efforts to manage their allowance holdings more difficult. The potential changes could also expose utilities and ratepayers to additional risk of carbon price fluctuations at a time when many industry observers expect carbon prices to increase well above the price floor (i.e., 2024 – 2026). During this timeframe, many utilities may see load growth due to more and more customers switching to electric vehicles. The ARB has yet to create a mechanism in the cap-and-trade for addressing the increased carbon costs of this load growth, consistent with the direction in SB 350. Finally, while the accelerated RPS obligation may have some effect on the cap-and-trade costs for some utilities, it will also likely lead to higher procurement costs for many utilities. For some utilities, the potential loss of allowances could compound the incremental costs of RPS compliance, making the switch to GHG free resources relatively more expensive. For these reasons, the ARB should not revise the 2020 – 2030 allowance allocations. (TURLOCKID2)

Comment:

The other area is with respect to potentially changing the allocations to address the new RPS requirements of SB 100. And while we understand the rationale for doing that, again, we are particularly sensitive to losing allowances and having a higher cost for some of our ratepayers. (TURLOCKID3)

Response: These comments are outside the scope of this rulemaking because no changes are proposed to the methodology for calculating post-2020 allowance allocation to EDUs. Nevertheless, staff will take the commenter's suggestions under consideration for future rulemakings. Response to 45-Day Comments C-2.1 addresses future changes to EDU allocation.

⁵⁶⁸ See Cap-and-Trade 2010 Rulemaking, Appendix A (July 27, 2011), p. 2., available at: <https://www.arb.ca.gov/regact/2010/capandtrade10/candtappa2.pdf>

C-3. Use of Allowance Value Allocated to Electric and Gas Utilities

Support for Use of Allocated Allowance Value Specifications

C-3.1. Comment:

The Golden State Power Cooperative (GSPC) urges the Board to adopt, with the refinements set forth herein, the proposed 15-Day changes to the Cap-and-Trade Regulation amendments related to the use of allowance value. GSPC supports the proposed changes to the provisions regarding the electrical distribution utilities' (EDUs) use of allowance value, and in particular the recognition that the value can be used for wildfire risk reduction, as well as outreach and education, and that the proposed methodologies for estimating the expected GHG emissions reductions are necessary to ensure that the provisions are not unduly restrictive or contravene the intent of the legislature. (GOLDENSTATEPOWER3)

Comment:

Support for Staff's Proposed 15-Day Changes to Use of Allowance Values

SCPPA supports the staff proposed changes which would:

- 1) Allow for the use of allowance value proceeds for vegetation management activities for wildfire risk reduction [§95892(d)(3)(C)(2)];
- 2) Allow for reasonable spending on customer education programs [§95892(d)(4)]; and
- 3) Require Electrical Distribution Utilities (EDU) to calculate the *expected* GHG emissions reductions from allowable activities as a helpful clarification [§95892(d)(5)].

We look forward to working with state regulators as the agencies devise a standardized methodology for quantifying GHG emissions reductions from wildfire-related fuel reduction activities per Senate Bill 901 (Dodd, 2018). (SCPPA3)

Comment:

Also wanted to thank staff for efforts over the last year to improve upon the municipal use of allowance values, specifically adding in vegetation management provisions to help with wildfire risks for our utilities. ... (SCPPA4)

Comment:

I'm actually -- I need to say that we are very pleased with the revisions to the 15-Day language. I'm representing the Northern California Power Agency, and the Golden State Power Cooperative. And NCPA is a group of publicly-owned utility members located in Northern California that are directly impacted by the wildfires, and have long lobbied for the ability to use the allowance value for programs that strengthen the resiliency and reduce the wildfire risks. And we strongly urge the Board to adopt that proposal in the 15-Day language. ... (NCPA-GOLDENSTATEPOWER)

Response: Thank you for the support. See Responses to 45-Day Comments C-3.19 and C-3.20 on estimating GHG emissions reductions for uses of allocated allowance proceeds. See Responses to 45-Day Comments C-3.10, C-3.12, and C-3.13 on using allocated allowance proceeds for wildfire risk reduction, educational programs, and outreach, respectively.

Use of Allocated Allowance Value for Non-RPS-Eligible Renewable Energy

C-3.2. Comment:

Renewable, Zero-Carbon, Energy Efficiency, and Fuel Switching: The provisions of section 95892(d)(3)(C) must clarify that that programs that meet the state’s emissions reduction objectives, and indeed, are consistent with implementation of new statutory provisions, must be authorized use of allowance value. This includes programs and measures in compliance with Senate Bill 100. EDU use of allowance value for projects that support the reduction of carbon emissions and investment in other zero-carbon resources should not only be authorized, but encouraged. Specifically, section 95892(d)(3)(C) should clarify that “other GHG emission activities include renewable energy or zero-carbon facilities.”...

Again, as noted in GSPC’s October 22 comments, it is imperative that section 95892(d)(3)(C) be interpreted to include any renewable energy investments that advance the state objective of achieving carbon neutrality, regardless of whether they meet the requirements of Public Utilities Code section 399.16(b)(1) or under Public Utilities Code section 399.16(d).

Conclusion

All of the refinements and clarifications noted above are clearly within the scope of the existing 15-Day changes and the oral statements of CARB staff that the concerns raised by stakeholders in this regard are recognized in the 15-Day changes. As such, GSPC urges the Board to direct that these clarifications be included in the proposed amendments to the regulation. In the alternative, the Board adopt the current amendments without these refinements, that you direct staff to expressly include these changes in proposed amendments in the next rulemaking proceeding, and that such proceeding be initiated immediately. (GOLDENSTATEPOWER3)

Comment:

Furthermore, NCPA urges the Board to direct staff to further refine the provisions regarding the use of allowance value in this or a subsequent rulemaking, so as to ensure that electrical distribution utilities (EDU) have the ability to use their allowance value for compliance with the state’s ever-increasing renewable and zero-emissions energy mandates...

Other GHG Emission Reduction Activities

NCPA appreciates staff's desire to provide guidance on the types of projects that it deems appropriate for the use of allowance value. But in doing so, staff has also needlessly restricted the use of allowance value for legitimate programs that are not only necessary to meet the state's climate goals, but being mandated by the legislature. In addition to the explicit recognition of wildfire risk reduction activities in section 95892(d)(3)(C) – "Other GHG Emission Reduction Activities" – CARB should also explicitly recognize the acceptable use of allowance value for programs and measures that provide benefits to utility ratepayers and meet the objectives of AB 32, including renewable energy and energy efficiency programs not specifically delineated in sections 95892(d)(3)(A) and (B), that advance the state's objective of carbon neutrality and are consistent with the mandates set forth in Senate Bill 100. In the event that the Board does not make these clarifying refinements at this time, the Board should instruct staff to outline such necessary amendments that can and should be included in a subsequent rulemaking. (NCPA3)

Comment:

And finally, with regard to the new regulations, we'll be doing this again in a couple of months, we urge the Board to direct that looking at the use of allowance value for renewable energy projects that aren't RPS compliant be specifically considered as we move towards a greater zero and Carbon neutral policies. (NCPA-GOLDENSTATEPOWER)

Response: The commenter requests changes to section 95892(d)(3)(C) of the Regulation. CARB declines to make the requested changes for the reasons described in Responses to 45-Day Comments C-3.2 and C-3.15.

Definition of "Volumetric"

C-3.3. Comment:

Finally, we agree with ARB's proposal to clarify that the use of allocated allowance proceeds for specific activities or projects allowable under the Cap-and-Trade Regulation would not be deemed "volumetric." This clarification is needed to confirm that spending allocated allowance proceeds on purchasing renewable electricity from a specific facility or on an infrastructure project to support vehicle electrification would not be deemed volumetric and would therefore be permissible under the Cap-and-Trade Program. (LADWP2)

Response: Thank you for the support. See Response to 45-Day Comments C-3.9, which addresses the change to the definition of volumetric.

Use of Allocated Allowance Value for Renewable Natural Gas

C-3.4. Comment:

2. Equitable Treatment for Allowable Uses of Allowance Proceeds

The GUG requests that staff specifically clarify that projects supporting renewable natural gas (RNG) projects (including infrastructure, procurement and near-zero emissions vehicles) can be considered as eligible uses for natural gas utility proceeds under Section 95893(d)(B) “Other GHG Emission Reduction Activities.”

Although RNG-related projects do not have a separate category in the modified draft amendments in the same way that renewable electricity projects do (see Section 95892(d)(3)(A) “Renewable Energy or Integration of Renewable Energy”), it is the GUG’s understanding that they could still be allowed. Given the disparity between how renewable electricity projects and RNG-related projects are included in the proposed amendments, the GUG believes additional clarification from staff would be helpful.

As the GUG has noted previously, RNG is an immediately available resource, representing a significant and unique opportunity to capture Short-Lived Climate Pollutants while at the same time displacing more carbon-intensive fuels at the end-use. Making sure that additional activities that reduce GHG emissions such as bringing RNG into the natural gas system and supporting near-zero emission vehicles in the transportation sector would help meet the goals of AB 32 and SB 32. Therefore, the GUG supports the ability for natural gas utilities to pursue RNG-related projects as an allowable use of allowance proceeds. (JOINTGASUTILS2)

Comment:

Additionally, given the potential to reduce GHG emissions further by bringing renewable natural gas (RNG) into the natural gas system, SDG&E continues to support the position of the Gas Utility Group in advocating for its explicit inclusion under allowable uses of allowance proceeds. (SDG&E2)

Comment:

IV. Equitable Treatment of Eligible Allowance Value Uses

PG&E requests that ARB clarify in the Final Statement of Reasons that projects supporting renewable natural gas, including infrastructure, procurement and near-zero emissions vehicles, can be eligible under the “Other GHG-reducing Activities” category in Section 95893. These activities would help drive cost-effective and innovative GHG reduction strategies and are broadly consistent with the ‘renewable energy’ category for EDUs. (PG&E4)

Comment:

First, the proposed regulation specify that electric utilities may use a portion of the Cap-and-Trade revenues to fund renewable energy or integration of renewable energy. The regulation doesn’t provide similar language for the natural gas utilities, leading to ambiguity on the treatment of two sectors. Renewable natural gas, as you know, is an efficient way to reach our short-lived climate pollutant goals by displacing high carbon fuels at its endpoint, as well as mitigating methane emissions. We’ve spoken to staff on

this topic, and they've indicated that the natural gas industry does have the same allowable uses of their Cap-and-Trade revenues. We would just like to see that language explicit and articulated clearly in the regulation. ... (SOCALGAS2)

Comment:

And then also expressly provide that allowances can be used -- natural gas allowances could be used to purchase and offset the costs of biomethane, another thing we'd like to work with staff on. ... (PG&E5)

Response: The commenters request that, in general, natural gas suppliers be allowed to use allocated allowance proceeds in manners similar to electrical distribution utilities (EDUs). The commenters make specific requests that renewable natural gas projects and transportation-related projects be allowed uses of allocated allowance proceeds for natural gas suppliers. See Response to 45-Day Comments C-3.6 for CARB's response to these requests.

Use of Allocated Allowance Value for Existing Activities

C-3.5. Comment:

However, the 15-Day changes do not address all of the concerns that were raised during the November 15 Board meeting, and GSPC notes the following refinements and clarifications that should be incorporated into the 15-Day changes amendments in section 95892(d)...

Existing Programs and Measures: In order to protect the integrity and viability of existing investments in GHG reduction measures and programs, this section should clarify that all existing measures and ongoing programs funded by emissions allowances will continue to be deemed acceptable uses of allowance value. This clarifying provision in section 95892(d)(3)(C) will ensure that already approved and successfully implemented projects and programs are not jeopardized. (GOLDENSTATEPOWER3)

Comment:

We think that the revisions with regard to the use of allowance value, we would like to have seen them go a little bit further with regard to existing programs. And we'd like to see the Board direct staff to acknowledge in guidance or in the ISOR that programs that are already in place that have been utilized allowance value, continue to be acceptable uses of allowance value, even if they're not specifically delineated in the revised regulations (NCPA-GOLDENSTATEPOWER)

Response: The commenters requests that CARB specify that all existing expenditures will be allowable under the adopted amendments. CARB declines to make this change. The adopted amendments further specify what types of expenditures are allowable uses of allocated allowance proceeds and what expenditures are prohibited. Allocated allowance proceeds are provided to EDUs to address the cost burden of compliance with the Cap-and-Trade

Program, and CARB has clear authority to set limits on the use of value from the allowances allocated pursuant to the Program. In some cases, existing uses may not meet the revised requirements. However, the adopted framework provides a range of options for allowable uses, and CARB staff is available to provide technical assistance to EDUs on uses that meet the requirements of the adopted amendments.

The adopted amendments apply to all uses of allocated allowance value that take place after the amendments' effective date of April 1, 2019. This includes all allowance proceeds received after the effective date and allowance proceeds received prior to the effective date that remain unspent (i.e., proceeds that have not been disbursed or specifically obligated pursuant to a contract for a specified use where the contract is executed prior to the effective date of the amendments). Allowance proceeds spent *prior* to the effective date of the amendments and proceeds that were specifically obligated pursuant to a contract for a specified use executed prior to April 1, 2019 are subject to the use requirements of section 95892 of the October 2017 Cap-and-Trade Regulation. Uses of allocated allowance value that have not yet been reported to CARB are subject to the adopted amendments with regard to the reporting requirements of section 95892(e). Section 95893 of the Regulation applies to natural gas suppliers in the same manner. See also Responses to 45-Day Comments C-3.2 on allowable expenditures on renewable electricity and C-3.8 on the use of allocated proceeds for cogeneration.

Use of Allocated Allowance Value for Cogeneration

C-3.6. Comment:

This should also recognize funding for cogeneration and combined heat and power projects that have higher efficiency rates than traditional combustion generation, reduce local emissions by utilizing excess thermal heat, and otherwise meet the requirements and objectives of the regulation and enabling legislation. (GOLDENSTATEPOWER3)

Response: See Response to 45-Day Comments C-3.8 on the use of allocated allowance proceeds for cogeneration and combined heat and power projects.

Use of Allocated Allowance Value for HFC Emissions Reduction

C-3.7. Comment:

In addition, LADWP supports ARB's proposal to adopt new regulatory text that explicitly allows the use of allocated allowance proceeds to reduce emissions of hydrofluorocarbons (HFCs), which have large climate impacts similar to sulfur hexafluoride. Significant GHG reductions can be realized through the implementation of various programs for reducing HFC emissions (such as rebate programs to replace refrigerants in commercial refrigeration systems through retrofits or new equipment installations). Because these programs can provide GHG reductions that benefit

ratepayers, expenditures on such projects or activities should be an allowable use of allocated allowance proceeds. (LADWP2)

Response: Thank you for the support.

Use of Allocated Allowance Value to Purchase Allowances

C-3.8. Comment:

While SMUD appreciates the additional clarifications of changes in the 45-Day language pertaining to the use of allowance proceeds, SMUD disagrees with the new policy position prohibiting the use of allowance proceeds to procure allowances for compliance. SMUD suggests additional clarifications for allowance proceeds use...

SMUD strongly supports the continued ability to use allowance proceeds to purchase allowances and is disappointed that the 15-Day language expressly prohibits such use. **SMUD strongly recommends removing this added language.** SMUD reiterates our conviction that use of allowance proceeds to procure allowances for compliance is fully consistent with the goals of AB 32. CARB should either directly clarify that use of proceeds to procure allowances is expressly allowed (with constraints) or clarify that using proceeds to procure allowances does not constitute a volumetric return of proceeds to ratepayers. SMUD suggested several possible means of clarification in our 45-Day comments. At the very least, the Board Resolution should direct staff to analyze the impacts of the express prohibition on the market and ratepayer costs and reconsider the ban as appropriate. (SMUD3)

Response: The commenter requests that the adopted amendments be changed to allow the purchase of allowances with allocated allowance proceeds. For the reasons described in Response to 45-Day Comments C-3.9, CARB declines to make this change.

Use of Allocated Allowance Value for Education

C-3.9. Comment:

Education and Outreach

The proposed changes in section 95892(d) that clarify the acceptable use of allowance value for educational and outreach programs and measures should be adopted. Educating the public on the types of actions that they can take to directly reduce GHG emissions will be critically important to meeting the state's climate goals, and it is appropriate for EDU allowance value to be used not only for direct emissions reduction and avoidance programs, but also on educating Californians on how their actions can support and complement these programs. (NCPA3)

Response: Thank you for the support. For detail regarding the types of educational programs allowable under the adopted amendments, see Response to 45-Day Comments C-3.10.

Support for Limiting Use of Allocated Allowance Value for Education

C-3.10. Comment:

I. Use of Allowance Value

LADWP supports ARB's proposal to explicitly allow the use of allocated allowance proceeds on educational programs that promote and support efforts to reduce GHG emissions. LADWP further agrees with ARB's proposal to limit spending on education programs to the greater of \$100,000 or one percent of total annual expenditures by an Electric Distribution Utility (EDU). Such a spending limitation is reasonable given that although these educational programs serve a valuable role for promoting GHG reductions and benefitting ratepayers, it is difficult to quantify the benefits of these programs. (LADWP2)

Response: Thank you for the support.

Opposition to Limiting Use of Allocated Allowance Value for Education

C-3.11. Comment:

2. The ARB Should Not Adopt the 1% Limit on Allowance Revenue Usage For Educational Purposes.

The proposed amendments to Section 95892(d)(4) would place a limit of \$100,000 or 1% on the use of allowance value for administrative, outreach and educational programs that are designed to reduce GHG emissions. TID shares the concerns of many other utilities about this proposed restriction. This proposal is counterproductive because educational efforts have the potential for some of the greatest emissions reductions. By educating the public, particularly young people, about the importance of reducing GHG emissions, these expenditures have the potential to change a lifetime of behavior. While the potential quantity of emissions reductions is speculative, there is no question that educating the public can result in emission reductions that far exceed the utility's scope of influence over generation resources and energy efficiency. Such educational efforts could inform choices about transportation, housing, food consumption and many other areas where an individual consumer can directly affect emission reductions. TID strongly encourages the ARB to provide more flexibility to utilities to use their allowance revenue to further such educational efforts. Use of funds for educational efforts will remain subject to the general allowance revenue reporting requirements and if it becomes clear to the ARB that the educational efforts are not effective, the ARB can always change the regulation down the road. However, the ARB should not limit expenditures on educational and outreach at such a critical point. The ARB should instead provide some deference to the utilities in determining how best to educate their ratepayers on the importance of reducing GHG emissions. (TURLOCKID2)

Comment:

SMUD also supports the clarifying specific addition of ‘... educational programs ...’ as an allowed use but believes that the proposed limit on such funding -- \$100,000 or 1% of annual proceed expenditures -- is too low. SMUD’s proceeds from selling allowances not used for compliance is unlikely to be above \$10 million annually, meaning that \$100,000 would be the applicable limit. SMUD suggests changing the limit to \$100,000 or 5% of annual proceed expenditures, whichever is greater.

SMUD would expect that this is a change that can be included in a Board direction and adopted with the 15-Day language, but if not SMUD requests Board direction to examine the proposed limit in relation to POU allocations and change the limit to allow higher educational expenditures. It is sometimes forgotten by climate professionals that many Americans are either unaware of the dangers posed by Global Warming to California or preoccupied with other concerns. Public education of climate impacts and the opportunities offered by this Board and other state agencies to combat Climate Change is critical for public support and transformation to a low carbon economy. (SMUD3)

Response: The commenters oppose the limit on using allocated allowance proceeds to fund educational programs without measurable GHG emissions reductions, and the request that the limit be removed or increased. CARB declines to make these changes. CARB supports electrical distribution utilities’ (EDUs) use of allocated allowance funds for educational purposes that reduce GHG emissions. To date, with the exception of investor-owned EDUs spending on outreach for California Climate Credit programs at their inception, EDUs and natural gas suppliers have generally not spent allocated allowance proceeds on educational programs. Educational programs may have value for achieving GHG reductions and benefitting ratepayers, but the effectiveness of such programs for these purposes is uncertain and difficult to evaluate. Staff is also mindful of concerns expressed by other commenters that some existing educational efforts by utilities are conveying inaccurate or misleading information. Therefore, staff believes that expenditures of allocated allowance proceeds on educational programs should be limited in favor of projects and activities for which ratepayer benefit and GHG reductions can be more directly demonstrated.

The adopted amendments limit spending of allocated allowance proceeds on educational programs to either one percent of total proceeds spent by an EDU or \$100,000, whichever is larger, to accommodate the wide range of allocated allowance proceeds received by EDUs. Based on an assessment of potential total annual expenditures by utilities, including potential expenditure of accumulated unspent funds, CARB believes that these limits will allow for sufficient funds to design and implement an educational program while ensuring that the majority of allowance proceeds are returned to ratepayers or used to reduce GHG emissions in a manner such that the reductions can be demonstrated.

The commenters do not indicate what types of programs may be precluded by this limit. EDUs can use allocated allowance proceeds for educational programs in excess of these limits if the EDU is able to demonstrate GHG emission reductions of the program. CARB also encourages EDUs to leverage other available educational and outreach funds, including efforts funded through Greenhouse Gas Reduction Fund (GGRF) proceeds. See also Responses to 45-Day Comments C-3.10 and C-3.13 regarding the types of educational activities that are allowable uses of allocated allowance proceeds under the adopted amendments.

Finally, one commenter appears to express a view that the Board can direct additional changes to the regulatory language at a hearing to adopt final regulatory language without recirculating such an amendment for an additional 15-Day public comment period. CARB staff notes that the commenter's proposal (i.e., changing the limit on education programs to \$100,000 or 5% of annual proceed expenditures, whichever is greater) would be a substantial change to the amendments, requiring an additional 15-day notice and comment period. The Board can of course direct additional changes – such as removing language proposed in a 15-Day package prior to a Board hearing – but as specified in the Administrative Procedure Act (APA), this direction can only be effectuated by requiring an additional opportunity of at least 15 days for the public to comment on the changes, and thereby an additional hearing wherein the Board would vote on the amendments.

Use of Allocated Allowance Value for Wildfire Risk Reduction

C-3.12. Comment:

However, the 15-Day changes do not address all of the concerns that were raised during the November 15 Board meeting, and GSPC notes the following refinements and clarifications that should be incorporated into the 15-Day changes amendments in section 95892(d).

Clarification regarding Other GHG Emission Reduction Activities

Wildfire Risk Reduction: GSPC appreciates the 15-Day changes that explicitly recognizes that EDU allowance value may be used for wildfire risk reduction activities in section 95892(d)(3)(C). The Board should adopt this proposed change, and in doing so, direct staff to immediately adopt an interim tracking mechanism for quantifying emissions reductions to ensure that EDUs can immediately begin expending allowance value on such measures that are in conformance with Public Utilities Code sections 8386 and 8387. (GOLDENSTATEPOWER3)

Comment:

The Northern California Power Agency⁵⁶⁹ (NCPA) supports the proposed amendments reflected in the November 15, 2018 15-Day changes regarding the use of allowance value for wildfire risk reduction activities...

Use of Allowance Value for Wildfire Risk Reduction

Several stakeholders raised the importance of authorizing the use of allowance value for EDU programs and measures that mitigate wildfire risks and resulting harm. The 15-Day changes to Section 95892(d)(3)(C) respond to this appeal, and allow activities that are in conformance with Public Utilities Code sections 8386 and 8387 to be funded with allowance value. This is a significant and important revision to the regulations, and NCPA urges CARB to adopt the change. However, the use of allowance value for this purpose is contingent upon CARB adopting a “standardized system for quantifying GHG emissions reductions from fuel reduction activities” pursuant to Healthy and Safety code section 38535. The metric for establishing this quantification could involve an extended process. In order to avoid delaying implementation of this provision, the Board should authorize staff to employ an interim tracking measure that allows the immediate use of funds under this provision for all activities consistent with PU code section 8386 and 8387, and that implementation of this provision not be delayed or contingent upon establishing the mandated historic baseline. Doing so would ensure that this provision can be immediately and meaningfully implemented, and allow EDUs to move forward without delay on allowance value-funded programs and measures that reduce wildfire risk. (NCPA3)

Comment:

A. Use of Allowance Proceeds

SMUD appreciates the inclusion of an additional specific use for allowance proceeds under Section 95892(d)(3)(C), allowing proceeds to be spent on “... wildfire risk reduction or forest carbon sequestration ...”, pending development by CARB of a standardized system for quantifying GHG reductions from such actions. SMUD requests that an expedited development of this system be directed in the Board Resolution or other direction to CARB staff. (SMUD3)

Comment:

With regard to the use of allowance value for the wildfire mitigation, we would like to see the Board provide staff with the guidance and direction to ensure that these programs can be implemented immediately with an interim accounting mechanism, and that we not have to wait until the provisions of SB 901 have been met, where there's a statewide

⁵⁶⁹ NCPA is a nonprofit California joint powers agency established in 1968 to construct and operate renewable and low-emitting generating facilities and assist in meeting the wholesale energy needs of its 16 members: the Cities of Alameda, Biggs, Gridley, Healdsburg, Lodi, Lompoc, Palo Alto, Redding, Roseville, Santa Clara, Shasta Lake, and Ukiah, Plumas-Sierra Rural Electric Cooperative, Port of Oakland, San Francisco Bay Area Rapid Transit (BART), and Truckee Donner Public Utility District—collectively serving nearly 700,000 electric consumers in Central and Northern California.

baseline or a specific methodology. That we can do the methodology -- apply that as a true-up after the programs are already put into place. (NCPA-GOLDENSTATEPOWER)

Response: See Response to 45-Day Comments C-3.12 on the use of allocated allowance proceeds by electrical distribution utilities for wildfire risk prevention or forest carbon sequestration. CARB appreciates the urgency of the request to expend allowance proceeds for these purposes. This urgency must be balanced with ensuring that these expenditures are aligned with statewide efforts to appropriately manage wildfire risks and are expended in a manner that benefits and protects ratepayers and the climate. While the 15-Day revisions are specific to the standardized system for quantifying GHG emissions reductions as specified in Health and Safety Code section 38535(a), rather than the separate historic baseline of GHG emissions specified in section 38535(b), that effort must be completed prior to utilization of this provision. CARB is currently working with CAL FIRE to develop a quantification methodology for fuel reduction activities that is consistent with Health and Safety Code section 38535(a). CARB plans to issue guidance once that effort has been completed to indicate when and how allocated allowance proceeds may be used for wildfire risk reduction.

Flexibility in Reporting on GHG Emissions Reductions

C-3.13. Comment:

Quantifying Expected Emissions Reductions

The proposed 15-Day changes clarify that EDUs must demonstrate the “expected” GHG emissions reductions from various programs. This clarification is necessary, otherwise the reporting provisions would be inconsistent with the previous requirement to “estimate” GHG emissions. The Board should adopt the changes to section 95892(d)(5). Likewise, changes that clarify that the proposed methodologies for estimating the GHG emissions reductions are only suggested approaches, “as applicable,” and not intended to narrow the scope of program types that may not be conducive to the methodologies delineated in this section. As such, NCPA urges the Board to adopt this further revision to section 95892(e)(4)(B). (NCPA3)

Response: Thank you for the support. See Response to 45-Day Comments C-3.19 and C-3.20.

Reporting on Solar on Multi-Family Affordable Housing Program

C-3.14. Comment:

Eligible Uses of Allowance Proceeds

SDG&E appreciates Staff’s inclusion of education and outreach activities as allowable costs; however, we would reiterate that added requirements for GHG calculations, including for educational outreach programs, could hamper utilities’ use of allowance proceeds for programs that require this additional justification. Specifically, the utilities

are mandated to make \$100,000,000 or 10% of annual allowance proceeds available for the Solar on Multifamily Affordable Housing (SOMAH) program as directed by Assembly Bill 693 (Stats of 2015, Ch. 582). As such, utilities should not have to justify the use of the proceeds for this purpose, nor the GHG reductions associated with this utilization. Depending on the program, estimates of GHG emissions reductions could be difficult to calculate or obtain, such as SOMAH and education and outreach. For non-mandated programs, this additional burden will likely deter investments. Thus, SDG&E urges CARB to remove the additional requirements in Section 95892(e)(4)(B) and 95893(e)(4)(B), or at the very least carve-out education and mandated uses such as SOMAH. (SDG&E2)

Response: SDG&E requests an exception to the reporting requirements for mandated clean energy programs. CARB declines to make this change. See Response to 45-Day Comments C-3.18.

Assigning Emission Factors for Reporting on “Other” Activities’ Emissions Reductions

C-3.15. Comment:

SMUD reiterates our 45-Day comments that while the GHG reduction estimation protocols in section 95892(e)(4) discuss GHG emission factors applicable to the reductions from changes in electricity or fuel use, it does not include any factors to be used for (1) the GHG reductions from the provisions in section 95892(d)(3)(C) relating to sulfur hexafluoride reductions, (2) the newly added use for wildfire risk reduction or forest carbon sequestration, or (3) the other potential uses implied by Section 95892(d)(3)(C). SMUD believes this oversight could be corrected at the Board hearing by directing staff to correct these omissions, without additional 15-Day language or in-program guidance. (SMUD3)

Response: See Response to 45-Day Comments C-3.20. See also Response to 15-Day Comment C-3.11 regarding commenter’s misunderstanding of the APA process.

C-4. Legacy Contracts

Support for Post-2017 Allocation to Legacy Contract Generators without Industrial Counterparties

C-4.1. Comment:

On behalf of Crockett Cogeneration (“Crockett”), I am writing in support of the modifications to the proposed California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation (“Cap-and-Trade Program”)

amendments, which would provide transition assistance to legacy contract generators without industrial counterparties for the third compliance period and post-2020.⁵⁷⁰

As outlined in our prior comments,⁵⁷¹ Crockett operates a cogeneration facility that provides steam to C&H Sugar under a steam sale contract running through 2026. This contract was executed before passage of Assembly Bill (“AB”) 32 and does not provide for recovery of Cap-and-Trade Program compliance costs. Like other similarly situated counterparties, C&H has not been willing to renegotiate its contract with Crockett to shoulder any portion of these compliance costs, nor has C&H been willing to join the Program as an opt-in covered entity.

Due to the inequities caused by these “legacy contracts” that predate AB 32, in 2014 the Board decided that transition assistance would be provided for the life of legacy contracts *with* an industrial counterparty. However, for those legacy contracts *without* an industrial counterparty – such as Crockett – the Board limited transition assistance to the end of the second compliance period. If the transition assistance expires, Crockett faces the prospect of bearing stranded compliance costs alone without assistance through 2026.

Providing third compliance period and post-2020 transition assistance to legacy contract generators without industrial counterparties is an equitable solution in line with the assistance provided to legacy contract generators with industrial counterparties, waste-to-energy facilities, and low- and medium-leakage risk industries.

Crockett supports the proposed modifications to the proposed California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation amendments. Crockett believes that a vintage 2020 allowance allocation, including true-up allowance allocation for the 2018 and 2019 budget years, is appropriate and consistent with the Board’s findings in Resolution 17-21. (CROCKETTCOGEN3)

Comment:

E. Allocation to Legacy Contract Generators

SMUD appreciates the changes in the 15-Day language to provisions continuing allocation of allowances to cover legacy contract emissions for generators with counterparties that are not otherwise included in the Cap and Trade program. SMUD supports, starting the re-introduced program component in 2020, rather than 2021 as

⁵⁷⁰ See ARB, Proposed Amendments to the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation – Proposed Modifications to the Regulation Order (November 15, 2018), <https://www.arb.ca.gov/regact/2018/capandtrade18/ct15dayregtext.pdf>.

⁵⁷¹ See, e.g., Comments of Crockett Cogeneration (Mar. 16, 2018), https://www.arb.ca.gov/lispub/comm2/bccomdisp.php?listname=ct-3-2-18-wkshp-ws&comment_num=32&virt_num=26; Comments of Crockett Cogeneration (July 5, 2018), https://www.arb.ca.gov/lispub/comm2/bccomdisp.php?listname=ct-6-21-18-wkshp-ws&comment_num=17&virt_num=16; Comments of Crockett Cogeneration (October 17, 2018), <https://www.arb.ca.gov/lists/com-attach/9-ct2018-AWJWIIM9VGQCb113.pdf>.

earlier proposed, and including “true-up” provisions to cover the years 2018 and 2019. This action makes the legacy contract provisions for this type of contract seamless from when first enacted to the end of the contracts. (SMUD3)

Comment:

The current regulations sunset transition assistance for legacy contracts without an industrial counterparty at the end of the second compliance period, causing legacy contract holders, like Crockett, to bear stranded compliance costs alone for the remainder of their contract durations. We appreciate that the Board, via resolution 17-21, and staff, via today's draft amendments, have recognized and addressed this issue. The proposed amendments before you today would provide transition assistance in the third compliance period and through the remaining life of legacy contracts without industrial counterparties. ... (CROCKETTCOGEN4)

Response: Thank you for the support.

Panoche and Legacy Contracts

C-4.2. Comment:

The Amendments provide PEC with Third Compliance Period Legacy Contract Transition Allowances. **PEC supports this amendment**, however additional action by CARB is still needed to reasonably solve the remaining long-term issue, as detailed below.

PEC is a large natural gas peaking plant located near Fresno, California. PEC's quick-start capability and operational flexibility are critical in supporting grid reliability as California continues its build out of intermittent renewable generation. Those characteristics, along with PEC's proximity to fuel supply and connectivity to the grid make PEC an essential piece of California's energy infrastructure.

CARB's Cap and Trade Program, first launched in late 2012, is a market-based mechanism designed to reduce the emissions of greenhouse gases (GHGs), and is a key component in the broader AB 32 Scoping Plan master policy framework to reduce GHGs. The program relies on the basic economic premise that increasing the cost of carbon emitting activities will create incentives to reduce those activities, i.e. the policy of creating a "price of carbon". PEC's Legacy Contract lacks this "price on carbon", and therefore is preventing this basic policy construct from operating as intended. Over the past seven (7) years, PEC has worked diligently to ensure that the price of carbon is included in PEC's dispatch price, by attempting to secure a contract amendment with PEC's counterparty⁵⁷².

⁵⁷² Note: PEC has never stopped pursuing a good faith contractual solution, and in fact, has presented our counterparty numerous opportunities for settlement with conditions that PEC believes exceed those

This is not a new issue for CARB Board Members. Last year you approved Board Resolution 17-21 acknowledging that a solution is still needed for remaining Legacy Contract Holders without an Industrial Counterparty like PEC⁵⁷³. PEC is still hopeful that a contractual solution can be found but acknowledges that help is needed from CARB.

As noted in our 45-Day comment letter⁵⁷⁴, this issue has a long and difficult history. PEC is appreciative of staff and the Board's decision to provide Third Compliance Period relief and supports their inclusion in this amendment package, but the current amendments do not provide a long-term solution. To that end, during oral testimony at the November 15, 2018 Board Hearing, PEC requested three actions by CARB as detailed below. The Board was open to this newly proposed effort as we continue to look for a possible contractual resolution.

1. Legacy Contract Transitional Allowances should be granted for the Third Compliance Period (2018-2020) for Legacy Contract Holders without an Industrial Counterparty that previously received legacy contract transition assistance (2013-2017). This amendment is in the current 15- day package, which PEC supports.
2. Limit the additional time conceded to seek a contractual solution, with the help of a designated CARB Board Member, such that the 2019 Cap and Trade amendments could incorporate a long-term regulatory fix. The extra time would be limited to six months from the December Board Hearing.
3. If, after the six month deadline in #2 above lapses, CARB staff would propose amendments to provide an allocation mechanism to Legacy Contract Holders without an Industrial Counterparty that is consistent with the allocation mechanism for Legacy Contract Holders with an Industrial Counterparty. These amendments would apply to the third compliance period through the end of a contract term and would be included in the next Cap and Trade rulemaking to protect PEC (and the environment) against the continued increased dispatch and exposure associated with that lack of a carbon price signal.

PEC requests that these commitments be included in the December Board Adoption Resolution to codify the Board's intent.

Summary

PEC remains committed to finding a contractual solution, but in the absence of this, implores CARB to follow through on its commitment to protect the integrity of the Program and provide long-term relief for Legacy Contract holders without an Industrial

that have already been agreed to by PG&E and approved by the California Public Utilities Commission ("CPUC").

⁵⁷³ <https://www.arb.ca.gov/board/res/2017/res17-21.pdf>

⁵⁷⁴ <https://www.arb.ca.gov/lists/com-attach/74-ct2018-AHBSM V0 2UV0BaAFi.pdf>

Counterparty. Without such relief, the Program would continue to harm PEC, its bondholders, its ultimate owners (which include public pension funds in the State of California), and all other stakeholders including PG&E ratepayers and the citizens of the San Joaquin Valley.

The Board has acknowledged that a solution is still needed. PEC supports continued efforts in this direction and looks forward to working, in parallel, with both our counterparty on a contract resolution, and with CARB on a regulatory solution. The timing of these dual-track efforts will most certainly cross as any PPA amendment would still need CPUC approval which will likely take twelve months or more. And finally, PEC fully understands that upon a CPUC-approved Legacy Contract amendment, the provisions of any regulatory solution would no longer continue. (PANOCHE3)

Comment:

I'm here representing Panoche Energy Center to support the 15-Day amendment package and the Board's continued support of an equitable legacy contract resolution. Panoche continues to seek a well-functioning Cap-and-Trade Program that includes a price of carbon for all electricity dispatch. And we're committed to continued good-faith negotiations with our counterparty. We're hopeful that this issue can be resolved in the next six months, and appreciate the continuing help of staff and the Board to find a solution that works for all parties and more importantly a solution that is good for the environment and protects environmental justice communities. (PANOCHE4)

Response: The commenter thanks CARB for the amendment providing legacy contract transition assistance for 2018-2020 for legacy contract generators without industrial counterparties. Thank you for the support.

The commenter also requests that a Board member help the commenter and their counterparty to renegotiate their contract and, if that is unsuccessful, requests that the transition assistance calculation for legacy contract generators without industrial counterparties be changed to the same method used for legacy contract generators with industrial counterparties. When this item was raised at the December 13, 2018 Board hearing, Board Member De la Torre indicated that the goal was to have this contract not come back before the Board or CARB staff. CARB staff responded that the understanding is that the parties are discussing a renegotiation offer specifically including the price of carbon in the contract. CARB believes that both parties' ongoing interest in the issue suggests their interest in moving beyond the status quo, and therefore the potential for successful renegotiation. As indicated in Board Resolution 18-51, adopted by the Board on December 13, 2018, if the legacy contract is not renegotiated in a timely fashion, then CARB would evaluate and propose future amendments, as appropriate, to allocate allowances for transition assistance to the legacy contract generator.

Under the adopted amendments, the calculation of the amount of transition assistance for legacy contract generators without industrial counterparties will remain unchanged for reasons explained in the Response to 45-Day Comments C-4.2.

PG&E and Legacy Contracts

C-4.3. Comment:

V. Legacy Contracts

The Modified Regulation provides Transition Assistance to legacy contract generators without industrial counterparties for the Third Compliance Period. As PG&E has previously stated, PG&E does not believe that any of its counterparties qualify for such Transition Assistance. The core purpose of Transition Assistance is to reduce the financial responsibility for GHG costs for generators with Power Purchase Agreements (PPA) that do “not allow the covered entity to recover the cost of legacy contract emissions from the legacy contract counterparty.”⁵⁷⁵

PG&E’s arbitration with Panoche Energy Center (“Panoche”), however, proved that: 1) Panoche’s PPA assigned responsibility for GHG costs to Panoche (“Panoche contractually agreed to procure AB 32 allowances at its expense.”⁵⁷⁶); 2) at the time Panoche signed the PPA, it understood that it would be responsible for paying future GHG emissions costs (“Panoche agreed to comply with AB 32 and the cap-and-trade regulations ...”⁵⁷⁷); and 3) the PPA already provides for Panoche’s recovery of GHG costs and provides a payment mechanism for that recovery ([Power Purchase Agreement] “section 4.3 provides a payment mechanism for GHG costs.”⁵⁷⁸). The arbitrators ruled for PG&E and against Panoche on all counts and issued a reasoned decision detailing the evidence they heard and the rationale for their ruling. The arbitration was upheld by California’s 1st District Court of Appeals. Therefore, PG&E reiterates that Panoche does not meet the requirements for receiving Transition Assistance, including for the third compliance period, because it is *not* a party to a legacy contract.

Furthermore, PG&E believes that the ability to request and obtain a free allocation of allowances from ARB is hindering meaningful and complete renegotiation of contracts to address GHG costs. The board’s direction to staff to provide PEC assistance throughout the cap-and-trade program’s current statutory authorization (2018-2030) effectively removes any incentive for PEC to reach agreement with PG&E as requested by ARB. (PG&E4)

⁵⁷⁵ ISOR, Page 56.

⁵⁷⁶ See the arbitration judgement in Attachment 1 to PG&E’s March 16, 2018 Cap-and-Trade Workshop Comment Letter, Page 16: <https://www.arb.ca.gov/lists/com-attach/47-ct-3-2-18-wkshp-ws-VWUBNFRkVzIFMgQ8.zip>

⁵⁷⁷ Ibid, Page 25

⁵⁷⁸ Ibid, Page 30

Response: Regarding Panoche’s eligibility for legacy contract transition assistance, see Response to 45-Day Comments C-4.5. For more regarding this legacy contract situation and the possibility of renegotiation, see Response to 15-Day Comments C-4.2.

Support for Post-2020 Allocation Adjustment for Use of Natural Gas Prices

C-4.4. Comment:

SMUD also appreciates that the 15-Day language did not remove Section 95892(e), which was added in the 45-Day language. The staff presentation at the November hearing indicated the possibility that this provision would be removed, and it is appropriate that it was not. SMUD notes that the legacy allowances in question would have been provided earlier except for ARB’s action expecting a proposed CPUC decision to pass through some PG&E gas GHG costs in rates to be adopted. Since the final CPUC decision was adopted without a GHG pass through for the years 2015-2017, it makes sense to correct the record.

In addition, given the amount of time that has passed since the ARB first acted on their unfulfilled expectation, SMUD suggests that the allowances provided through Section 95892(e) be taken from the general pool of allowances, rather than from the industrial counterparties. This is a one-time fix, so not precedential. SMUD believes that taking the true-up allowances from the counterparties will place a surprise and perhaps unfair burden on these entities. Hence, SMUD suggests the following:

Legacy Contract Natural Gas True-up Allocation. Entities that received allowance allocation pursuant to section 95894 for vintage years 2015-2017, used natural gas rates subject to CPUC jurisdiction as part of their legacy contract pricing, and had a percentage of their vintage 2015-2017 legacy contract transition assistance discounted to reflect anticipated compensation for GHG costs in rates corresponding with the natural gas consignment percentage shall receive a legacy contract natural gas true-up allocation that equals the total quantity of allowances that were discounted from the vintage 2015-2017 allocations. This legacy contract natural gas true-up allocation shall only be provided in 2019 with vintage 2020 allowances. Entities shall receive this true-up allocation as a legacy contract generator with an industrial counterparty or a legacy contract generator without an industrial counterparty, as applicable, regardless of their current eligibility for legacy contract transition assistance pursuant to sections 95894(a)-(d). ~~Legacy contract counterparties will have vintage 2020 allocation adjusted by the legacy contract natural gas true-up allocation pursuant to section 95891(e).~~

SMUD believes that this small change can be directed as part of the Board action adopting all the proposed changes in this rulemaking. (SMUD3)

Response: The commenter mistakenly states that CARB has retained the initially proposed section 95894(e) in the adopted amendments. This language was not adopted. Thus, the commenter's request to change where the allowances come from is moot. For discussion of removing this initially proposed regulatory text from the 15-Day amendments, see Response to 45-Day Comments C-4.6. See also Response to 15-Day Comment C-3.11 regarding commenter's misunderstanding of the APA process.

Support for Removing Post-2020 Allocation Adjustment for Use of Natural Gas Prices

C-4.5. Comment:

P&G supports the removal of Section 95894(e), the Allocation to Legacy Contract Generators for Transition Assistance. Proposed Section 95894(e) was contrary to the ARB's original intent in adopting the Legacy contract provisions, which was to provide transitional allowances that encourages negotiating GHG costs into revised contracts. P&G is hopeful that these proposed revisions will move parties' efforts to renegotiate legacy contracts forward.

In addition, given the original intent of the legacy contract provisions, all or most parties should have already revised contracts by now to incorporate GHG costs – absent unusual circumstances not contemplated when the Legacy contract provisions were first promulgated. Given that some parties continue to seek legacy contract relief rather than renegotiate contracts, it's likely the legacy contract provisions as written have caused unintended outcomes, disincentivizing certain parties from renegotiating. To avoid this unintended circumstance, the ARB should clarify that the legacy contract provisions require an applicant to demonstrate actual cost exposure linked to legacy contract GHG emissions under 17 Cal. Code Reg. Sec. 95894(a)(3)(A). In making the determination of actual cost exposure, the ARB should consider all relevant factors, including the applicant's participation in quarterly auctions, purchases of allowances through bilateral transactions, or the free allocation of allowances provided to an applicant and its direct corporate associates. If an applicant does not demonstrate that it actually incurred the "cost of legacy contract emissions", then it should not be eligible for a legacy contract allocation under Section 95894.

P&G is hopeful that with the aforementioned amendments and clarification regarding cost exposure, the outstanding legacy contracts will be resolved prior to the next application deadline. (P&G4)

Response: New section 95894(e) was included in the 45-Day proposal to provide true-up allowance allocation to certain legacy contract generators, and the commenter supports the removal of this provision in the 15-Day proposal and in the adopted amendments. Thank you for the support. For discussion of removing this initially proposed regulatory text from the 15-Day amendments, see Response to 45-Day Comments C-4.6.

The commenter requests that CARB require a demonstration of Program cost exposure by legacy contract generators as a criterion for accepting applications for legacy contract transition assistance. This comment is outside of the scope of the 15-Day amendments. CARB believes that it is neither feasible nor appropriate to collect and assess such information for this purpose.

Concern with Removing Post-2020 Allocation Adjustment for Use of Natural Gas Prices

C-4.6. Comment:

...I want to call your attention to an issue that has developed, and that has -- SMUD will work with staff to resolve in the next year or so. So, when implementing legacy allowance provisions in the past, ARB staff cut SMUD's legacy contract allowances provided in the years 2015 through 2017 to reflect a proposed CPUC decision to pass on some GHG costs in gas tariffs. Understandably you don't want to provide us allowances if we're already getting compensated for that portion of our GHG costs. However, that CPUC decision did not happen as expected. No GHG costs were passed on in those years. The 45-Day language made SMUD whole and cured the cutback, reflecting the revised CPUC policy. However, the 15-Day language then removed the cure. So again, we expect to work with staff to resolve that issue in the future. ... (SMUD4)

Response: CARB staff understands the commenter's position, and CARB is committed to continuing to work with the commenter to assess the impacts from the changes in the CPUC decisions to address this matter. See Response to 45-Day Comment C-4.6 for more information on this topic.

D. COVERED SECTORS AND EXEMPT EMISSIONS

D-1. Exemptions

Removing Waste-to-Energy Exemption

D-1.1. Comment:

The State needs a consistent and equitable approach to achieving GHG reductions from the solid waste management sector. Board Resolution 12-33 called for CARB to develop just such an approach, but one still has not been developed. We are hopeful that one will be developed soon, and we look forward to being part of that process. However, until such an equitable approach is developed, a rush to judgment on the inclusion of WTE facilities in the cap & trade program while landfills face no cap & trade costs risks irreparable harm of waste being diverted from WTE to landfills. Decisions on the continued operation of the two remaining WTE facilities in California are being made on the basis of how CARB proceeds with its allowance allocation. Closure of facilities precipitated by an allowance approach that renders these facilities unsustainable economically will be permanent. As revised, we estimate the overall financial impact to the two WTE facilities to be \$52 M over the 12-year period from 2018 – 2030. This

substantial additional cost borne solely by WTE facilities in a competitive waste market dominated by landfills is not sustainable.

We have outlined several approaches that we think that allow for the continued operation of these two facilities. We look forward to working with CARB on these options as well as the long- term plan for reducing GHG emissions from the waste management sector.

Discussion:

We appreciate CARB's efforts to adjust the allowance allocation formula originally proposed in its September 4th proposal. However, CARB's revised methodology still imposes a sizable financial penalty on the two WTE facilities in California, while landfills have absolutely no compliance obligation under the cap & trade program. As revised, we estimate the overall financial impact to the two WTE facilities to be \$52 M over the 12-year period from 2018 – 2030, assuming that the state at least partially meets its organics diversion requirements under AB 1383. Even assuming that the state only minimally meets its diversion requirements, and the % of biogenic carbon reaching the State's WTE facilities is at 62% (the current level seen at the Stanislaus WTE facility), the financial impact is still \$35 M on just two facilities. This substantial additional cost borne solely by WTE facilities in a competitive waste market dominated by landfills is not sustainable. We cannot continue to operate facilities that are not economically sustainable.⁵⁷⁹

The disparity of treatment is egregious in its delivery of a policy signal in direct contrast to CARB and CalRecycle's own recognition of WTE as a lower carbon option for waste management. CARB and CalRecycle have both recognized these facilities as having lower GHG emissions than landfills.⁵⁸⁰ The undeniable goal of any cap & trade program is to explicitly encourage lower GHG emissions by providing a higher financial cost to more GHG intensive means of delivering a product or service. CARB's continued inclusion of the state's two WTE facilities in the cap whilst landfills are excluded defies logic, equity, and sound policy.

We firmly believe that the cap & trade program must be designed to ensure equitable treatment across all facilities and technologies operating within a given sector. Therefore, we oppose the proposed inclusion of WTE facilities in the program and the proposed allowance mechanism for WTE facilities as the current proposal fails to provide equitable treatment or the transition assistance needed to avoid an undue economic impact of the two remaining WTE facilities in CA.

⁵⁷⁹ We also cannot raise prices to waste generators to meet costs; the result would be rapid re-diversion back to landfills.

⁵⁸⁰ The well recognized GHG benefits of WTE facilities relative to landfilling, including by both CARB and CalRecycle, are presented in detail in our earlier comments dated October 22, 2018 and are included herein by reference.

The impacts of WTE's inclusion in the cap & trade program are fully known to CARB. In its 1st update to the Climate Change Scoping Plan, CARB explicitly recognized the risk of higher GHG emissions from uneven treatment in the waste management sector:

“Another approach is to add MSW Thermal facilities to the Cap-and-Trade program in 2015, while leaving other Waste Sector sources out. Under this approach, MSW Thermal plants would have an incentive to reduce their GHG emissions over time through control of input feedstock and other techniques. However, a challenge with implementing this approach is that MSW Thermal plants have a modest potential to reduce their GHG emissions. Over time, they may have to purchase more emissions credits, making them increasingly less competitive compared to traditional landfills. ***This approach would likely result in more GHG emissions if it results in an increase in MSW going to landfills.***”⁵⁸¹ [emphasis added]

CARB already understands how to provide equity within the waste management sector. In the same document, CARB noted two approaches that would provide a level playing field, both of which rely on treating the waste management sector the same way under the cap and trade program:

“Remove MSW Thermal Facilities from Cap-and-Trade post-2015

Under this option, MSW Thermal facilities would be removed from the Cap-and-Trade Regulation for the foreseeable future. This approach would put MSW Thermal facilities on a level playing field within the Waste Sector, where none of the methods of handling MSW would be subject to the Cap-and-Trade Regulation. ...

Add MSW Thermal Facilities and Other Waste Sector Sources to Cap-and-Trade in 2015

Under this approach, MSW Thermal facilities and other options for handling waste (such as landfills) would be subject to the Cap-and-Trade Regulation. This would provide a level playing field for power generation and potentially avoid increases in waste disposal at landfills from a reduction in combustion of MSW.”

Even without the requirement to purchase allowances, WTE facilities are under financial pressure. According to CalRecycle's 2015 report, WTE “is actually a more expensive alternative to landfilling in California when compared to the statewide median as well as the surrounding landfills.”⁵⁸² The Commerce Refuse-to-Energy Facility permanently

⁵⁸¹ See California Air Resources Board (2014) Proposed First Update to the Climate Change Scoping Plan: Building on the Framework, Appendix C – Focus Group Working Papers, Municipal Solid Waste Thermal Technologies

⁵⁸² CalRecycle (2015) Landfill Tipping Fees in California
<https://www2.calrecycle.ca.gov/Publications/Download/1145>

closed on June 26, 2018, citing the cost of continuing to operate. All of the waste is now going to landfills and generating addition GHG emissions.

By including WTE in the cap and not including landfills, CARB will create the perverse effect of incentivizing more waste to landfills resulting in increased GHG emissions. To resolve this issue, we ask for equitable treatment in the waste management sector, called for in board resolutions from 2011 and 2012, through the provision of transition allowances, as directed in Board Resolution 17-21.⁵⁸³

In move toward greater equity in the waste management sector, we are proposing several different options for transition assistance for consideration by CARB staff. Consistent with Board Resolution 17-21, the implementation of each option should expire in 2024 and replaced with an approach applied consistently across the entire waste management sector. Consistent with Board Resolution 12-33, such an approach should be comprehensive and address “the most appropriate treatment under the Cap-and-Trade program for all end-of-life management options for Municipal Solid Waste, including but not limited to, landfills, waste-to-energy, composting, and recycling.”

Option 1: Continuation of Existing Process Until Landfills are Capped

To date, the State’s two remaining WTE facilities have not faced a compliance obligation through 2017 because CARB has allocated emissions allowances equal to their facility’s reported, verified, and covered emissions from municipal solid waste. This approach has effectively resulted in consistent treatment within the waste management sector. We do not think this should be a permanent approach but will ensure equity until such time as a long-term approach for the entire waste management sector is developed.

Option 2: Energy – Based Allocation

For covered entities without a product benchmark, the existing regulation specifies the use of energy-based allocation calculation methodology specified in section 95891(c). Under this option, CARB would apply the exact same calculation to the two remaining WTE facilities in the State.

Possible regulatory language for Option 2 is included in Attachment A.

Option 3: Allocation based on Organics Diversion

As SB 1383 is implemented, organics will be diverted from the waste shed, potentially reducing the GHG benefits of WTE relative to landfilling currently recognized by both CARB and CalRecycle. As organics are diverted from the landfills, we proposed that

⁵⁸³ Resolution 17-21 does not impose a limitation on the transition assistance provided. The provision of full allowances, until such time as the rest of the waste management sector incurs a compliance obligation, is consistent with the original stated goal of transition assistance to “avoid imparting undue initial economic gain or loss to covered entities through allocation.” See CARB (2010) Initial Statement of Reasons, Appendix J: Allowance Allocation.

WTE's exposure to the cap and trade program would increase based on the actual organics diversion achieved in practice, based on CalRecycle's regular statewide waste characterization studies. This approach was proposed to CARB in comments dated January 20, 2017, which we refined in subsequent discussions. This approach best matches the science, and the effects of organics diversion on the benefits of WTE relative to landfills. We understand that staff rejected this Option, but we put it forward here as part of the larger discussion of how to achieve ARB GHG reduction objectives.

Option 4: Direct Regulation

WTE facilities are obligated to manage the MSW that is delivered to them, and as a result, have minimal ability to reduce stack emissions of CO₂. However, when viewed as part of a larger system, those communities that rely upon WTE could achieve GHG reductions from waste management more broadly. Mechanisms to reduce GHG emissions from the waste management sector could include adoption of AD and/or composting, increased recycling, additional metals recovery from WTE facilities, and reuse / recycling of ash. These mechanisms, or a combination thereof, could be implemented at the WTE facility, or as part of a broader approach.

These types of GHG reductions could be incentivized through direct regulation that provided the flexibility to implement waste management solutions that resulted in lower GHG emissions. As this regulatory approach were developed, CARB would need to temporarily implement one of the other options to preserve equity of treatment in the waste management sector.

Option 5: Inclusion of fossil-fuel combustion emissions in cap

WTE facilities combust fossil fuels both during start-up, shut-down, and, as needed, for control of the combustion process. WTE facilities also use fossil fuels in operating mobile equipment on-site. To incentivize GHG reductions from the combustion of fossil fuels, CARB could include the combustion of fossil fuels in the cap, while excluding those emissions associated with waste management, which would be managed by a comprehensive approach to be developed.

Attachment A – Proposed Regulatory Changes

Option 2: Energy – Based Allocation

§95870

(j) Allocation to Waste-to-Energy Facilities. Vintage 2020 allowances available for allocation to waste-to-energy facilities shall be calculated as set forth in section 95891(c)(f)(4). The Executive Officer will place vintage 2020 allowances in the annual allocation holding account of each eligible waste-to-energy facility by October 24, 2019. An amount of vintage 2020 true-up allowances will be placed in the annual allocation holding account of each eligible waste-to-energy facility by October 24, 2019 to account for 2018 and 2019 emissions.

§95871

(i) Allocation to Waste-to-Energy Facilities. Allowances available for allocation to waste-to-energy facilities each budget year shall only be calculated as set forth in section 95891(c)(f). The Executive Officer will place an annual individual allocation in the annual allocation holding account of each eligible waste-to-energy facility, by October 24 of each calendar year beginning in 2020 for allocation from the 2021 annual allowance budget and ending in 2023 for allocation from the 2024 annual allowance budget.

Attachment B – Discussion of WTE’s GHG Benefits Relative to Landfilling

WTE facilities were initially exempted on the basis of science and to ensure parity of treatment across the waste management sector. With CalRecycle’s recognition of the GHG benefits of WTE relative to landfilling (see excerpt below), it was clear that including WTE in the cap and trade program while landfills were excluded would result in unequal treatment within the waste sector, and potentially result in leakage of GHG emissions from a capped source, WTE, to an uncapped source, landfilling.

“Published LCA studies and best available published direct measurement data support CalRecycle staff’s general conclusions. CalRecycle staff concludes that the three existing California WtE facilities provide net avoided methane emissions over waste otherwise disposed in a California landfill. The net avoided emissions exceed non-biogenic emissions from burning of the fossil fuel-based components such as plastic in the WtE facility.”⁵⁸⁴

Since the initial exemption of the existing WTE facilities in 2012, the recognition of WTE as a source of GHG mitigation has grown. In 2014, CARB itself, concluded that WTE offers GHG reductions relative to landfilling:

“Preliminary staff estimates ... indicate that combusting waste in the three MSW Thermal facilities in California results in net negative GHG emissions, ranging from -0.16 to -0.45 MT CO_{2e} per ton of waste disposed, when considering that the waste would otherwise be deposited in landfills resulting in higher emissions.”⁵⁸⁵

In 2013 and 2014, the Center for American Progress and Third Way have both reviewed WTE and validated its GHG benefits.^{586,587} In addition, the Joint Institute for Strategic

⁵⁸⁴ CalRecycle. 2012. CalRecycle Review of Waste-to-Energy and Avoided Landfill Methane Emissions. Available at: <http://www.calrecycle.ca.gov/Actions/PublicNoticeDetail.aspx?id=735&aiid=689>

⁵⁸⁵ See Table 5 of California Air Resources Board (2014) *Proposed First Update to the Climate Change Scoping Plan: Building on the Framework, Appendix C – Focus Group Working Papers, Municipal Solid Waste Thermal Technologies*

⁵⁸⁶ Center for American Progress (2013) *Energy from Waste Can Help Curb Greenhouse Gas Emissions* <http://www.americanprogress.org/wp-content/uploads/2013/04/EnergyFromWaste-PDF1.pdf>

⁵⁸⁷ Third Way (2014) *Power Book: Energy from Waste*, <http://powerbook.thirdway.org/filter-web-app/energy-from-waste>, accessed November 26, 2014.

Energy Analysis (JISEA) operated on behalf of the U.S. Department of Energy's National Renewable Energy Laboratory, the University of Colorado-Boulder, the Colorado School of Mines, the Colorado State University, the Massachusetts Institute of Technology, and Stanford University published a report in 2013 after a review of solid waste management options for Boulder's municipal solid waste concluded WTE was a better option than landfilling:

"We find that MSW combustion is a better alternative than landfill disposal in terms of net energy impacts and carbon dioxide (CO₂)-equivalent GHG emissions.

"Life cycle assessment studies published in the literature have generally been consistent in suggesting that MSW combustion is a better alternative to landfill disposal in terms of net energy impacts and CO₂-equivalent GHG emissions. The results from this study match that expectation. In this report, WTE leads to a higher reduction in emissions compared to landfill-to-energy disposal per kWh production."⁵⁸⁸

Then in 2016, Berkeley Law released a report earlier this year in response to a request from the Governor's office, looking at the merits and demerits of energy recovery options for wastes remaining after reaching the state's 75% recycling goal. The authors conclude that:

"Harvesting these leftover materials as solid waste energy sources could provide multiple environmental benefits:

- complementing intermittent renewable energy, such as wind and solar, to offset fossil fuel- based energy sources and associated greenhouse gas emissions; [and]
- avoiding landfill emissions of methane (a potent greenhouse gas that is 28-34 times as strong as carbon dioxide over 100 years) by diverting wastes to energy, particularly organic wastes;"⁵⁸⁹ (COVANTA4)

Comment:

In Resolution 17-21, you directed staff to provide transition assistance for the compliance obligation that these facilities are now going to be under. We were concerned that this transition assistance was at such a level that it would threaten the continued viability of these facilities. Given that the CalRecycle diversion of organics from landfills regulations are not going to be effective until 2022 at the earliest and are

⁵⁸⁸ Joint Institute for Strategic Energy Analysis (2013) *Waste Not, Want Not: Analyzing the Economic and Environmental Viability of Waste-to-Energy (WTE) Technology for Site-Specific Optimization of Renewable Energy Options*. <http://www.nrel.gov/docs/fy13osti/52829.pdf>

⁵⁸⁹ Berkeley Law Center for Law, Energy & the Environment (2016) *Wasting Opportunities: How to Secure Environmental & Clean Energy Benefits from Municipal Solid Waste Energy Recovery*. <https://www.law.berkeley.edu/research/clee/research/climate/waste-to-energy/>

of unknown efficacy, we believe that we need waste-to-energy facilities as a waste management option. We're therefore very pleased that the Resolution 18-51 that will be before you has been further resolved that the Executive Officer will work with the existing waste-to-energy facilities on alternative methods for allocation for the purpose of additional transition assistance ending by 2025, et cetera. We're very pleased that we're -- that this language is in there. I noticed that it was not in the future Cap-and-Trade Rulemaking activity slide, but we hope that was just an oversight. As a result, we very much support the amendments before you today, and look forward to working with you and staff. (COVANTA5)

Comment:

Just here to thank you and your staff for incorporating the language in the resolution that explores additional transition assistance for waste-to-energy facilities, like the Southeast Resource Recovery Facility located in Long Beach. And that's it briefly. We look to -- look forward to working with you all in the months to come and thank you very much. (LONGBEACH2)

Response: See Response to 45-Day Comments D-1.1.

E. ELECTRICITY

E-1. Energy Imbalance Market (EIM) Imported Electricity

Support for 15-Day EIM Purchaser Approach

E-1.1. Comment:

WPTF and other stakeholders expressed serious concerns with staff's "EIM Purchaser" proposal in the 45-day amendment package. That approach would not have yielded significant benefits over the existing bridge solution, and problematically would have created compliance obligations for several new categories of electricity participants, without providing those entities with any means to control those carbon obligations.

In response to these concerns, staff have substantively revised the EIM Purchaser proposal in the 15-day package. This new proposal, as WPTF understands it, would limit the definition of EIM Purchaser to California utilities that participate in the real-time market operated by the California Independent System Operator (CAISO) and rather than assigning emission obligations to individual entities, would result in the retirement of utility-allocated allowances. Additionally, outstanding EIM emissions would now be calculated annually for the year, and distributed across these utilities proportional to retail sales, rather than on the basis of CAISO imbalances (i.e. unscheduled deviations) in each 5-minute interval.

WPTF appreciates the responsiveness of staff to stakeholder concerns regarding the original EIM Purchaser proposal, and supports the proposal as amended in the 15-day package. (WPTF2)

Comment:

II. GHG accounting for the Energy Imbalance Market (EIM)

LADWP believes that the proposal to address EIM emissions leakage through the direct retirement of allowances allocated to EDUs that are EIM Purchasers in the amount of each EDU's EIM Outstanding Emissions is an improvement over the 45-day EIM Purchaser proposal. LADWP agrees that the new proposal will better address concerns about effectively planning or managing compliance obligation from EIM Purchaser Emissions. (LADWP2)

Comment:

EDF applauds the modifications made to the proposed amendments to clarify the expansion of the cap and trade's application in the Western Energy Imbalance Market. In particular, the clarification of EIM purchaser now gives EDF comfort with our earlier concerns about reconciling this language with First Jurisdictional Deliverer. These clarifications will give regulatory certainty to market participants as they both buy and sell electricity. The EIM is a critical first step to reduce the amount of curtailment of fossil free resources, such as solar and wind, during periods of over-generation. Having this EIM clarification will allow for more trading certainty in this market. (EDF3)

Comment:

Energy Imbalance Market and Allowance Allocation

SDG&E reiterates its support for a simple and transparent method for assessing individual compliance obligations for secondary emissions associated with participation in the California Independent System Operator (CASIO) Energy Imbalance Market (EIM). SDG&E supports the changes in the 15-day language indicating that EIM emissions will be calculated using annual data for all time periods and that the calculation of EIM Purchaser emissions will be based on annual retail sales for each EIM Purchaser (defined as electric distribution utilities, or EDUs, that serve California load with EIM purchases and that also receive a free allocation of allowances).

SDG&E is in agreement that, as updated in the 15-day language, retiring EIM allowances from the free allowance allocation that EDUs receive under the Cap-and-Trade Program is an uncomplicated way of accounting for additional emissions associated with the EIM. However, given that EDUs will be retiring allowances on behalf of their entire service territory, CARB should adjust the allocation methodology to increase the allowance allocation to EDUs to cover this additional burden. (SDG&E2)

Response: Thank you for the support. See Response to 45-Day Comments E-1.2 for an overview of the adopted amendments and Response to 45-Day Comments E-1.3 addressing the EDU allocation methodology.

Concerns with 15-Day EIM Purchaser Approach

E-1.2. Comment:

EIM Amendments

SCPPA appreciates CARB's ongoing collaboration with the California Independent System Operator (CAISO) and Utility stakeholders towards accounting for outstanding GHG emissions from the Energy Imbalance Market (EIM). We recognize that this is a complex issue and that more work needs to be done. We had previously recommended (as had CAISO) that CARB continue with the "bridge solution" until more data is collected such that any determination and issues with future compliance obligations are fully understood. It is also very concerning that the potential impacts from the proposed 15-day amendments are still unknown to stakeholders this late into a rulemaking process. Therefore, though this rulemaking is being closed, SCPPA wishes to continue conversations with CARB, CAISO, and other utility stakeholders to better understand how amendments to the EIM GHG Accounting Methodology will be implemented.

SCPPA reiterates our previously raised concerns included in our 45-day comment letter that the following be a part of any final solution on the EIM GHG Accounting Methodology: ...

2. Enable future borrowing ability for compliance purposes;
3. Provide POUs with control for retaining, designating, and retiring vintage allowances; and ... (SCPPA3)

Comment:

EIM Outstanding Emissions

The 15-day changes make several revisions to the initial proposed amendments to the provisions regarding accounting for outstanding emissions associated with the CAISO EIM. NCPA is concerned that these suggested revisions will place a compliance obligation on EDUs that has nothing to do with those entities' behavior; as proposed, the EDUs will have no way take actions to avoid those emissions and related compliance obligations. NCPA urges the Board to direct staff to reject all changes to the EIM accounting provisions until a future rulemaking, and in the interim, direct CARB staff, the CAISO, and interested stakeholders to continue to work on a solution that accurately assigns the compliance obligation, including ensuring that the affected entity can take direct actions to reduce or eliminate that obligation. In the alternative, if the Board does move forward with proposed revisions to this section at this time, such revisions should be deemed interim, and the above referenced discussions should still be ongoing. (NCPA3)

Comment:

These comments discuss three issues: (1) the amendments addressing secondary dispatch in the Energy Imbalance Market (EIM) do not fairly allocate the emissions obligation...

1. The ARB Should Not Allocate the Secondary Dispatch “Outstanding Emissions Obligation” to Electric Distribution Utilities on a Load Share Basis.

TID, as a California Balancing Authority, is currently evaluating the benefits of joining the EIM. TID is concerned that, in the middle of a potential decision to join, that unanticipated, unrecoverable costs could be put on TID ratepayers, diminishing the potential benefits of TID’s participation in the EIM. TID is particularly concerned that if it joins the EIM, it would face a situation where it sees a considerable decline in its EDU allowance allocations due to the provisions in the 15 day language for the Cap-and-Trade and the Mandatory Reporting Regulation. These provisions would reduce the amount of allowances that a POU would otherwise be able to use to satisfy its compliance obligation based on the POU’s share of the “outstanding emissions obligation”. Under the proposed revisions to Section 95111 of the MRR, the ARB would calculate the total outstanding emissions obligation and then simply allocate that obligation to individual EDUs based on the retail load share of each EDU. While TID understands the administrative simplicity of this approach, its proposed regulations lack a nexus to each entity’s actual participation in the EIM and their role in causing the outstanding emissions obligation. That obligation should be governed by the nature of the EIM participant’s resources and load profile, not the total annual retail load figure. Without a nexus between the retail load share and the outstanding emissions obligation, this aspect of the proposed regulation is arbitrary, unfair, and will create a hurdle to EIM participation. For these reasons, the proposed EIM Purchaser language should not be adopted by the ARB. Instead, the ARB should continue to work with the CAISO to develop a market-based solution and until further market refinements can be completed, the ARB should extend the existing “bridge solution” indefinitely. (TURLOCKID2)

Comment:**II. Energy Imbalance Market Comments**

For a number of reasons, PacifiCorp continues to have significant legal and practical concerns with California Air Resources Board (ARB) regulation of secondary dispatch emissions, which result from activity entirely outside of California and with only a causal link to California load. For all of the reasons articulated in comments submitted on the 45-day language proposal, PacifiCorp also opposes the introduction of the EIM Purchaser concept. These concerns have not changed, however, they are not restated here. Rather, PacifiCorp’s focus is on the long-term consequences of ARB’s one-sided focus on out-of-state emissions and the need to re-evaluate the calculation of EIM Outstanding Emissions following changes implemented to the CAISO’s attribution methodology on November 1, 2018.

It is PacifiCorp's expectation that, following the change made to the resource attribution methodology implemented by the CAISO on November 1, greater quantities of energy from emitting resources will be attributed to California from EIM Entities. As PacifiCorp has noted previously, ARB's theory regarding secondary dispatch emissions deemed delivered to California via the EIM paints a one-sided picture of the overall emissions impact of California's participation in the EIM. This methodology captures emissions increases that occur well outside of California but at the same time ignores emissions reductions that also occur outside of California. This issue is not just about California's emissions accounting but is of critical importance to understanding and quantifying the environmental benefits of greater grid integration and of California's extensive renewable build-out. It is PacifiCorp's view that the ultimate decarbonization of its own resource portfolio will not be possible (or will come at much greater cost) without greater integration of the Western energy grid. At this stage, an approach by ARB that ignores the complete broader West-wide emissions picture is likely to delay regionalization and the faster and less expensive decarbonization benefits it will engender.

PacifiCorp recommends that ARB leave the door open to understanding and eventually reassessing the longer-term consequences of its currently one-sided emissions perspective. At the very least, ARB should seek a process to work with the CAISO to re-evaluate the emissions deemed delivered to California following the changed methodology adopted November 1. The CAISO's revised attribution methodology builds on the existing greenhouse gas bid adder design and results in a more accurate attribution of resources supporting EIM transfers to serve California load. ARB's proposed changes are not informed by changes in the attribution of resources supporting EIM transfers. PacifiCorp recommends that the ARB maintain its current approach at least until it can evaluate the effect of changes made by the CAISO to address ARB's concern regarding secondary dispatch emissions in the EIM.

(PACIFICORP2)

Comment:

We look forward to working with CARB staff now next year in a new Cap-and-Trade Rulemaking on our concerns with potential implementation issues on the CAISO EIM GHG accounting, and look forward to working with any amendments with CARB and the CAISO to address potential concerns in that regard (SCPPA4)

Comment:

...And secondary emissions from the EIM market. It is unclear what the impact of the EIM participant methodology will be on the EIM market. A lot of new analysis needs to be done, and is in the works to understand the secondary emissions issue and the impacts on the market. We would add to this direction to develop and implement a simple estimation based, or similar method, to provide additional allowances to cover the ratepayer cost burden of transportation and building electrification load growth,

removing the cap-and-trade barrier to pursuing these vital State GHG reduction policies. ... (SMUD4)

Comment:

And so the district is very sensitive to potential costs of reducing its emissions. And that concern has kind of come to a head in a couple of years, both in the proposed regulations and the plans for moving forward with the regulations. The first is in respect to the Energy Imbalance Market. TID is not currently a participant in the EIM, but is considering joining the EIM. And as part of that decision process, we'll need to weigh the potential cost of losing allowances as part of the secondary dispatch emission obligations. So we're appreciative of the staff continuing to look at this in a follow-on rulemaking. ... (TURLOCKID3)

Response: See Responses to 45-Day Comments E-1.2 and E-1.5 addressing why the adopted amendments allocate responsibility for EIM emissions leakage to electrical distribution utilities (EDUs) who purchase from the EIM and receive allowance allocation, based on retail sales, Response to 45-Day Comments E-1.3 on the simplified implementation of EIM Purchaser requirements, and Response to 45-Day Comments E-1.6 on the annual calculation of EIM Outstanding Emissions and EIM Purchaser Emissions.

One commenter suggests that an EIM Purchaser's responsibility should be tied to the EIM Purchaser's resources and load profile. EIM outstanding emissions specifically address emissions leakage occurring in the EIM algorithm. This is separate from an EIM Purchaser's use of other resources to serve its load outside of the the 5-minute market. It is unclear to CARB how a particular EIM Purchaser's general resource or load profile would be applicable to assigning EIM Purchaser Emissions. See Response to 45-Day Comments E-1-6 on how the current methodology is accurately calculating EIM Purchaser Emissions and addresses the potential for unintended impacts on electricity market behavior.

Staff will continue to work with EDUs to ensure full understanding of the adopted amendments. As part of this rulemaking process, CARB reached out to all entities that would potentially be impacted by the new EIM Purchaser requirements with details on the proposed changes and offered to provide specific information about how the changes could impact them. Each year, CARB will notify each EIM Purchaser of its EIM Purchaser Emissions (i.e., its share of EIM Outstanding Emissions) in a manner that is timely for making allowance allocation distribution requests and managing compliance obligations. It is also possible for EDUs to estimate their EIM Purchaser Emissions based on publicly available data. Staff's assessment, based on 2016 and 2017 public data is that, on average, one percent of allowances allocated to EIM Purchasers each year will be directly retired.

The adopted amendments were designed to incorporate any reductions in EIM Outstanding Emissions resulting from recent changes implemented by CAISO to limit bid quantities in EIM. To the extent CAISO's changes reduce total EIM Outstanding Emissions, they will also reduce the share of EIM Outstanding Emissions for which each EIM Purchaser is responsible. CARB will continue to assess and report on EIM emissions leakage and work with CAISO and stakeholders to develop possible solutions to emissions leakage resulting from the EIM algorithm in the algorithm.

Request for Clarification of 15-Day EIM Purchaser Approach

E-1.3. Comment:

II. GHG Accounting for the Energy Imbalance Market (EIM)

A. PG&E Requests Additional Description of the Required Data and Formulas

PG&E appreciates ARB staff's engagement with stakeholders on this topic and would like to acknowledge that the changes in the Modified Regulation for outstanding GHG emissions address some of the concerns that PG&E raised with the previous approach in the 45-day Draft Regulation. However, PG&E requests ARB provide more detail on the modified approach in order to make sure that PG&E and other stakeholders completely understand the proposal.

As PG&E has interpreted the Modified Regulation, the California Independent System Operator (CAISO) would operate EIM essentially as it does today. For each resource bid into EIM, EIM would limit the deemed import into California to the minimum of:

- The limit on the import specified in the resource's bid and
- The difference between the maximum dispatch level specified in the bid and the base schedule for the resource.

EIM only considers as-bid, GHG costs for emissions from imports deemed sourced from the specific resources in its dispatch and pricing. EIM would track the resulting emissions from the several resources using the unit specific emissions rates as it does today and assign responsibility for the emissions to the responsible resource as determined by EIM.

ARB would next calculate the total emissions caused by imports by multiplying the total imports determined in EIM by ARB's unspecified emission rate⁵⁹⁰. ARB would finally calculate the outstanding emissions by subtracting the resource-specific GHG emissions for the deemed imports from the total emissions. ARB would track the outstanding emissions over the year and reduce the allocation of allowances to

⁵⁹⁰ PG&E requests CARB to clarify that energy dispatched on resources outside California owned or under long-term contract to California load serving entities would not be considered as contributing to total emissions from imports as calculated using the unspecified resource emission rate.

participating Electric Distribution Utilities (EDUs) in the next-year's allocation by the amount of the outstanding emissions pro-rata to their retail loads.

This avoids two issues that PG&E had identified with previous efforts:

- CAISO does not have to modify the EIM to include the cost of allowances for emissions from secondary emissions in the dispatch and pricing which CAISO and its stakeholders found problematic.
- The approach partially addresses concerns of over collecting revenue for allowances for actual emissions in EIM that arise if requirements to buy allowances for outstanding emissions are allocated to purchasers of energy in EIM after the EIM has run without EIM considering the cost of those allowances in its dispatch and pricing.

PG&E requests staff confirm that this interpretation of the Modified Regulation is correct and since the issues involved are complex, we also request explicit description of the data required and formulas to be used to ensure that there is no misunderstanding. (PG&E4)

Response: The adopted amendments place the responsibility for addressing EIM emissions leakage, which is not captured by the EIM algorithm, on EIM Purchasers, which are limited to electrical distribution utilities that participate in EIM and receive free allowance allocation. CARB will directly retire allowances allocated to EIM Purchasers in the amount of their EIM Purchaser Emissions. See Response to 45-Day Comments E-1.2 for further description of the adopted amendments. The data and formulas that will be used to calculate EIM Outstanding Emissions and EIM Purchaser Emissions can be found in the adopted amendments to the Mandatory Reporting Regulation. CARB encourages commenters to work with CAISO to address concerns about the EIM algorithm.

Timing of Compliance and Allocated Allowances

E-1.4. Comment:

However, ARB staff should take steps to coordinate the Cap-and-Trade compliance schedule with the timeframes needed for allocating compliance instruments and evaluating the associated financial risk of unforeseen compliance obligations. In particular, verified emission reports are due to ARB by August 10 and Publicly Owned Utilities (POU) have until September 1 to submit their POU Allocation Distribution Form. To facilitate advanced planning on these important allowance compliance matters, LADWP recommends that ARB staff inform POUs of their EIM Outstanding Emissions well in advance of the Allocation Distribution Form deadline. Such advance notice will allow POUs to plan and determine the most appropriate allocation distribution amount. (LADWP2)

Comment:

In addition, regarding the unknowns in the rulemaking, SCPPA would also like to continue the conversation with CARB to: ...

2. Give POUs a longer lead time on outstanding emissions for meeting the September 1 deadline; (SCPPA3)

Response: Thank you for the comment. CARB appreciates the timing concerns expressed by the commenter and is committed to implementing the adopted amendments in a manner that will provide EDUs with sufficient notice and time to support EDU compliance with the September 1 allowance allocation distribution request deadline. See also Response to 15-Day Comment E-1.2.

*Request to Retain Bridge Solution***E-1.5. Comment:**

The modified text would establish a compliance obligation and accounting rules for Energy Imbalance Market (EIM) outstanding emissions.⁵⁹¹ Consistent with its comments on ARB's initial proposed amendments issued in September 2018, the ISO continues to recommend that ARB not adopt these amendments. Instead, ARB should maintain its existing "bridge" approach for EIM outstanding emissions for the 2019 cap and trade compliance year. This approach will allow ARB and stakeholders to monitor enhancements the ISO recently made to the EIM to provide a more accurate attribution of which EIM participating resources support EIM transfers to serve California demand and reduce the potential for secondary dispatch that may result in EIM outstanding emissions.⁵⁹²

I. Background

The ISO supports efforts to track and reduce greenhouse gas emissions in California's electricity sector and will continue to work collaboratively with state agencies and stakeholders to advance this objective. Among other efforts, the ISO's implementation of the EIM has facilitated the integration of increasing amounts of renewable energy resources in the Western Interconnection that have helped reduce greenhouse gas emissions from the electricity sector. The EIM is an extension of the ISO's real-time market that helps balance supply and demand in the ISO balancing authority area as well as in EIM Entities' balancing authority areas. The use of the EIM permits other balancing authority areas to take advantage of the ISO's real-time market processes and facilitates economic transfers of power across the combined ISO and EIM footprint

⁵⁹¹ ARB issued modified text to proposed amendments for public comment on November 15, 2018.

⁵⁹² The phenomenon known as secondary dispatch occurs because least cost dispatch has the effect of attributing EIM transfers to lower emitting participating resources based on their combined energy bid and greenhouse gas bid adder. Other, potentially higher-emitting, resources may need to backfill this energy attribution in order to serve load outside of the ISO.

based on available transmission capability. These transfers have in part supported the operation of non-emitting clean resources. Since its inception, the EIM has avoided the curtailment of over 734,437 MWh of renewable output in the ISO balancing authority area, which has displaced an estimated 314,258 metric tons of carbon dioxide equivalents.⁵⁹³ As more renewable energy resources develop in the West, the EIM will continue to facilitate these emission reductions. ARB should acknowledge that the EIM creates significant emission reduction benefits across the region as ARB considers rule changes related to EIM outstanding emissions.

Under ARB's current cap and trade and mandatory greenhouse gas reporting regulations, ARB treats EIM transfers serving ISO demand in California as electricity imports. ARB relies on the ISO's market results as reported by EIM participating resource scheduling coordinators to identify resources that support those transfers and applies a specified source emission rate to those imports. ARB imposes reporting and compliance obligations on EIM participating resource scheduling coordinators representing these resources.

In response to stakeholder concerns that the ISO's least cost dispatch in the EIM may result in secondary dispatch when EIM transfers serve California demand, ARB adopted regulatory changes to account for emissions associated with the potential for secondary dispatch. These changes established an interim approach or "bridge" to account for what ARB identifies as EIM outstanding emissions. To account for EIM outstanding emissions, ARB currently calculates the difference between total EIM transfers at ARB's unspecified source emission rate less the total resource-specific emissions attributed to EIM participating resource scheduling coordinators as a result of the ISO market optimization. ARB retires allowances designated by ARB for auction that remain unsold in ARB's Auction Holding Account for more than 24 months in the amount of EIM outstanding emissions. In addition, the ISO conducted a stakeholder process to design changes to its EIM bidding rules to develop a more accurate attribution of which EIM participating resources support EIM transfers to serve California demand and reduce the potential for secondary dispatch. The ISO implemented these enhancements on November 1, 2018.⁵⁹⁴

II. ARB should maintain its current "bridge" approach for the 2019 cap and trade compliance year.

The modified text issued by ARB would amend its regulations to recognize an EIM Purchaser as a compliance entity for EIM outstanding emissions. These entities would include electric distribution utilities operating in California that directly or indirectly (through a scheduling coordinator) purchase any electricity through the EIM to serve

⁵⁹³ See Western EIM Benefits Report Third Quarter 2018 dated October 29, 2018, Table 7 at 14, available at <https://www.westerneim.com/Documents/ISO-EIMBenefitsReportQ3-2018.pdf>.

⁵⁹⁴ The federal Energy Regulatory Commission issued an order accepting the ISO's tariff revisions on October 29, 2018: <http://www.ferc.gov/CalendarFiles/20181029141944-ER18-2341-000.pdf?csrt=15248796463017711957>.

California demand. ARB would calculate the emission intensity of EIM outstanding emissions at the unspecified source emission rate less any resource-specific emissions attributed to EIM participating resources by the ISO's market optimization. Under the modified text, each EIM Purchaser would receive a share of EIM outstanding emissions based on total retail sales and ARB would retire corresponding allowances allocated to the EIM purchasers.

The ISO encourages ARB not to adopt the proposed amendments. ARB should maintain its current "bridge" approach through at least the 2019 reporting year to assess the magnitude of secondary dispatch emissions that may occur under the ISO's new EIM bidding rules. ARB could then use such information to guide what, if any, regulatory changes are necessary to address any remaining secondary dispatch effects. (CAISO2)

Comment:

CMUA recognizes that crafting a regulatory solution to the stated concern regarding Energy Imbalance Market ("EIM") outstanding emissions is a complex and difficult task. Even before the advent of the California Independent System Operator's ("CAISO's") market and the commencement of the EIM, sales into California caused changes in how resources were utilized in other parts of the West.

CMUA has expressed several concerns with the general approach reflected in the 45-day language, and most of those concerns are applicable to the 15-day language as well. First, CMUA members are participants in the CAISO's real time market and as such will be exposed to additional costs as electric distribution utilities ("EDUs"). In addition, the Sacramento Municipal Utility District ("SMUD") through the Balancing Authority of Northern California ("BANC"), as well as the Los Angeles Department of Water and Power ("LADWP"), have signaled their intent to become EIM Entities and have executed relevant agreements with the California ISO to effectuate this choice. SMUD/BANC's participation in EIM is set to go live in April 2019, with LADWP scheduled to commence EIM participation in 2020. Thus, public power has a direct stake in the proper resolution of this matter.

Despite active management of their own portfolios, the market behavior of the individual EDUs will have little bearing on their exposure to this additional cost as proposed under the 15-day language. This is for two reasons. First, in many cases, load imbalances are largely out of the control of the individual entity. Second, the cost allocation is proposed to be on a load ratio share, which has no likely relationship to the actual imbalances caused by the EDU. A fundamental tenet of sound policy is that it should provide the appropriate incentives to modify behavior and tracks cost causation principles. The proposal contained in the 15-day language does not comport with those principles.

CMUA also objects to the failure of the regulatory proposal to account for the demonstrated emissions reductions that have accompanied EIM. The CAISO's reports

indicate that the optimization of resources through the CAISO has lowered overall emissions and reduced curtailment of renewable generation. CMUA is dismayed that the proposed regulation fails to take into account these benefits while increasing obligations for California EDUs to retire allowances for emissions over which they have no control.

Finally, the mechanism for identifying the Outstanding Emissions was just approved and implemented at CAISO. There is almost no operational history or data to review to understand the magnitude of the outstanding emissions and the impact on California EDUs.

For all of the above reasons, CMUA urges the Board to retain the current “bridging solution” and take the time to gather experience and data before assessing whether a change is needed to account for Outstanding Emissions. (CMUA2)

Comment:

In addition to providing these individual comments, TID also supports the comments of the Joint Utilities Group and the California Municipal Utilities Association. (TURLOCKID2)

Comment:

D. Energy Imbalance Market

Abandon the EIM Participant Approach: SMUD strongly opposes the changes in the 15-day language and the earlier 45-day language that abandon the use of CARB’s current “bridge solution” for dealing with potential “outstanding” (secondary dispatch) emissions in the Energy Imbalance Market (EIM). The bridge solution preserves environmental integrity in relation to emissions leakage by retiring allowances to cover the estimated outstanding emissions in the (EIM). The EIM participant approach as proposed in the 45-day language and modified in the 15-day language does nothing to enhance environmental integrity. Instead, the changed approach risks disruption of the EIM market just as it is expanding and bringing greater environmental benefits to California and the western region.

It is striking that the California Independent System Operator (CAISO), a collaborative state energy governing body that hosts the EIM market, recommended that the ARB retain the bridge solution through 2019 in 45-day comments – a recommendation ignored by CARB in the 15-day language. The utility EIM Participant approach proposed in the 15-day language imposes additional rules and costs on utility EIM participants simply for being part of the market, not in any manner related to a choice to procure or not procure of GHG emitting resources. As such, the 15-day language complicates EIM market participation, and in addition raises the potential that utility ratepayers may be overcharged for the obligation.

The “EIM Participant” language, as currently drafted, is essentially a GHG emissions “penalty” structure on California utilities that are either direct participants in the EIM, or LSEs within the CAISO service territory who have EIM energy cleared on their behalf. The GHG penalty is wholly disconnected from the decisions made by these EIM participants, other than the decision to participate in the first place. As such, the GHG penalty does not encourage any particular GHG reduction in the EIM market transactions. It is no wonder that the CAISO and market participants are recommending that the ARB abandon this problematic solution as they are worried about the unintended impacts on the EIM market place.

SMUD recommends that CARB accept the CAISO advice, which is supported by many market-involved stakeholders and retain the bridge solution at least through 2019. There is no loss of environmental integrity by doing so, because any estimated secondary dispatch emissions are still covered.

Take Time To Observe and Analyze EIM Market Changes: SMUD notes that the new CAISO market rule intended to lessen secondary dispatch has just gone into effect, hence there has not been adequate time for CARB Staff to analyze the effects of the rules approved by FERC to evaluate whether they have shifted the patterns of resource dispatch in the EIM, and whether they demonstrate a lower *potential* amount of energy “leakage” and therefore a lower potential for emissions “leakage.” CARB Staff’s decision to move forward at this time without information about the market changes is not justified by any urgency to retire the “bridge solution” currently in place. The bridge solution fully covers the estimated outstanding emissions – there is no “leakage” that remains to threaten environmental integrity.

SMUD notes that when FERC approved the new CAISO tariff, it mandated studies (165 FERC ¶ 61,050), which when completed will provide solid data on the effects of this EIM market change.

“In order to provide greater transparency to the market, we require CAISO to submit an informational report to the Commission on or before January 1, 2020. The CAISO notes that developing these reports will require collaboration with stakeholders to gain consensus on the concept of secondary dispatch and to determine the format and content of the reports. The report must describe the extent to which situations similar to the scenario described by DMM in its comments to CAISO’s stakeholder process materialize during the 12 months after the implementation of CAISO’s tariff revisions.” (165 FERC ¶ 61,050 at 18).

FERC goes on to say that it will not require a report on the “magnitude of secondary dispatch that continues to occur and the historic and ongoing volume of emissions associated with such secondary dispatch as PG&E and Powerex request” (*Id.* at 19) because these reports would be “focused on compliance with current and potential future CARB regulations regarding GHG emissions, and are not necessary to assess the justness and reasonableness of CAISO’s proposal.” (*Id.* at 19). However, it seems

that CARB could have CAISO produce these exact reports by January 2020, and thus provide the agency with more representative data on how secondary dispatch and potential emissions leakage has been affected by this tariff change. The FERC mandated study is absolutely material to the issues in CARB's rulemaking and MRRs.

Retaining the bridge solution for an additional period provides time for experience with the newly FERC-approved CAISO tariff to affect secondary dispatch. Retaining the bridge solution also provides time for better calculation of any remaining secondary dispatch emissions, improving accuracy over the rough approach of assuming that all EIM participation should be associated with the default emission factor in the calculation to determine outstanding emissions. In addition, retaining the bridge solution provides time for the study ordered by FERC on secondary dispatch emissions when approving the CAISO tariff aimed at reducing the problem. Lastly, retaining the bridge solution provides time for CARB to conduct additional analysis of the secondary dispatch problem as the EIM expands and the CAISO tariff change is in place...

Bottom Line: Nearly all of the proposed EIM-related changes in the 45-day and 15-day language for the Cap and Trade and MRR regulations should be rejected by the Air Board. (SMUD3)

Response: Commenters request CARB maintain the "bridge solution" to address EIM emissions leakage that is in the current Regulation and express concern that the adopted amendments do not incorporate a carbon price signal into the EIM algorithm. See Responses to 45-Day Comments E-1.2 and E-1.4.

Some commenters express concern that calculation of EIM Outstanding Emissions will overstate EIM emissions leakage and that the adopted amendments may disincentivize EIM participation. See Response to 45-Day Comments E.1.6 on how the current methodology is accurately calculating EIM Outstanding Emissions and staff responses on the potential for unintended impacts on electricity market behavior.

Some commenters express concern the adopted amendments place the responsibility for EIM Outstanding Emissions on EDUs. The adopted amendments place the responsibility for addressing EIM emissions leakage on the electric sector, specifically, on EDUs who purchase electricity from the EIM and receive free allowance allocation. It is equitable and appropriate for these entities, rather than the Program as a whole, to be responsible for the environmental integrity of the Program related to EIM emissions leakage. See also Responses to 45-Day Comments E-1.2, E-1.5 and E-1.6.

CARB will continue to monitor EIM emissions leakage, and the adopted amendments do not preclude staff from proposing updates in the approach to accounting for EIM emissions leakage in future rulemakings, if warranted. The adopted amendments are also not in conflict with CAISO's recent modifications to limit bid quantities in EIM. To the extent that CAISO's recent modifications

reduce EIM Outstanding Emissions, EIM Purchaser Emissions for each EIM Purchaser will also be reduced.

One commenter expresses support for the comments of the Joint Utilities Group, but the Joint Utilities Group did not submit any comments on the 15-Day proposal. See Responses to 45-Day Comments E-1.3 and E-1.4 for responses to Joint Utilities Group comments on the 45-Day proposal.

Calculation of EIM Outstanding Emissions and EIM Purchaser Emissions

E-1.6. Comment:

CARB should also update the unspecified emissions factor, which has not been recalculated since the Cap-and-Trade program began. ...

SDG&E also reiterates its support for contrasting any EIM outstanding emissions against the GHG benefits of California's renewable energy exports in the EIM. The benefits of balancing supply and demand of renewable energy across the Market include reduced curtailment and support for the continued development of renewable resources to serve the regional market. (SDG&E2)

Comment:

NCPA also urges the Board to direct that staff continue to work with the California Independent System Operator (CAISO) and affected stakeholders to refine the apportionment of compliance obligations for outstanding emissions in the CAISO energy imbalance market... (NCPA3)

Comment:

Prior to Abandoning the Bridge Solution, CARB Should Revise the Calculation of Outstanding Emissions: As quarterly data published by the CAISO shows,⁵⁹⁵ EIM transfers into California (to date, only into the CAISO and PacifiCorp West balancing areas) are generally balanced quite evenly with EIM transfers out of California over the course of the year (certain seasons result in more imports vs. exports depending on California's renewable output relative to load). The public EIM reports do not break out exports by generation type, but other CAISO reports detail the reduction in renewable curtailment in the state because California is exporting excess renewables in the middle of the day, thus displacing emitting resources elsewhere in the West with non-emitting resources. Furthermore, a high proportion of EIM entities are served primarily by hydropower,⁵⁹⁶ meaning that the emissions profile of these entities is even *lower* than California.

The net flows across state-borders as well as the GHG intensity of the current EIM participants should be reviewed again by agencies and stakeholders before CARB

⁵⁹⁵ <https://www.westerneim.com/Documents/ISO-EIMBenefitsReportQ3-2018.pdf>

⁵⁹⁶ Idaho Power, Powerex, Portland General, Puget Sound Energy.

proceeds to impose the GHG cost on specific entities rather than covering the obligation through the overall Cap and Trade market. The current MRR use of the default emission factor applied to all EIM imports should be reconsidered as the CARB moves to a permanent solution to replace the bridge solution. A significant portion of the present EIM is dominated by GHG-free hydropower, which often has a lot of room to adjust output. It is merely an assumption that marginal imbalances will be served by gas power plants with capacity factors less than 60% (the genesis of the current default emission factor). In addition, the data underlying the default factor is over 10 years old, and the entire number should be reconsidered prior to moving away from the bridge solution.

The calculation of “outstanding emissions” today rests on out of date assumptions and imperfect information about the EIM market as it grows. The intent of the calculation is reasonable – to identify potential “emissions leakage” associated with the EIM market, so that obligation can be “covered” by retiring allowances in one way or another. However, it is not reasonable to impose an expensive carbon obligation on specific entities that have no responsibility for the emissions identified, rather than on the overall Cap and Trade market. A solution based on better data and that allocates the carbon obligation to those EIM participants that cause the secondary dispatch. (SMUD3)

Comment:

SCPPA reiterates our previously raised concerns included in our 45-day comment letter that the following be a part of any final solution on the EIM GHG Accounting Methodology:

1. High accuracy on compliance obligation determinations; ...
4. Minimize EDU reporting requirements by obtaining data directly from CAISO based upon settlement data.

In addition, regarding the unknowns in the rulemaking, SCPPA would also like to continue the conversation with CARB to:

1. Update the default emission factor or have CAISO calculate an annual default emission factor since the one currently in use was calculated in 2008; ...
3. Consider the implications for a shift to retail sales reporting and verification for EDUs participating in the CAISO 5- minute market in future rulemakings;
4. Base the total EIM Emissions on the net of purchase and sales;
5. Base utility allocations equitably, based on their proportionate contribution to EIM market emissions. (SCPPA3)

Response: See Response to 45-Day Comments E-1.6 on the calculation of EIM Outstanding Emissions, the use of the default emissions factor, and how the shift

to using retail sales to apportion responsibility for EIM emissions leakage simplifies and streamlines reporting requirements.

EIM Purchaser Requirements and MJRP Entities

E-1.7. Comment:

PacifiCorp's comments are provided in two parts: one from its perspective as a Multi-Jurisdictional Retail Provider (MJRP) serving retail load in California and one from its perspective as an electricity importer via the EIM.

I. MJRP Comments

PacifiCorp reiterates its concern with respect to the interaction between the calculation of Outstanding EIM Emissions and the development of PacifiCorp's compliance obligation associated with its retail service territory in California. Because PacifiCorp's California retail service territory is not part of the CAISO balancing authority area, energy reported as imported to California by PacifiCorp as an EIM Participating Resource Scheduling Coordinator is not used to serve PacifiCorp's California retail load. The simultaneous treatment of PacifiCorp as an EIM Participating Resource Scheduling Coordinator and an EIM Purchaser creates an inequitable double penalty for PacifiCorp's retail customers in California.

PacifiCorp, as an EIM Participating Resource Scheduling Coordinator, contributes to the total sum of "Deemed Delivered EIM Emissions" as well as the total amount of electricity delivered to California via the EIM through energy imports and emissions reported pursuant to section 95111(h)(1)(C). Energy and emissions delivered to California by PacifiCorp as an EIM Participating Resource Scheduling Coordinator are considered wholesale electricity sold from specified sources and are subtracted from the calculation of PacifiCorp's system emission factor pursuant to section 95111(b)(4). The subtraction of low- and zero-emitting specified source energy from the calculation of PacifiCorp's system emission factor serves to increase the system emission factor and therefore the compliance obligation associated with PacifiCorp's California retail service territory.

At the same time, under the proposed EIM Purchaser framework, the same low- or zero-emitting energy reported as delivered to California by PacifiCorp as an EIM Participating Resource Scheduling Coordinator will be multiplied by the default emissions factor to calculate the EIM Outstanding Emissions. Applying responsibility for those emissions to PacifiCorp's California retail service territory as an EIM Purchaser creates a second penalty where PacifiCorp's California retail service customers will be made responsible for emissions not used to serve their load. PacifiCorp is differently situated than other electrical distribution utilities in California because its California retail load is not served by energy reported as imported to California by EIM Participating Resource Scheduling Coordinators. To avoid this inequitable treatment for PacifiCorp retail customers in California, PacifiCorp should not be considered an EIM Purchaser. In the alternative, low- and zero-emitting specified sources deemed delivered from

PacifiCorp resources to California should not be subtracted from the calculation of PacifiCorp's system emission factor or should be subtracted at the default emissions rate as used to calculate EIM Outstanding Emissions. (PACIFICORP2)

Response: The commenter requests clarification on the treatment of MJRP entities under the adopted amendments. See Response to 45-Day Comments E-1.7.

Clarification of Allocation Holding Account

E-1.8. Comment:

In the proposed 15-day modifications to Section 95852, the Executive Officer will annually retire allowances from the "Allocation Holding Account" in the full amount of the most recent data year's EIM Outstanding Emissions. The term "Allocation Holding Account" is not defined or otherwise referenced in the regulation. There is a holding account (as described in Section 95831), limited use holding account (as described in Section 95831), and annual allocation holding account (as described in Section 95831). Since the intent is "the direct retirement of allowances allocated to EDUs," it appears that the Allocation Holding Account is referring to the *annual* allocation holding account, the account where allowances are held prior to being allocated to the compliance account or limited used holding account. However, if the Allocation Holding Account is referring to the general holding account (subject to the holding limit), this will create a situation where EDUs will have to purchase allowances in order to be able to transfer into their general holding account to be retired for the EIM Outstanding Emissions. LADWP recommends that ARB clarify the definition of Allocation Holding Account, and in so doing, confirm that it is not referring to the general holding account. (LADWP2)

Response: The commenter requests that CARB clarify the account from which allowances will be retired for EIM Outstanding Emissions under the adopted amendments. CARB will directly retire allowances for EIM Outstanding Emissions from the allocation holding account, which is defined in section 95831(b)(1) of the Regulation and is under the control of the Executive Officer.

The Regulation defines "allocation holding account" separately from "annual allocation holding account." These accounts are different, and they have different purposes. Section 95831(b)(1) defines the "allocation holding account" as the account under the control of the Executive Officer into which compliance instruments are registered when they are created; allowances are allocated to covered entities each year from this account. Section 95831(a)(6) defines "annual allocation holding account(s)" as an entity account for an entity that receives allowance allocation. The adopted amendments refer to retiring the allowances for EIM Outstanding Emissions from the State's allocation holding account, not from an entity's annual allocation holding account or general holding account. As such, the adopted amendments do not impact individual entity annual allocation holding accounts or holding limits for general holding accounts.

Future Modifications to EIM

E-1.9. Comment:

EDF continues to encourage the Board to consider how these rules might need to be revised given the planned expansion of Energy Imbalance Market with the Energy Day Ahead Market. EDF suggests that from the perspective of the issuance of allowances and compliance with the carbon market, this language is important to consider now since market participants will see very little difference between the spot market and an expanded day ahead market. The new language on page 6, indicating 2021 in subsequent years directing the executive officer to annually retire allowances may need to be modified to accommodate this EIM expansion into the EDAM. (EDF3)

Comment:

Powerex is greatly appreciative of CARB Staff's support of improving the approach to the highly complex issue of accounting for and retiring allowances in connection with greenhouse gas ("GHG") emissions that support electricity transfers to California in the Energy Imbalance Market ("EIM").

As the EIM continues to grow its footprint, Powerex encourages CARB Staff to continue to monitor the issue. Should a better solution to account for GHG emissions within the CAISO market be developed, and/or if the CAISO's newly adopted EIM GHG accounting methodology is not sufficiently effective, CARB Staff may need to re-evaluate this issue.

While Powerex appreciates the efforts to date, Powerex reiterates its concern that the current approach to calculating and allocating emissions in the EIM is not workable in the context of a potential regional day-ahead market. A regional day-ahead market, with far greater volumes of electricity transfers, including into California, and thus potentially far greater GHG emissions, would pose an even greater challenge to achieving California's policy objectives absent the development and application of a more robust GHG attribution framework.

Therefore, as Powerex discussed in its previous comments,⁵⁹⁷ when CARB conducts its rulemaking to implement SB100, Powerex urges CARB to consider undertaking a comprehensive review of its rules and requirements related to electricity imports into California. (POWEREX)

Comment:

⁵⁹⁷ October 22, 2018 Comments of Powerex Corp. on California Air Resources Board Proposed Amendments to the Regulation for Mandatory Reporting of Greenhouse Gas Emissions at page 8 (available at <https://www.arb.ca.gov/lists/com-attach/6-ghg2018-VWdTZQY2UToLIFJj.pdf>).

And finally, we look forward to working with the ARB staff and CAISO regarding the EIM accounting strictures. And we think that that market is likely to change as it develops, and would like to work with staff to develop that. (PG&E5)

Response: Thank you for the comments. The adopted amendments only address emissions leakage related to the EIM and do not address emissions leakage issues related to future expansion of the day-ahead market or regionalization. CARB will work with CAISO and stakeholders to address any issues that may need to be addressed in the day-ahead market. See also Response to 45-Day Comments E-1.3.

Retirement of Allowances for EIM Under the Bridge Solution

E-1.10. Comment:

The only [EIM-related] parts of the Cap and Trade regulatory change proposals that should be retained are the parts that change the retirement of allowances from the pool of unsold allowances to retirement from the general pool of allowances in the market. (SMUD3)

Response: The commenter refers to the change in the adopted amendments to alter the source of allowances for retirement under the “bridge solution” and calls for the rejection of other portions of the amendments. See Response to 15-Day Comment E-1.4.

EIM Interaction with Existing Day-Ahead Market

E-1.11. Comment:

B. Additional Questions For Future Consideration Stemming from the EIM’s Interaction with the Existing Day-Ahead Market

PG&E would like to raise some questions regarding how the calculation of outstanding emissions in EIM, as described in the Modified Regulation, will interact with CAISO’s *current* Day-Ahead Market (DA Market). PG&E does not expect these questions to be addressed in the current rulemaking but would like to flag them now for future discussion after this rulemaking is complete. PG&E recognizes that the Modified Regulation is not intended to address a future, expanded Day-Ahead Market (DA Market), and as such, the questions below are with respect to the existing DA Market, not an expanded DA Market.

PG&E is unclear on how emissions caused by changes in schedules between the DA Market and EIM will be handled. In the DA Market, traders can offer imports into California. The traders will include the cost of required allowances for emissions caused by the imports in the price that they offer. If the resources supplying the imported energy are owned by or under long-term contract with CA load serving entities, it is our understanding that they will only be responsible for allowances based on their

actual emission rates. Otherwise, they will be responsible for allowances based on the unspecified emission rate.

As long as traders honor their DA awards and submit e-tags based on the DA cleared schedules, PG&E does not foresee any problems. We would like more information on how outstanding allowances will be calculated if a trader backs out of the DA trade in EIM by not scheduling the trade in EIM.

Suppose that a trader submits a bid for an import into California in the DA market with the cost of allowances required based on the unspecified emissions rate. The cost of allowances based on the unspecified emission rate should be incorporated in its energy bid in the DA Market.

If the import were scheduled in the DA Market, the DA Market prices would cover the cost of producing or procuring the energy and the cost of the allowances needed to schedule the import in the DA Market. As a result, the trader would be compensated for the needed allowances in the DA Market.

Now suppose that the trader backs out of the import in EIM by not submitting an e-tag for the import. The energy supplied by the import in the DA Market must be replaced in EIM. The trader whose import is reduced would buy back the energy at the relevant EIM prices. The emissions costs used in setting the EIM prices would be the cost of EIM deemed emissions for the replacement.

One area that is unclear is whether the replacement of the energy from the trade in EIM could result in outstanding emissions in EIM. If it can, the EDUs and their customers would bear the costs of outstanding emissions through the reduction in their allowance allocation the following year. However, the energy import in the DA Market was paid a price that reflected the cost of allowances needed for the DA Market schedule even though the import was not scheduled and the energy was not delivered to California. It seems that EDU customers may pay prices in the DA Market that cover the cost of allowances for the import scheduled in the DA Market while being exposed to future reduction of allowances for outstanding emissions if the import was not scheduled in EIM. It would seem that equity would require that the trader either not be compensated via DA Market prices for allowances if the import was not scheduled in EIM or the trader should be exposed to the cost of allowances for outstanding emissions when the trade is canceled in EIM.

As stated above, since this issue is complex, PG&E requests additional information to ensure an accurate understanding of ARB's approach, which may mean that the concern raised above is unfounded. PG&E appreciates ARB's efforts in this area and looks forward to ongoing discussions. (PG&E4)

Response: The commenter raises questions about how the EIM algorithm attributes costs. This issue is outside the scope of this rulemaking and CARB's authority. Nonetheless, CARB is accurately capturing EIM emissions leakage as

described in Response to 45-Day Comments E-1.6. CARB encourages the commenter to work with CAISO to address this concern.

F. OFFSETS AND OFFSET PROGRAM IMPLEMENTATION

F-1. General Offsets

General Support for Offsets

F-1.1. Comment:

CLFP believes that the proposed regulatory package meets the mandates under AB 398 and strengthens the program overall. We support:...

- CARB's continued use of a market-based program, including the use of high-quality carbon offsets in the cap-and-trade program. CLFP views offsets as critical component in achieving the statutory GHG emission reductions at the lowest cost possible – as mandated under California's climate legislation (CLFP3)

Response: Thank you for the support.

F-2. Direct Environmental Benefits in the State (DEBS) Requirements

Clarifying DEBS Criteria for Waters of the State

F-2.1. Comment:

2. Direct Environmental Benefits to the State [§95989]

Air Products supports the clarification of the criteria for offsets to be determined to have provided Direct Environmental Benefit to the State (DEBS). Expanding the potential range of environmental benefits to reduction of adverse impacts on waters of the state will increase the number of emission offset projects which qualify for DEBS designation and increase in-state environmental improvements achieved. (AIRPRODUCTS)

Response: Thank you for the support. However, CARB staff would like to note that the clarification did not expand the definition of DEBS (see Response to 45-Day Comment G-3.11).

DEBS for Credited Emissions

F-2.2. Comment:

Our comments herein pertain to the requirements for Direct Environmental Benefits in State (DEBS). We note the proposed language for Section 95989(b):

Any project located outside the State of California may submit the following information to ARB to enable a determination of whether the project provides direct environmental benefits in the State. Such determination must be based on a showing that the offset project or offset project type provides for the reduction

or avoidance of emissions of any air pollutant that is not credited pursuant to the applicable Compliance Offset Protocol in the State or a reduction or avoidance of any pollutant that is not credited pursuant to the applicable Compliance Offset Protocol that could have an adverse impact on waters of the State.

ACR's concerns center on the proposal to limit the scope of DEBS, with respect to both air and water, to emissions "not credited" by Compliance Offset Protocols. We suggest that such a restriction is inconsistent with the expansive statutory and proposed regulatory language defining DEBS as, "the reduction or avoidance of emissions of *any* air pollutant in the state or the reduction or avoidance of *any* pollutant that could have an adverse impact on waters of the state" (emphasis added). The legislative record contains no indication that credited GHG reductions were not to be among the "any" pollutants that qualify. The qualifier "not credited" should be deleted.⁵⁹⁸

Furthermore, ACR recommends deletion of the phrase "supporting a claim that the offset project or offset project type results in this type of reduction or avoidance of any pollutant in the State" that appears at the end of Sections 95989(b)(1), 95989(b)(2), and 95989(b)(3). Inclusion of this language is an imprecise and unnecessary repetition of requirements in section 95989(b), resulting in potential for confusion and inconsistency. (ACR3)

Response: CARB continues to agree that GHGs constitute air pollutants. However, to read AB 398 as allowing GHG reductions credited under the offset program to constitute "any pollutant" for the purposes of DEBS would render the DEBS provision superfluous. The primary purpose of offset projects is to reduce GHG emissions; if these credited offset project GHG emissions satisfied the DEBS requirement, then every offset project would satisfy the DEBS requirement, and the DEBS requirement would have no purpose. As such, CARB staff declined to make the requested changes. See also Responses to 45-Day Comments G-3.1 and G-3.4.

Recommend Ensuring DEBS Method Recognizes Non-Credited GHGs

F-2.3. Comment:

Dentons US LLP, on behalf of Foam Supplies, Inc. and True Manufacturing Co., Inc., submits the following comments with respect to the proposed language for Direct Environmental Benefits in the State, we respectfully suggest that the proposed language adds an ambiguity, though it was clearly intended to eliminate an ambiguity.

As proposed, some might argue that no project which follows an approved Compliance Offset Methodology to reduce GHGs would satisfy DEBS unless it also reduces another pollutant in the State. The staff discussion makes no mention of such an intent. We recommend that the phrase "to the extent" be added, for both air and water pollutants. This would avoid an interpretation which denies ANY credit for GHG reductions at all.

⁵⁹⁸ ACR has elaborated more extensively in our letter dated Oct. 22, 2018.

The Compliance Offset Methodologies do not recognized all GHG reductions in a project. Moreover, if a methodology can be demonstrated as overly conservative and that the real reductions are greater than those credited, then the DEBS criteria should be deemed satisfied.

We would suggest the modified language read as follows:

PROPOSED

§95989. Direct Environmental Benefits in the State.

(b) Any project located outside the State of California may submit the following information to ARB to enable a determination of whether the project provides direct environmental benefits in the State. Such determination must be based on a showing that the offset project or offset project type provides for the reduction or avoidance of emissions of any air pollutant to the extent that is not credited pursuant to the applicable Compliance Offset Protocol in the State or a reduction or avoidance of any pollutant to the extent that is not credited pursuant to the applicable Compliance Offset Protocol that could have an adverse impact on waters of the State. (DENTONS2)

Response: CARB staff agrees that GHG emissions reductions that are in excess of those credited by a Compliance Offset Protocol may be eligible for DEBS determination. However, CARB staff believes the existing language already allows for this and staff is unclear what the commenter’s proposed modifications do to further clarify the intent. The ISOR (p. 167), Summary of New Section 95989(b) explicitly states “GHGs other than those for which the project receives credits” can be used to determine DEBS eligibility. As such, CARB staff declines to make the requested changes. See also Response to 45-Day Comment G-3.1.

Only Allow In-State Projects to Qualify for DEBS

F-2.4. Comment:

Stop Trading Away California Clean Air for Cheap Out-of-State Offsets!

The people of California must demand the proposed cap and trade extension address the Legislature’s concern with the use of out-of-state offsets. AB398 sponsored by Assm. Eduardo Garcia [D-56] promised to limit the ability of large polluters to use out-of-state offsets to avoid direct emission reductions and trade away our clean air benefits. The intent was to ensure the program is addressing local clean air and water issues. To address these concerns, one-half of all offsets were supposed to come from within the State.

The Air Resources Board proposed regulation creates an industry endorsed loophole where any offset from outside the State can be classified as providing “Direct Environmental Benefits In the State” (DEBS). If local reductions are too scarce or

costly, polluters could simply increase their use of out-of-state offsets beyond limits imposed by AB398. This abandonment of Disadvantaged Communities threatened by hazardous air and water pollutants must be stopped.

We demand the proposed regulation be revised to clarify that offsets designated as providing DEBS be generated from locations within the State and establish proof of environmental co-benefits as promised in AB398. We will not stand by and allow our clean air to be shipped out of state to satisfy large polluters interests in cheap out-of-state offsets!

Staff cites the dormant commerce clause as an excuse for this “clever workaround” to increase out-of- state offsets, but actually create a conflict with the commerce clause where none exist under AB398. Offset are treated equally without exclusion or discrimination under AB398. The staff proposal; however, creates a discretionary review process that, on its face, would exceed the States right to restrict interstate commerce. The staff is clearly exceeding its authority to adjudicate the commerce clause and instead should adhere to the direction given by our elected officials.

Our climate emergency requires principled action with honesty, integrity, and consideration of others. If the board, staff, and corporate profit-takers don't have that courage now, then when? (QCR2)

Response: The commenter appears to misunderstand the plain language of AB 398. The commenter asserts that AB 398 mandates at least one-half of all ARB offsets credits used for compliance come from in-state projects; there is no such requirement in the statute. The requirement is that no more than one-half of the quantitative usage limit can come from projects that do not provide DEBS. DEBS may be able to be demonstrated from projects that occur out-of-state. In order for an out-of-state project to demonstrate DEBS, CARB must make the determination based on the documentation provided. CARB staff has already explained in the Initial Statement of Reasons how all in-state project types satisfy the DEBS requirement, so no further analysis is required for these projects. Moreover, The availability or cost of compliance instruments does not influence the statutorily prescribed limits.

With respect to the commenter's assertions that the statutory DEBS provisions do not implicate any Commerce Clause concerns while CARB's proposal does, see Responses to 45-Day Comments G-3.3, G-3.8, and G-3.14.

Request for Broad Application of DEBS Standard

F-2.5. Comment:

Shell Energy generally supports the proposed language of Section 95989(a) and (b). The language should be expanded, however, to provide that out-of-State offset projects will be judged under the DEBS standard based on factual information demonstrating

that the project is beneficial to the California environment. To that end, the regulation should state that environmental impacts of offset projects on watersheds, wildlife and air quality are “regional” in nature. Projects providing benefits within a defined geographical region should be recognized as eligible for DEBS treatment. As noted in its earlier comments, Shell Energy supports a broad application of the DEBS standard to out-of-State offset projects.

For example, as Shell Energy noted in previous comments, tribal authorities have established offset projects that provide economic benefits to tribal communities located within and outside California. These tribal initiatives should be supported, in light of the State’s commitment to foster improved conditions in disadvantaged communities. Support for tribal initiatives that harness and quantify GHG emission reductions should extend beyond 2020 by allowing out-of-State offset projects, including offset projects sponsored by tribal authorities, to demonstrate compliance with the DEBS standard. The ARB should make this clear in the regulation.

Transparency is critical to determining eligibility under the DEBS standard. More specificity around DEBS eligibility for out-of-State projects should be provided. As offset project applications are approved or rejected, the characteristics and types of projects eligible for DEBS treatment should be made public to create uniformity and expedite future applications.

In addition, the language of Section 95989(d) should be amended to recognize as “DEBS-eligible” the offsets from all projects listed with an Offset Project Registry (“OPR”) by December 31, 2020. All such offset projects should be “grandfathered;” i.e. deemed to have met the DEBS requirement. The current proposed language of Section 95989(d) would require offset projects that have already incurred significant costs to meet the new DEBS standard on and after January 1, 2021. This approach would be unfair to offset project developers and offset purchasers.

Entities that have made a significant investment in an offset program based on existing rules should not be subject to additional requirements or restrictions after January 1, 2021. Any offset project that is listed in accordance with Section 95975 before 2021 should be exempted from (or automatically grandfathered under) the DEBS standard. The offset credits associated with pre-2021 projects should be fully eligible for use to meet a covered entity’s compliance obligation. (SHELL2)

Response: CARB staff also supports application of the DEBS standards to out-of-state projects. As specified in the adopted amendments in section 95989, all out-of-state projects, including tribal projects, may provide documentation of DEBS for CARB review for making a DEBS determination. If appropriate, out-of-state projects will be classified as providing DEBS. With respect to commenter’s suggestion that DEBS should be determined regionally and include effects on wildlife, CARB staff adhered to the statutory definition of direct environmental benefits in the state from AB 398, as noted in the ISOR (pp. 49-54).

With respect to application of the DEBS requirements to projects that have already received ARB offset credits, CARB staff noted that AB 398 specifies certain conditions (e.g., DEBS) related to the surrender of instruments in the post-2020 period of the Cap-and-Trade Program. ARB offset credits issued prior to 2020 are still valid for surrender post-2020. Thus, these offset credits will be subject to the AB 398 conditions (e.g., DEBS). This does not result in a retroactive application of a statutory mandate, but implementation, prospectively, of the legislative requirement in AB 398. As such, the amendments also include provisions enabling existing projects that are located outside the State to seek the same DEBS determination as new out-of-state projects. Projects listed in the OPR are free to pursue the DEBS determination or not, as makes sense for the project. See Response to 45-Day Comment G-3.20.

CARB staff is committed to continuing to implement a fully transparent offset program and, as is the current practice, will post offset project-related materials on a public website for all stakeholders to review. Thus, after the first few determinations have been made, other projects will have a better idea of the application of the specific DEBS criteria and determinations prior to completing any financial feasibility studies. CARB staff will work to make a determination of DEBS eligibility as quickly as possible after receiving complete and accurate information.

Opposition to 15-Day DEBS Amendments

F-2.6. Comment:

The Indigenous Peoples Reducing Emissions (“IPRE”) does not support the proposed amendments to Section 95989 regarding direct environmental benefits to the State (“DEBS”), and strongly urges the Board not to adopt the proposed changes. IPRE reiterates the points made in our previous comment letter⁵⁹⁹ and encourages the Board instead to clarify the DEBS provision as suggested in that letter. (IPRE2)

Response: Please see Responses to 45-Day Comments G-3.3, G-3.4, G-3.20, and G-4.1.

F-3. DEBS Determination Process

Timing of DEBS Determination

F-3.1. Comment:

1. Quantitative Usage Limits on Designated Compliance Instruments – Including Offsets Credits [§95854(e)]

⁵⁹⁹ November 5, 2018 IPRE Comments on Proposed Amendments to Cap-and-Trade Regulation, submitted electronically on November 5, 2018 (available at <https://www.arb.ca.gov/lists/com-attach/87-ct2018-VWcBN1RkVzxVfgU0.pdf>) and in person at the November 15, 2018 Board meeting (available at <https://www.arb.ca.gov/lists/com-attach/95-ct2018-AWhRJ1wvUmQDKwZ2.pdf>).

Air Products strongly recommends that ARB take proactive steps to ensure qualifying DEBS projects are clearly identified in advance of Compliance Period 4 to mitigate any risks to the administration and application of the proposed changes to §95854 and allow covered entities to develop and execute their long-term compliance strategies.
(AIRPRODUCTS)

Response: CARB staff does not believe that application of the DEBS criteria and determination will create market uncertainty, mainly because it is unlikely that a significant number of pre-2021 credits will be surrendered in 2022. As identified in section (C)(1)(a)(ii) of Appendix C: Updated Standardized Regulatory Impact Assessment (SRIA), there were approximately 69 million ARB offset credits in entity accounts when the SRIA was released, with a maximum potential demand of 100 million ARB offset credits for the third compliance period. Therefore, CARB staff expects it is likely that the majority of pre-2021 credits will have been surrendered by 2021. Out-of-state projects can also begin submitting documentation for DEBS determination in early 2019 (and until December 31, 2021), for both new and existing projects, which should allow plenty of time for the majority of projects to have the determination made significantly in advance of the first compliance event subject to the DEBS requirement (November 1, 2022, for 2021 emissions). This will allow any offset holders enough time to rebalance their offset portfolio as necessary. See Response to 45-Day Comment G-3.20.

CARB staff will review each DEBS request as expeditiously as possible, for both new and existing projects. The review timeframe will depend on the number of projects that submit DEBS documentation immediately after the regulatory modifications are approved, and CARB staff is committed to ensuring that all projects receive a timely and thorough review by staff.

F-4. Protocols and Regulatory Compliance

Regulatory Compliance for Forest Offsets

F-4.1. Comment:

The California Forest Carbon Coalition is writing to request an explanation for how the November 15th amendments to the proposed California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation (“Cap-and-Trade Program”) will clarify the criteria as to when a violation of a local, state or national environmental, health or safety (EHS) regulation results in the ineligibility or invalidation of forest based carbon offsets.

The CFCC submitted two sets of comments^{600, 601} to the “Preliminary Discussion Draft” with suggestions for clarifying the current Regulation and reducing uncertainty as to how and when an EHS violation would result in the ineligibility or invalidation of forest offsets. Unfortunately, we did not see significant changes in the November 15th draft that we believe would reduce this uncertainty and encourage the development and enrollment of more California forestlands in the California Cap and Trade Program.

We appreciate any guidance you can provide on this question. (CFCC3)

Response: Please see Responses to 45-Day Comments G-1.1 and G-7.2.

Limits of Regulatory Compliance

F-4.2. Comment:

As currently structured, the offset program is only available (as a practical matter) to obligated entities that can carry the risk of “buyer liability” for offset invalidation. The offset invalidation provisions of Section 95985 should be updated to assign liability to the seller in the event of fraud, while providing a “buffer pool” or “environmental integrity account” to cover invalidation associated with material overstatement and regulatory non-conformance. Establishing a mechanism that provides transparency and assigns liability according to specific types of invalidation will encourage development of more offset projects, both in-state and out-of-state.

Shell Energy supports Appendix E insofar as it provides that offset projects are not subject to invalidation for non-GHG related occupational health and safety violations that have no impact on the validity of the offsets themselves. However, the following “conditional” language of Appendix E should be stricken: “... if the noncompliance has been resolved prior to the submittal of a request for issuance of ARB offset credits pursuant to Section 95981.” This language is unduly restrictive and contrary to the goal of limiting the bases for offset invalidation to relevant concerns. If an offset project’s regulatory noncompliance is not related to the GHG emission reduction purpose of the offset, the validity of the offset should not be contingent upon resolution of the regulatory noncompliance issue.

Finally, the regulation and Appendix E should be more specific and include both violations of the Occupational Health and Safety Administration and the Federal Mine Safety and Health Act. ARB protocols specifically recognize projects that capture and destroy methane in abandoned mines; clarifying the language to include both OSHA and MSHA violations in Appendix E is reasonable and should be adopted. (SHELL2)

Response: The modifications to the invalidation provisions proposed as part of this rulemaking were narrowly tailored, and the requested modifications would be

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https://www.arb.ca.gov/lispub/comm/bccomdisp.php?listname=ct2018&comment_num=52&virt_num=48

⁶⁰¹ <https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=ct2018>

for a future rulemaking. As such, these comments are outside the scope of the current rulemaking and CARB staff would need to assess them to determine if they could be considered in a future rulemaking. CARB staff notes that the buyer liability requirement in the Regulation continues to ensure the integrity of the offsets program, and that despite some of the concerns raised by commenters, CARB has issued over 143 million offset credits to date.

CARB staff disagrees that changes are necessary in Appendix E. Although occupational health and safety violations and reporting violations, which are currently part of the regulatory compliance evaluation, have now been proposed as outside the scope of the regulatory compliance evaluation, CARB will still only issue ARB offset credits to “good actors” who show efforts toward resolving these regulatory compliance issues prior to ARB offset credit issuance. Additionally, Appendix E references any violation of “occupational health and safety regulations, statutes, or law” issued by any agency; there is no need to name the Occupational Health and Safety Administration and the Federal Mine Safety and Health Act specifically. See also Response to 45-Day Comment G-1.8.

G. SUPPORT FOR THE PROPOSED AMENDMENTS

G-1. General

Support for Proposed Amendments

G-1.1. Comment:

CLFP urges CARB to move the regulatory package as proposed as expeditiously as possible. The amendments contained in the proposed regulatory package and this 15-day change notice provide needed adjustments that will provide the certainty that obligated entities require in order to plan for operations. CLFP members have invested substantial amounts of capital in compliance costs and new technologies in an effort to comply with the state’s ambitious environmental goals. This regulatory package will provide the necessary certainty and balance going forward. (CLFP3)

Comment:

EDF is pleased to support the adoption of this package ... (EDF4)

Comment:

I represent Crockett Cogeneration, LP, which supports the Cap-and-Trade Amendments before you today. ... Crockett supports adoption of the proposed Cap-and-Trade Amendments. (CROCKETTCOGEN4)

Comment:

SMUD supports the adoption of the Cap-and-Trade and Mandatory Reporting Amendments today. ... (SMUD4)

Comment:

Second of all, we support the Cap-and-Trade Regulation. We think that generally it is very well done, and we commend staff for getting it to the finish line. ... (SoCalGas)

Comment:

I represent a company, and myself of course also, support the Cap-and-Trade Program, have for many years, and do continue to support today with the adoption of these amendments. ... (PG&E5)

Comment:

I just wanted to appreciate the time and effort that the Board, and particularly the staff, put in to developing this amendment. Obviously, there was much going into the development of AB 398 and the legislative proposals going into this. But obviously, implementing that becomes quite a different task. Quite a bit of work has been spent -- time has been spent on that. And we appreciate the elements that come into this particular amendment that help address regulatory certainty. That is obviously very important to industry when it comes to allocating cost -- investment potential, creating new jobs, and certainly providing greater certainty in terms of those costs is very significant and influential in that decision. ... (CMTA4)

Response: Thank you for the support.

Support for Cap-and-Trade Approach

G-1.2. Comment

SCPPA continues to strongly support the Cap-and-Trade Program. It allows our Members to pass the value of allowance allocations directly on to all of their customers, including those in disadvantaged communities. The continuation of a well- designed Program allows our Member utilities to achieve continued progress in emissions reductions while minimizing ratepayer impacts. (SCPPA3)

Comment:

Cap-and-Trade plays a critical role in California's GHG reduction strategy and will be even more important as we move to make deeper, more ambitious GHG reductions from 2020 to 2030. It is therefore imperative to design a post-2020 program that will be sustainable and capable of driving the necessary GHG reductions...

PG&E continues to support Cap-and-Trade as a program that will help the state meet its aggressive environmental goals while maintaining a healthy economy. (PG&E4)

Comment:

TID remains supportive of the Cap- and-Trade and the state's efforts to address climate change. (TURLOCKID2)

Comment:

Conclusion

SDG&E believes that the viability and health of the post-2020 Cap-and-Trade Program can be strengthened by the appropriate application of the modifications directed by AB 398 and Board Resolution 17-21.

In the last two months, the United Nations Intergovernmental Panel on Climate Change (IPCC)⁶⁰² and the federal government of the United States⁶⁰³ have released reports urging an acceleration of efforts to address global climate change to avoid grave consequences. The findings of these reports have spurred new pressure to incentivize innovation in additional emissions reductions, including recommendations to increase pricing in the Cap-and-Trade program. Drastic increases in the price of Cap-and-Trade allowances would have destabilizing political and economic effects on the Program, including market uncertainty and economic leakage. Given that California is only responsible for approximately 1% of all global GHG emissions, the path to meaningful global reductions in GHG emissions is exporting the Cap-and-Trade Program to other jurisdictions. To achieve this, the program must be attractive to other governments and stakeholders, which can be accomplished by ensuring a well-designed, stable and sustainable Cap-and-Trade Program. (SDG&E2)

Comment:

Wanted to express again our strong support for the Cap-and-Trade Program. ... (SCPPA4)

Comment:

Turlock Irrigation District is broadly supportive of the Cap-and-Trade and taking a lot of different efforts right now to reduce its greenhouse gas emissions. ... (TURLOCKID3)

Response: Thank you for the support.

Support for AB 32 and SB 32 Goals

G-1.3. Comment:

Vernon Public Utilities has engaged with CARB staff to discuss the complex and interrelated issues associated with Cap and Trade regulations. We appreciate staff's willingness and efforts in that regard. Vernon Public Utilities (VPU) supports the goals of Assembly Bill 32 (AB 32) and Senate Bill 32 (SB 32) to achieve substantial greenhouse gas (GHG) emission reductions in a cost-effective manner that protects ratepayers and minimizes impacts to low-income communities. (VERNON)

⁶⁰² United National Intergovernmental Panel on Climate Change. Special Report – Global Warming of 1.5°C. 8 October 2018: <http://www.ipcc.ch/report/sr15/>

⁶⁰³ U.S. Global Change Research Program. Fourth Nation Climate Assessment, Volume II: Impacts, Risks, and Adaption in the United States. November 2018: <https://nca2018.globalchange.gov/>

Comment:

In submitting these comments, LADWP reaffirms its strong support of the Assembly Bill 32 (AB 32) and Senate Bill 32 (SB 32) goals of expeditiously achieving substantial greenhouse gas (GHG) emission reductions in a cost-effective manner that protects ratepayers and minimizes impacts to low-income communities. (LADWP2)

Response: Thank you for the support.

H. OPPOSITION TO THE PROPOSED AMENDMENTS**H-1. General***Opposition to Cap-and-Trade Approach***H-1.1. Comment:**

I think we've been clear in our opposition to the program, because it allows, you know, a lot of the disproportionate local pollution to continue in our communities, and because of the strong link between greenhouse gases and other, you know, co-pollutants like criteria and toxic emissions. So I want to just draw attention to a couple of things today. One is the recently published study by Cushing-Pastor and a larger research group highlighting the fact that regulated facilities have actually increased emissions since the program started. And, you know, that there is, you know, plenty of data on, you know, the disproportionate impacts in low income communities and communities of color. So I just want to, you know, highlight that, because it was recently published and updated over the summer. I'll say that we remain concerned about the same things that we've been talking about, the overallocation, the oversupply of allowances, the lack of justification for industry assistance, and the lack of meaningful analysis showing how exactly the price will drive the reductions that are called for in the scoping plan. So with that said, I'm -- you know, it's something to see in the resolution that there will be workshops and continuing work on this, and we look forward to continuing that. (CEJA2)

Response: The commenter raises a variety of concerns, but does not make a specific request pertaining to the proposed amendments, and the comments are therefore outside the scope of the proposed amendments. Notwithstanding this, see Response to 45-Day Comments K-1.3 for a discussion of how the Cap-and-Trade Program is expected to reduce criteria pollutant emissions. The commenter states some disadvantaged communities continue to experience higher exposures to criteria pollutants than other communities because of the cumulative impacts of air pollution from multiple sources located in these disadvantaged communities. See Response to 45-Day Comments B-1.7 for a discussion of the Cap-and-Trade Program and disadvantaged communities and the study by Cushing, Pastor, et al. As noted in Response to 45-Day Comment B-3.12, to date, 51 percent of the two billion dollars spent on California Climate Investments projects has provided benefits to disadvantaged communities, and

31 percent has been spent on projects located directly in disadvantaged communities.

The commenter requests CARB demonstrate how prices will drive sufficient reductions to achieve the SB 32 target. See Response to 45-Day Comment B-1.3 for the extensive modeling conducted as part of the 2017 Scoping Plan update and a discussion of opportunities that exist for effective oversight of the State's progress in meeting the SB 32 target. See also Response to 45-Day Comment B-2.1 for a discussion of allowance supply.

As stated in Response to 45-Day Comment B-2.1, CARB has determined the market is not in a state of oversupply that would jeopardize achieving the 2030 target. As stated in Appendix D to the ISOR, if it appears statewide emissions are not declining as needed, CARB will evaluate which sectors are not responding as anticipated, review all programs that cover those sectors, and ascertain why progress is slower than expected. CARB would then assess the best path forward to ensure California stays on track to meet the legislatively established GHG emissions targets. In the near term, Board Resolution 18-51 directs staff to continue monitoring allowance supply and to quantify and report to the Board, by no later than December 31, 2021, the volume of unused allowances from 2013 to 2020, including volumes held in private accounts, and the potential for unused allowances to hinder the ability of the Program to help achieve the SB 32 target. The Board further directed CARB staff to hold a workshop in 2019 to discuss potential methodologies to evaluate this topic.

With respect to the portion of the comment raising concerns on industrial allocation, see Response to 45-Day Comments C-1.1.

Opposition to Amendments Increasing Prices

H-1.2. Comment:

But I'm very disappointed, and I'm speaking in a very, very low tone voice, monotone voice, and not my Sunday morning voice. I'm disappointed and appalled, as some of the comments made by the Board members at the hearing in November, when myself, along with other community members, traveled here to Sacramento to share our concerns with the proposed price ceiling. I would say today that I am here to tell you that we are not an AstroTurf campaign whatsoever. We are real people with legitimate concerns about your decisions that will impact our local communities. As it stands right now, many low income Californians cannot afford to live near their places of work, because the cost of housing is so high. Increasing transportation costs will have a significant impact on those households in my community or either in our communities. The majority of the members of my local congregation or surrounding community already deal with escalated high gas prices as opposed to other areas of Southern California. I ask this Board to please consider the multitudes that will definitely be impacted should the Board decide to move forward with this. Consider single parent

family homes, consider those who are the minority who are simply just getting by and cannot afford another price increase of any kind. If you would bear with me a moment, please.

Consider the mom-and-pop stores that will be impacted. Consider those who commute weekly to and from work to their workplaces. Consider the cost to keep food on the table and meet the needs of the families. Consider the cost to keep the gas lights on from being disconnected. I'm in the trenches of my neighborhood and community every single week. I know perfectly well how my people in the community are living. I know perfectly well what the struggles and hardships are in my community. I know perfectly well what the complaints and the needs in my local community. And higher gas prices unfortunately is not the answer. (BMCLA3)

Comment:

I was here in November voicing my opinion and my concern about potential energy cost and fuel increases. And I'm just going to say that perhaps a decision has already been made or not. But just in case it is to adopt the new revisions, I participated in a case study for my business on how it would impact my business. And I'd like to offer -- I believe you guys have that information already. But moving forward, I'd like to participate with CARB side-by-side in the next couple years, so in case there is another consideration for a revisions or if this revision was the right thing to do, we'll be able to show exactly how it impacted a small business like myself and many others. (PGCS2)

Comment:

Our members are very concerned that, as proposed, the price ceiling for carbon credits will cause dramatically increasing costs if we get to the point of having to hit that carbon ceiling. And if that happens, those costs will absolutely be passed onto consumers in the form of higher fuel, and food, and services costs. Hard working Californians and business owners, particularly in the valley, already pay a premium to conduct business in this State, and cannot afford such a cost increase. The Legislature tasked the ARB with setting a reasonable ceiling for these credits in order to create a fail-safe to prevent a worst case scenario of a runaway credit market. By setting the ceiling prices too high, ARB would be setting the stage for exactly that worst case scenario. A well designed Cap-and-Trade Program has been shown reduce carbon emissions, but dramatic make increases in the credit ceiling prices that are proposed currently puts the program and the economy at unnecessary risk. BizFed Central Valley members urge ARB to set a reasonable ceiling price for Cap-and-Trade carbon credits. And we look forward to partnering with ARB in the future to make sure this program works for Central Valley residents. (BIZFEDCV2)

Comment:

We all traveled to Sacramento to share our opinion that the Board has not adequately taken into account costs to residents, businesses and the economy when setting the price ceiling for the cap-and-trade program.

During the hearing, we shared our concerns that the price ceiling your staff is proposing and the future impacts it could have on our cost of living.

However, we left the November 15 meeting disappointed. Several of the board members' comments were dismissive to our concerns as if we were confused and in need of a more rudimentary explanation.

But we do understand. We understand that the price ceiling is not currently proposed to be set at a level that will keep costs in check. And we understand what this means to small business and families.

Additionally, we want to address several of the issues that were mentioned by board members and staff to dismiss our concerns.

First, staff implied that we should not be concerned because individual households receive a climate dividend on their natural gas and electricity bills. However, this dividend is given to customers of Investor Owned Utilities (such as PG&E) but not for publicly owned utility customers such as LADWP or SMUD. And even though customers of PG&E, Edison, and SDG&E receive a small credit on their bill twice a year, this does not offset the impact of higher energy costs on small businesses. Energy cost increases place a greater burden on all of us and the overall economy.

This answer also does not take into account the increase cost for fuels. Commutes are long for those of us who do not have the luxury of living near our place of employment. Increases in fuel costs only exacerbate the burden felt by many working Californians.

Board members also attempted to characterize the price ceiling as a far-off, distant future or "worst case scenario". However, this "worst case scenario" is untenable for many, and must be addressed. Dismissing the impacts of this rule because it is "in the future" is irresponsible.

We support cap-and-trade and believe the intent of AB 398 is to set the right balance to reduce greenhouse gas emissions while not overburdening residents, businesses and our economy.

We want to engage in productive dialogue with you. We are the "real world" that some board members jokingly mentioned during the hearing. We encourage the Board to listen and engage us, not dismiss us. (LACVCOALITION)

Comment:

[Current Situation

- In 2017, California's Assembly Bill 398 was passed, re-authorizing the continuation of the cap-and-trade program. AB 398 has two provisions to help contain costs of California's climate change programs

- California Air Resources Board (CARB) must establish a price ceiling on cap-and-trade allowance prices; and

- CARB must set two intermediary containment prices (speed bump prices) at which allowances would be available for sale.

CARB is currently in the process of considering new regulations to operationalize those provisions of AB 398.

- Western States Petroleum Association retained National Economic Research Associates (NERA) to develop a proprietary economic model to assess the impact of proposed greenhouse gas policies on the California economy. NERA undertook a study using their proprietary New ERA modeling system to estimate the economic impacts of different ranges of values for these prices, with 6 scenarios in total, which are detailed in Appendix 2. All scenarios include a suite of the California specific complementary measures, and the cap & trade program with a 2030 target of 40% below the 1990 level GHG emissions... - WSPA5, WSPA6]

[...To illustrate the impact of these proposed new regulations, the NERA analysis was utilized to estimate the impact on Heyday Cafe, a small business restaurant within California's restaurant industry.

- In 2017, sales from California restaurants totaled \$82.2 billion.¹ Currently there are 92,000 restaurants and bars in California. 47,000 of these establishments are classified as small business¹. In 2018, there were 1.4 million eating-and- drinking-place jobs in California, from a total of 1.8 million restaurant and foodservice jobs, comprising 10% of total employment in the state¹... - WSPA5]

[...To illustrate the impact of these proposed new regulations, the NERA analysis was utilized to estimate the impact on PG Cutting Services, a small business within California's construction industry.

- Our approach may tend to underestimate actual costs of AB 398 on PG Cutting Services, perhaps significantly:

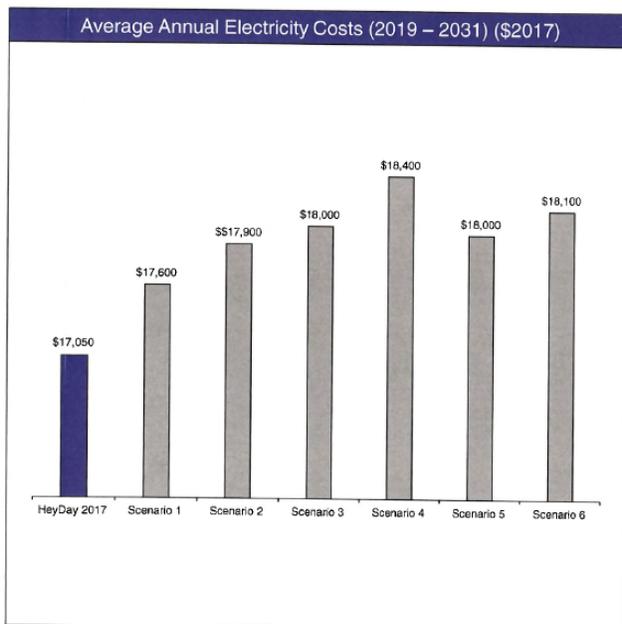
- The approach assumes a baseline cost that is stagnant to 2017 utilization of energy. It does not factor growth of the company over the analysis period. By context PG Cutting Services' revenues have been growing by 33% per annum between 2017 and 2019.

- The approach does not factor capital costs imposed by increased GHG standards. PG Cutting Services reports that past regulations have necessitated the acquisition of new equipment to meet the new air quality standards and backup equipment due to lower reliability of some new equipment as a result of new regulation.

- California had 68,900 construction firms, with 91% of them being small businesses. Construction contributed to \$107.5 billion (3.9%) of California's GDP of \$2.7 trillion. Private nonresidential spending totaled \$30.1 billion, while state and local spending totaled \$30.3 billion. Construction employment in August 2018 totaled 855,700... - WSPA6]

[Proposed regulations change average annual electricity costs from \$17,000 up to \$18,400

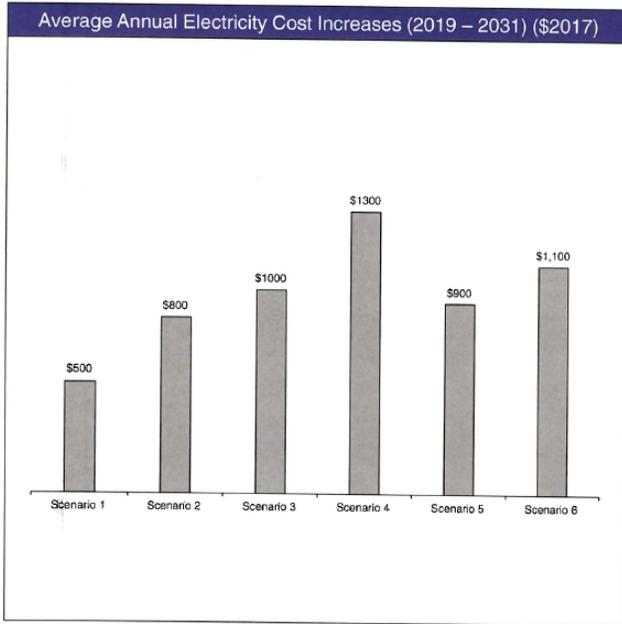
- In 2017, Heyday Cafe used 111,600 kilowatt-hours of electricity at a cost of \$17,050.
- Under the proposed regulations, Heyday Cafe would be expected to increase electricity costs to as much as \$18,400 in average annual costs based on 2017 usage.



Source: Appendix C

Proposed regulations will increase Heyday Cafe's average annual electricity costs by \$500 to \$1,300

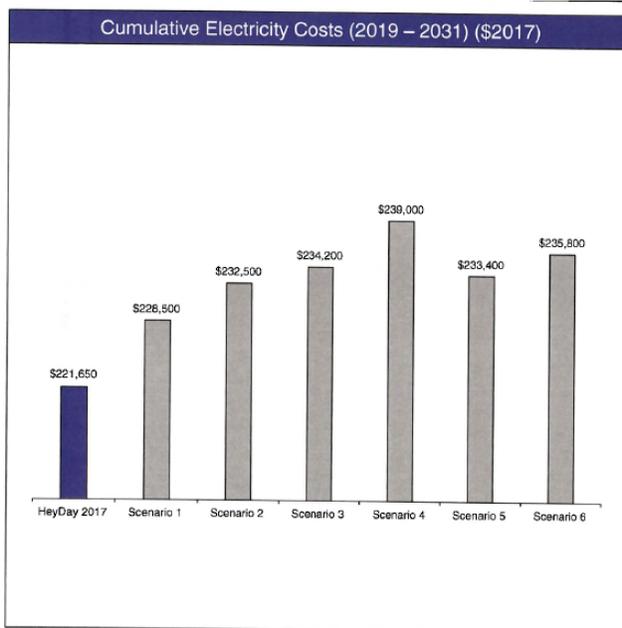
- The proposed regulation changes amount to an average annual cost increase ranging between \$500 to \$1,300.
- These changes amount to an increase in costs of anywhere from 3% to 8%.



Source: Appendix C

Proposed regulations change total electricity costs from \$222K up to \$239K

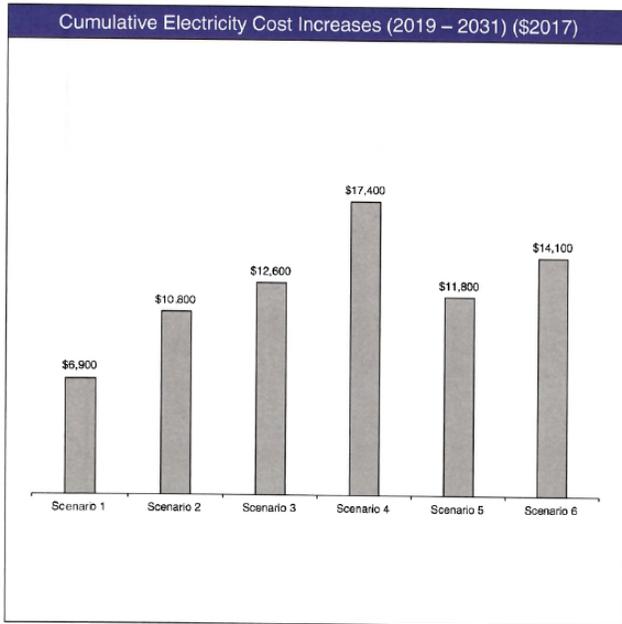
- Based on 2017 usage and electricity prices, Heyday Cafe is expected to cumulatively expend almost \$222,000 between 2019 to 2031.
- Based on the proposed regulation changes and NERA's scenario analysis, Heyday Cafe is projected to expend between \$228,500 and \$239,000.



Source: Appendix C

Proposed regulations will increase total electricity costs by \$6,900 to \$17,400

- Based on the NERA analysis, electricity costs are expected to increase by as much as \$17,400 over the oncoming 13-year period.
- This is again an increase of anywhere between 3% and 8% over the 13 year period.

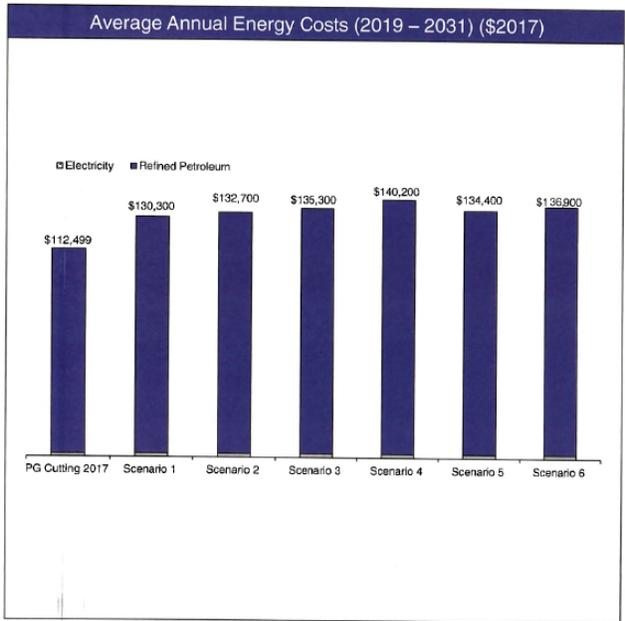


Source: Appendix C

-WSPA5]

[Proposed regulations are projected to increase PG Cutting Services average annual energy costs by 16% to 25%]

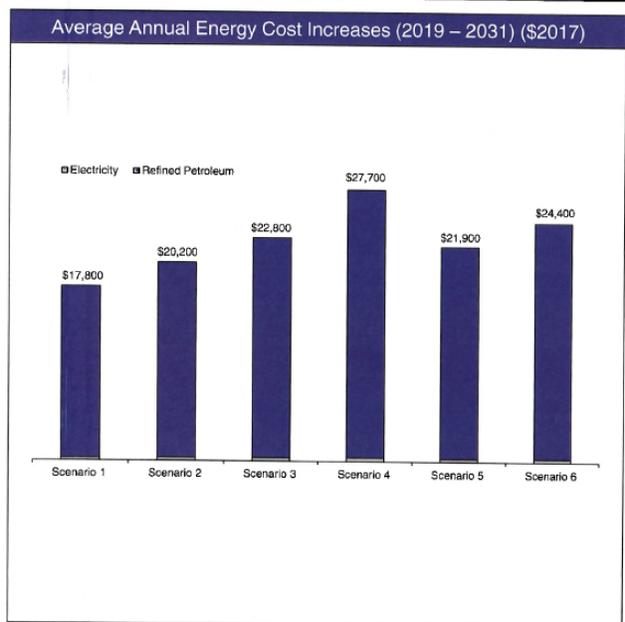
- PG Cutting Services expended over \$112,000 in 2017 on petroleum based fuels and electricity.
- Based on NERA's analysis of the proposed regulations, PG Cutting Services would expend between \$130,000 and \$140,000 a year for their total energy costs.



Source: Appendix C and D

Proposed regulations are projected to increase PG Cutting Services' average annual energy costs by \$18K to \$28K

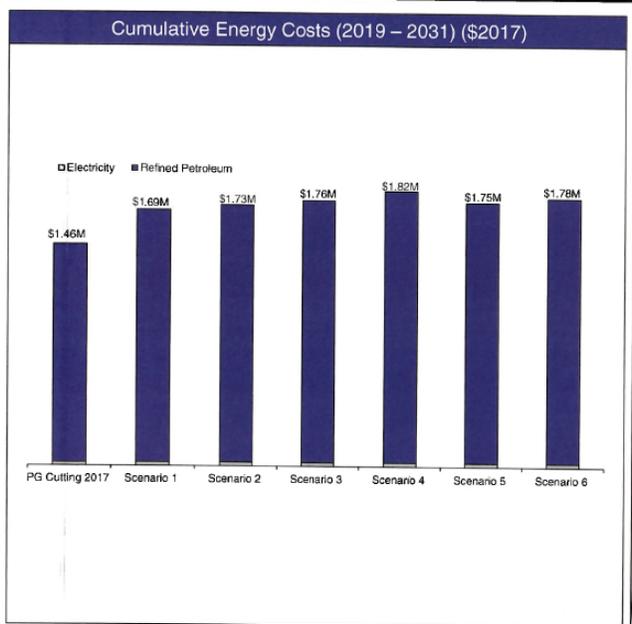
- The proposed regulation generates a cost increase of anywhere between \$17,800 at the low end and \$27,700 at the high end per year, for the oncoming 13 year period. These changes amount to an average annual percentage increase in costs of 16% to 25%.



Source: Appendix C and D

Proposed regulations will increase total energy costs from \$1.46M to as much as \$1.82M

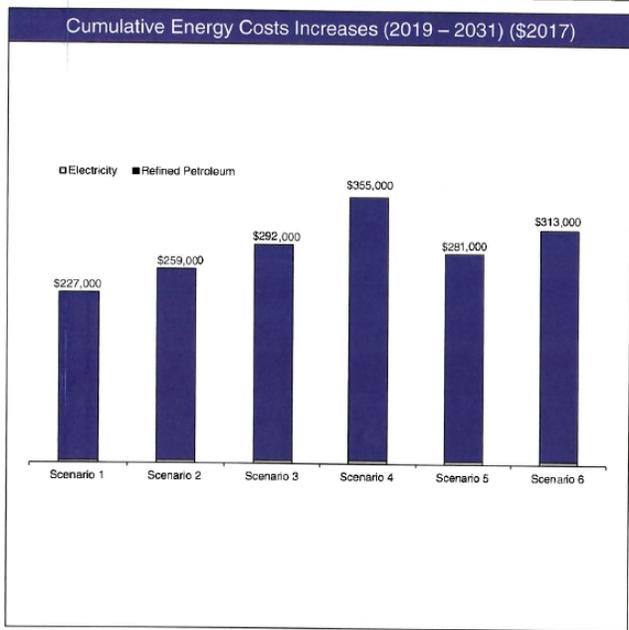
- Cumulatively, PG Cutting Services is expected to accrue approximately \$1.46 million in energy costs from 2019 to 2031.
- The proposed regulation changes are expected to increase PG Cutting Services' cumulative costs to as much as \$1.82 million.



Source: Appendix C and D

Proposed regulations will increase total energy costs by \$230K to \$360K

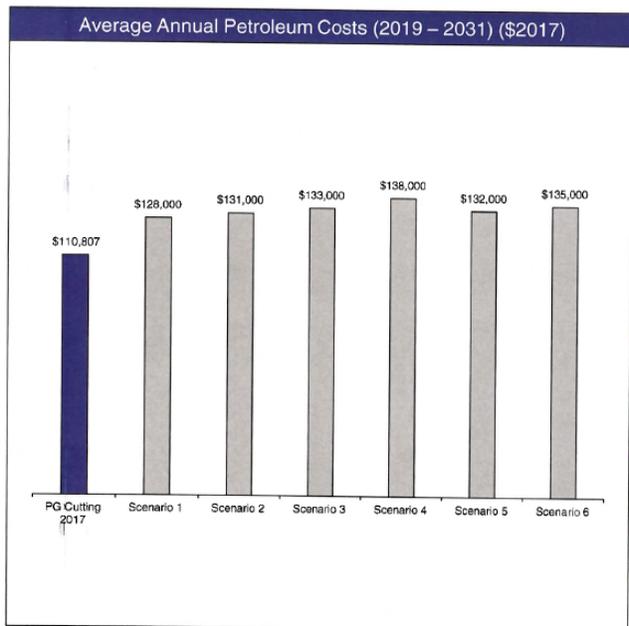
- The proposed regulations are projected to increase PG Cutting Services' energy costs between \$227,000 and \$355,000 over the oncoming 13 year period, depending on the scenario/regulation changes that take place.
- This amounts to an increase in costs of 16% to 25% over the 13 year period.



Source: Appendix C and D

Proposed regulations increase average annual petroleum costs by 16% to 25%

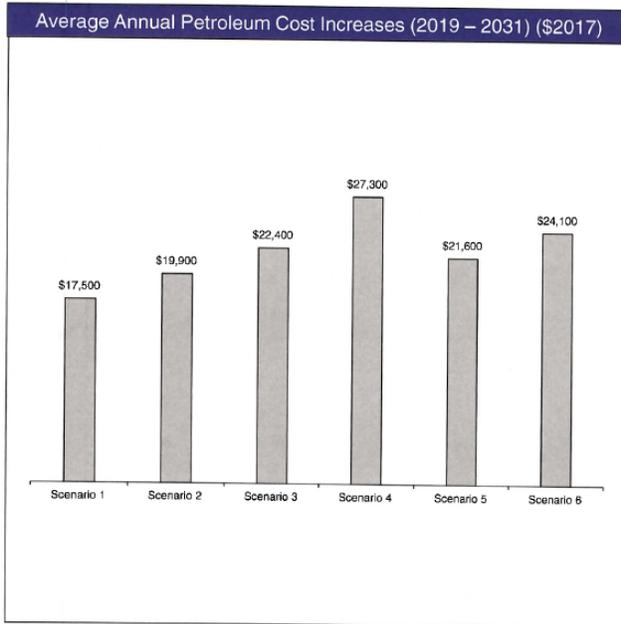
- In 2017, PG Cutting Services used 35,546 gallons of petroleum based products at a cost of \$110,807.
- Under the established NERA cost scenarios, PG Cutting Services would pay between \$128,000 and \$138,000 a year for their petroleum based on 2017 usage.



Source: Appendix C

Proposed regulations will increase PG Cutting Services' average annual petroleum costs by \$17K to \$27K

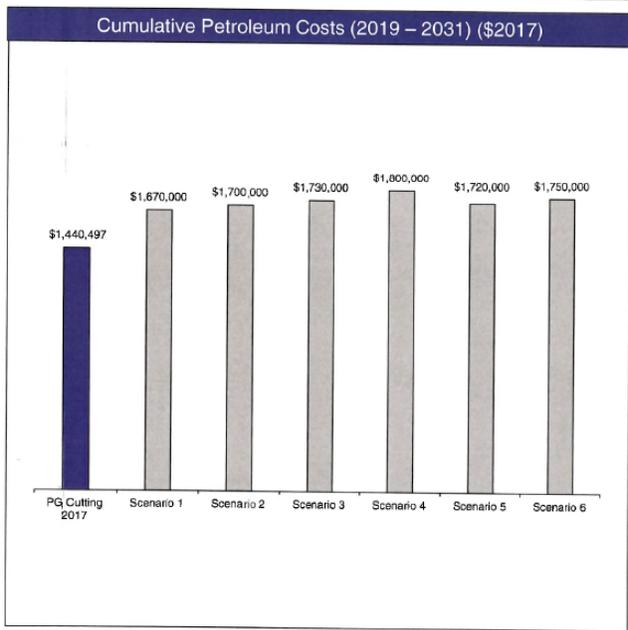
- The proposed regulation changes amount to an average cost increase of \$17,500 to \$27,300 per year, for the oncoming 13 year period.
- These changes amount to an average annual increase in costs anywhere from 16% to 25%.



Source: Appendix C

Proposed regulations change total petroleum costs from \$1.4M up to \$1.8M

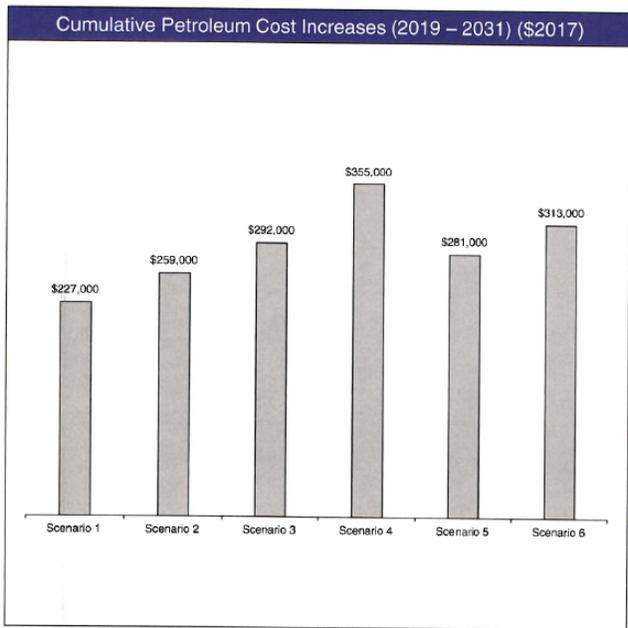
- PG Cutting Services' cumulative petroleum costs amount to \$1,440,497 based on 2017 prices and usage for the 13 year period of 2019 to 2031.
- PG Cutting Services' costs increase to as much as \$1.80M based on 2017 usage.



Source: Appendix C

Proposed regulations will increase total petroleum costs by \$227K to \$355K

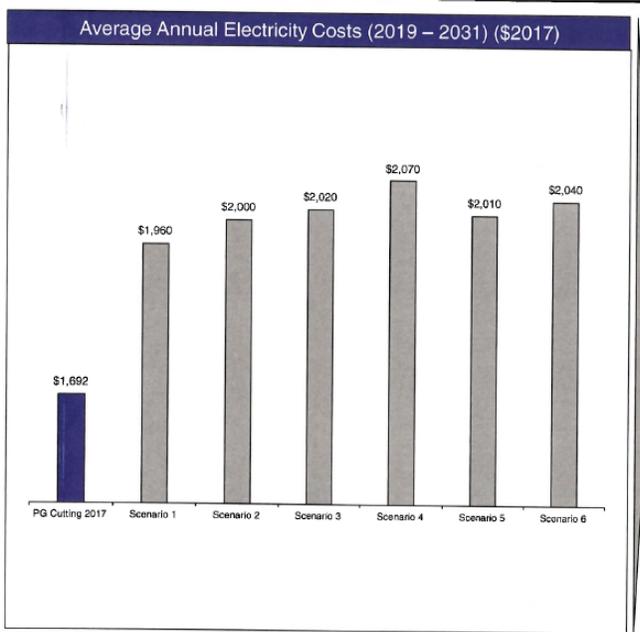
- PG Cutting Services would experience a net cost increase between \$227,000 and \$355,000 over the 13 year period; an amount equivalent to the cost of two fully equipped truck purchases.
- This is an increase of anywhere between 16% and 25% over the 13 year period.



Source: Appendix C

Proposed regulations increase average annual electricity costs by 16% to 22%

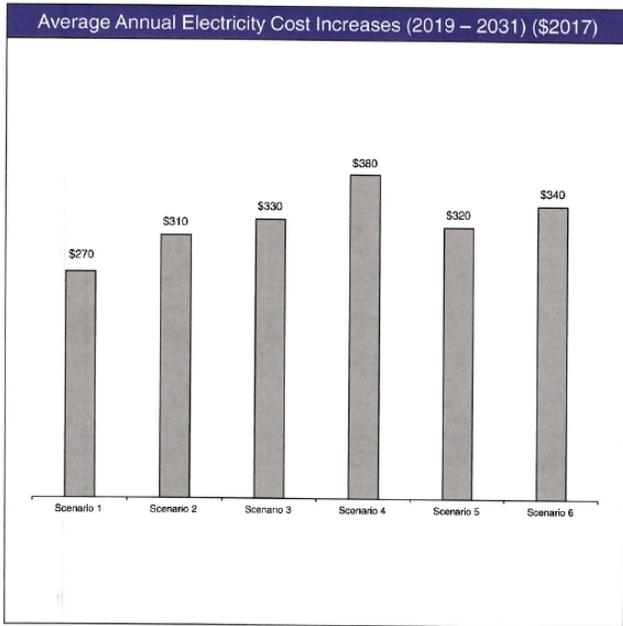
- In 2017, PG Cutting Services utilized an estimated 15,634 kWh of electricity at a market cost of \$1,692.
- Under the proposed regulations, PG Cutting Services would be expected to increase electricity costs to as much as \$2,070 based on 2017 usage.
- Please note that electricity estimates are conservative and do not reflect PG Cutting Services' expected planned growth.



Source: Appendix D

Proposed regulations will increase PG Cutting Services' average annual electricity costs by \$270 to \$380

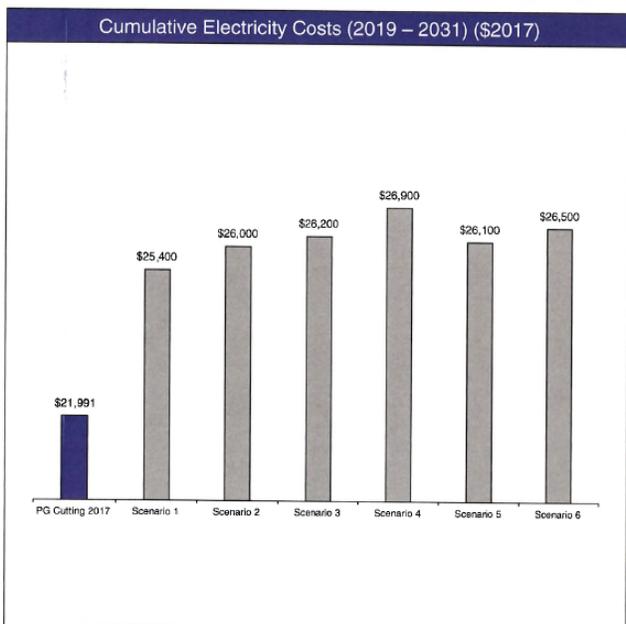
- The proposed regulation changes amount to an average annual cost increase ranging between \$270 and \$380.
- These changes amount to an average annual increase in costs of anywhere from 16% to 22%.



Source: Appendix D

Proposed regulations will increase total electricity costs for 2019 to 2031 from \$22K up to \$27K

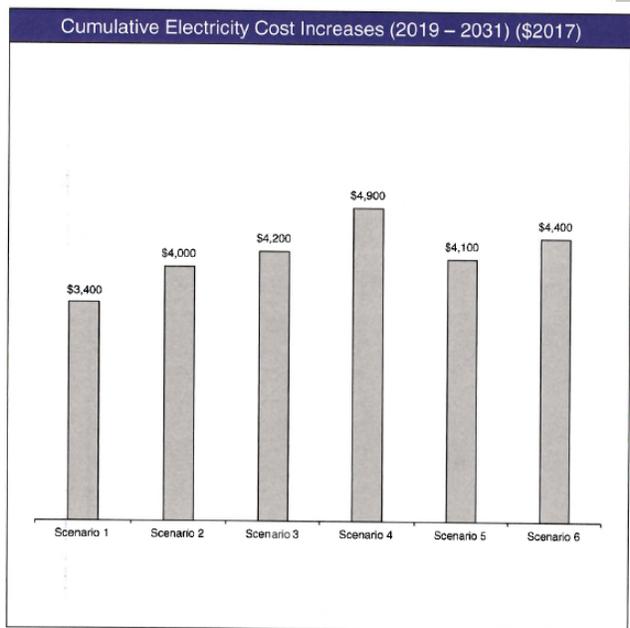
- Based on 2017 usage and electricity prices, PG Cutting Services is expected to cumulatively expend almost \$22,000 between 2019 to 2031.
- Based on the proposed regulation changes and NERA's scenario analysis, PG Cutting Services is projected to spend between \$25,400 and \$26,900 in electricity costs over the 13 year period.



Source: Appendix D

Proposed regulations will increase total electricity costs from 2019 to 2031 by \$3,400 to \$4,900

- Based on the NERA analysis, electricity costs are expected to increase by as much as \$4,900 over the oncoming 13-year period.
- This is again an increase of anywhere between 16% and 22% over the 13 year period.



Source: Appendix D

-WSPA6]

[Conclusion

• NERA analyzed six scenarios to determine the economic impacts of different ranges of price ceilings and intermediary containment prices (speed bump prices) at which allowances would be available for sale under a separate analysis. This analysis was then used to determine the cost increases and impact that the provisions may have on the small restaurant business of Heyday Cafe.

• As a baseline, in 2017 Heyday Cafe paid \$17,000 for their usage of electricity (111,600kWh). With the proposed regulations taking effect, for 2019 to 2031, Heyday Cate's costs are expected to increase to as much as \$18,400 a year, amounting an average annual increase of \$1,300 or 8%.

• With the proposed regulation changes taking effect, Heyday Cate's cumulative total costs are projected to reach as high as \$239,000 over the 13 year analysis period, amounting to a cumulative cost increase of \$17,400... - WSPA5]

[• Under the provisions established in AB 398, six scenarios were analyzed to determine the economic impacts of different ranges of values of the price ceiling and intermediary

containment prices (speed bump prices) at which allowances would be available for sale.

- This analysis is used to determine the cost increases and impact that the provisions may have on the small construction business of PG Cutting Services. The assumptions tend to understate the cost impacts as PG Cutting Services and the construction industry are both growing at a fast rate.
- Costs incurred in 2017 were used as a baseline. In 2017, PG Cutting Services paid a total of \$112,499 for their usage of petroleum based products (35,546 gallons) and electricity (15,634 kWh).
- With the proposed regulations taking effect, from 2019 to 2031, PG Cutting Services' costs are expected to increase up to \$140,000 per year, amounting to an average annual increase of \$27,700 or 25%.
- With the proposed regulation changes taking effect, PG Cutting Services' costs are projected to reach as high as \$1.82 million, amounting to a cumulative cost increase of \$355,000 over the 13 year term. - WSPA6]

[Appendix A: NewERA Model⁶⁰⁴

- NERA developed the NewERA model to forecast the impact of policy, regulatory, and economic factors on the energy sectors and the economy.
- When evaluating policies that have significant impacts on the entire economy, this model specification captures the effects as they ripple through all sectors of the economy and associated feedback effects.
- The NewERA model combines a macroeconomic model with all sectors of the economy with a detailed electric sector model that represents electricity production.
- This combination allows for a complete understanding of the economic impacts of different policies on all sectors of the economy.
- The macroeconomic model incorporates all production sectors except electricity and final demand of the economy. Policy consequences are transmitted throughout the economy as sectors respond until the economy reaches equilibrium.
- NERA's NewERA modeling system is an integrated energy and economic model that includes a bottom-up representation of the electricity sector, including all of the unit-level details that are required to accurately evaluate changes in the electric sector.

⁶⁰⁴ Source:NERA Economic Consulting, "Study: Economic Impacts of a Proposed 65 ppb National Ambient Air Quality Standard for Ozone on the State of Texas, Appendix A. The NEWERA MODEL,"(http://www.nera.com/content/dam/neralpublications/2015/NERA_Ozone_Econ_Impacts_for_TC_EQ_0815.pdf)

- NewERA integrates the electricity sector model with a macroeconomic model that includes all other sectors of the economy (except for the electricity production) using a top-down representation.
- The model produces integrated forecasts for future years.
- The integrated modeling approach also provides consistent price responses since all sectors of the economy are modeled.

Appendix B: NERA Economic Scenarios⁶⁰⁵

Scenarios 1 – 4			
Scenario	Price Ceiling (2021\$/MT CO ₂)	Speed Bump Price 1	Speed Bump Price 2
Scenario 1	\$39	\$25	\$32
Scenario 2	\$67	\$35	\$51
Scenario 3	\$92	\$43	\$68
Scenario 4	\$166	\$69	\$116

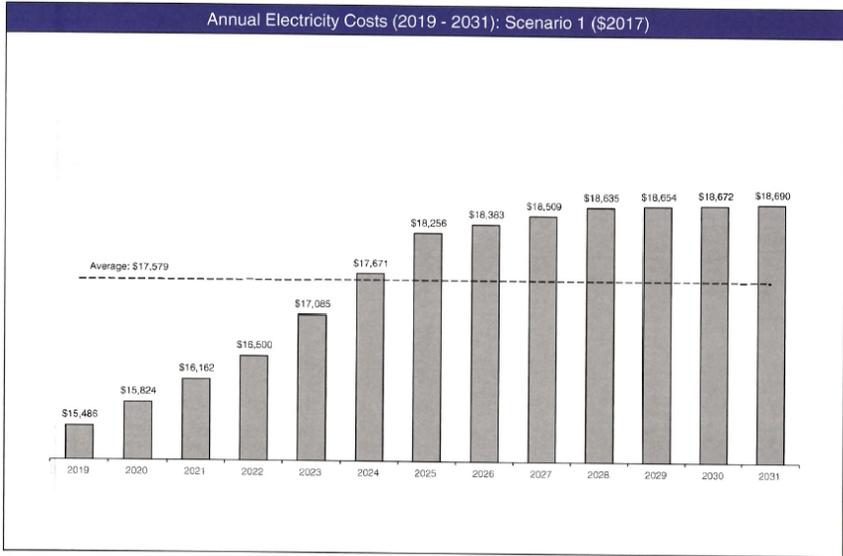
- For scenarios 1 to 4, the speed bump prices were set at 1/3 and 2/3 of the difference between the floor and ceiling prices, with 1/3 of the containment reserve allowances accrued through 2020 made available at each of these prices. Remaining Allowance Price Containment Reserves (APCR) are assumed available for purchase at the ceiling price.
- The scenarios employ an economy wide cap and trade program, and allow for fixed percentages of offsets that vary by year. They employ a 50% renewable portfolio standard (RPS) target, doubling of energy efficiency in commercial buildings by 2030, low carbon fuel standard (LCFC), and a zero-emission vehicle (ZEV) requirement.

⁶⁰⁵ Source: NERA Economic Consulting, "Study: AB 398 – Allowance Ceiling Prices and Speed Bumps"

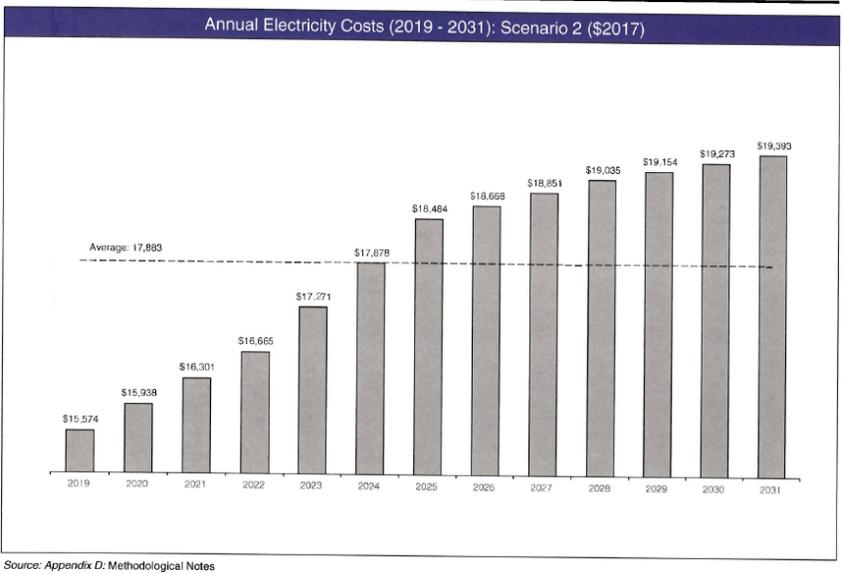
Scenarios 5 – 6					
Scenario	Price Ceiling (2021\$/MT CO2)	Price Ceiling (2021)	Price Ceiling (2030)	Speed Bump 1 and 2 (2021)	Speed Bump 1 and 2 (2030)
Scenario 5	\$65 rising at 5%	\$65	\$101	\$41, \$53	\$64, \$83
Scenario 6	\$65 rising at 1%	\$35	\$71	\$41, \$53	\$45, \$58

- Scenario 5 and 6 take into account the proposed amendment to the California cap on GHG emissions and market-based compliance mechanisms regulation released in September 2018.
- The fifth scenario reflects proposed ceiling, speed bump prices, and distribution of pre-2021 reserve allowances in 2021. The proposed floor price and ceiling prices start at \$17.8 and \$65, respectively in 2021 and both rise at 5% in real terms. The speed bump prices were set at $\frac{1}{2}$ and $\frac{3}{4}$ of the difference between the floor and ceiling prices, with $\frac{1}{3}$ of the APPCR allowances accrued through 2020 being made available at each of these prices. The remaining APCR allowances are assumed available or purchase the ceiling price. The ceiling price tier also includes 39 million previously unsold allowances
- The sixth scenario assumes a 1% real rise in floor and ceiling prices, while all other assumptions remain the same as the fifth scenario. – WSPA5, WSPA6]

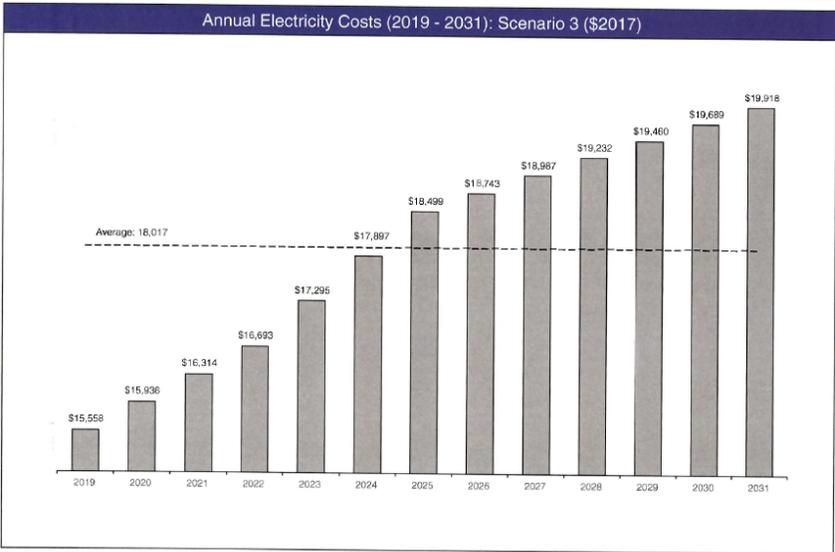
[Appendix C: Annual Electricity Costs for Scenario 1 (Page 1 of 6)]



Appendix C: Annual Electricity Costs for Scenario 2 (Page 2 of 6)

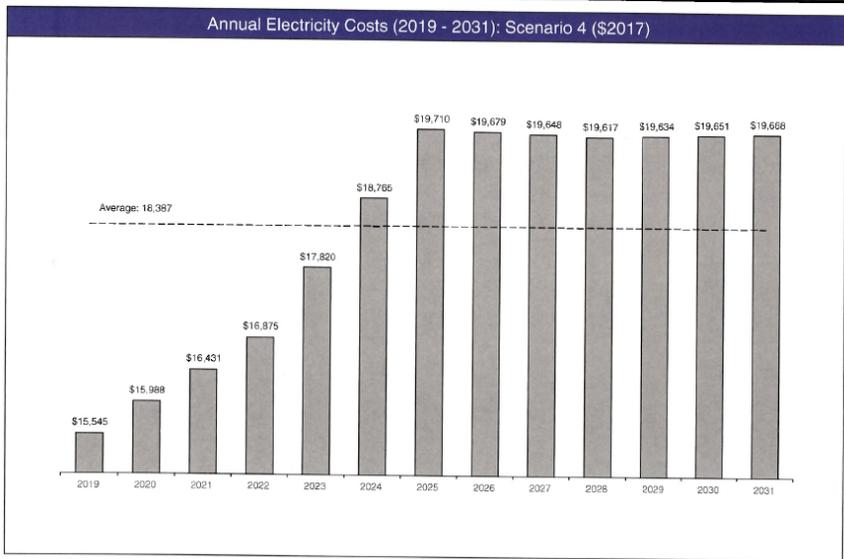


Appendix C: Annual Electricity Costs for Scenario 3 (Page 3 of 6)



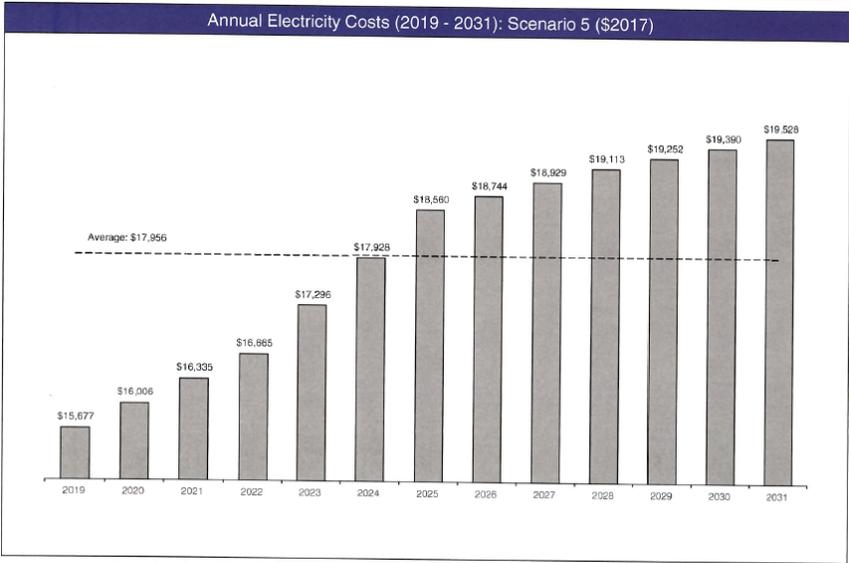
Source: Appendix D: Methodological Notes

Appendix C: Annual Electricity Costs for Scenario 4 (Page 4 of 6)



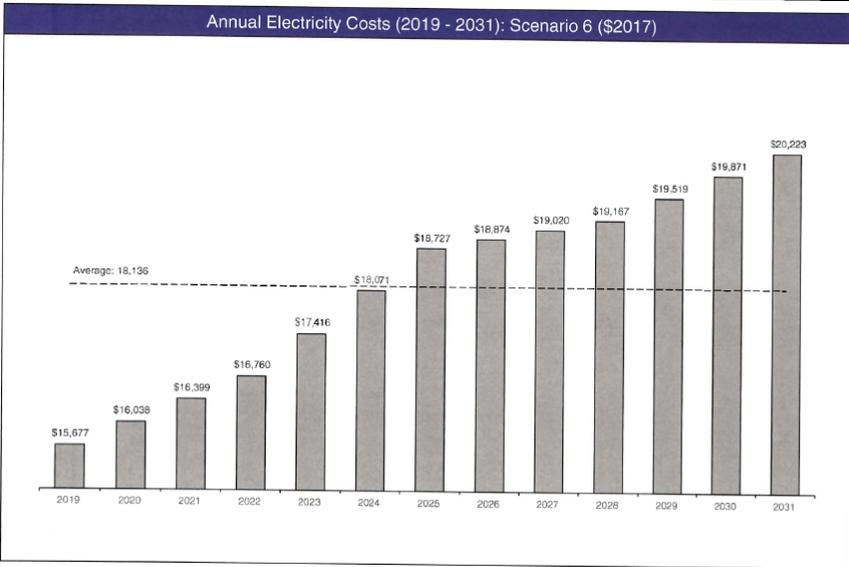
Source: Appendix D: Methodological Notes

Appendix C: Annual Electricity Costs for Scenario 5 (Page 5 of 6)



Source: Appendix D: Methodological Notes

Appendix C: Annual Electricity Costs for Scenario 6 (Page 6 of 6)



Source: Appendix D: Methodological Notes

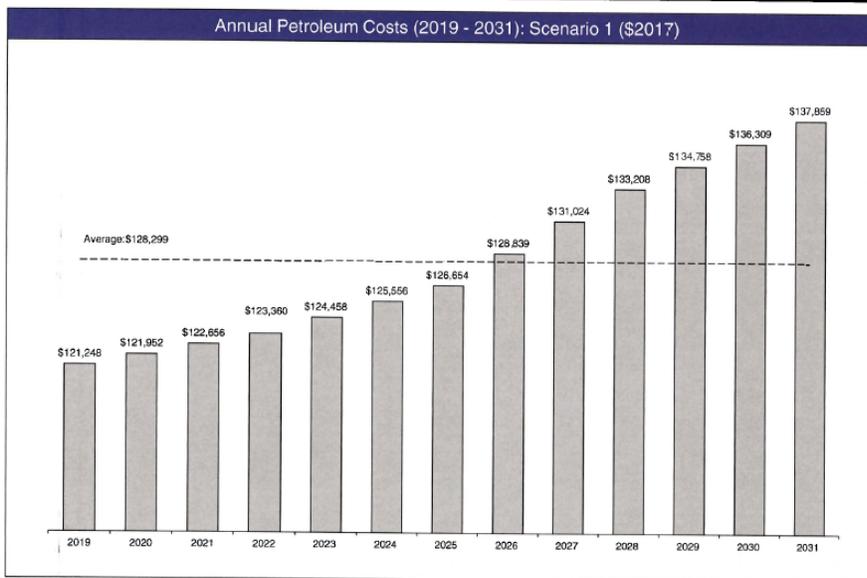
Appendix D: Methodological Notes

- A baseline per kilowatt-hour electricity utilization cost was obtained from Heyday Cafe based on their 2017 electricity usage. The kilowatt-hour price estimates were converted to price per mMBTU by factoring by 1 kWh/.00341214MMBtu.⁶⁰⁶
- To estimate electricity costs under the different regulation scenarios, Heyday Cafe's 2017 electricity usage was factored by the NERA delivered prices of \$/MMBtu for

⁶⁰⁶ APS Physics, "Energy Units," <https://www.aps.org/policy/reports/popa-reports/energy/units.cfm>.

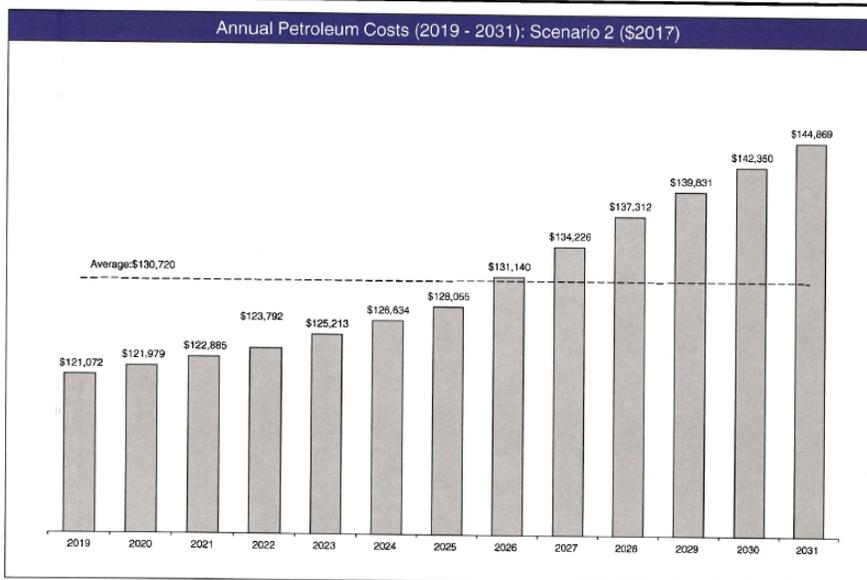
Commercial/Services electricity. All costs were converted into 2017 dollars, utilizing the CPI.⁶⁰⁷ – WSPA5]

Appendix C: Annual Petroleum Costs for Scenario 1 (Page 1 of 6)



Source: Appendix E: Methodological Notes - Petroleum

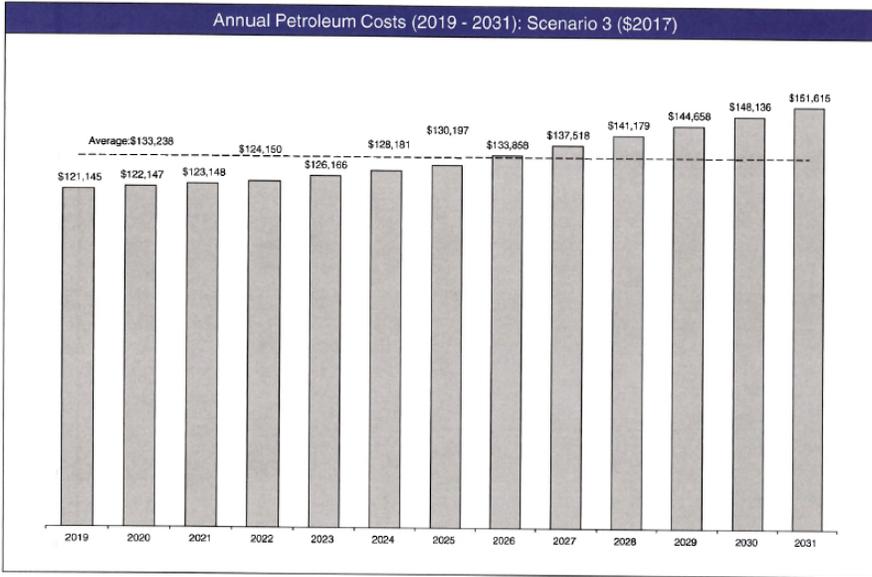
Appendix C: Annual Petroleum Costs for Scenario 2 (Page 2 of 6)



Source: Appendix E: Methodological Notes - Petroleum

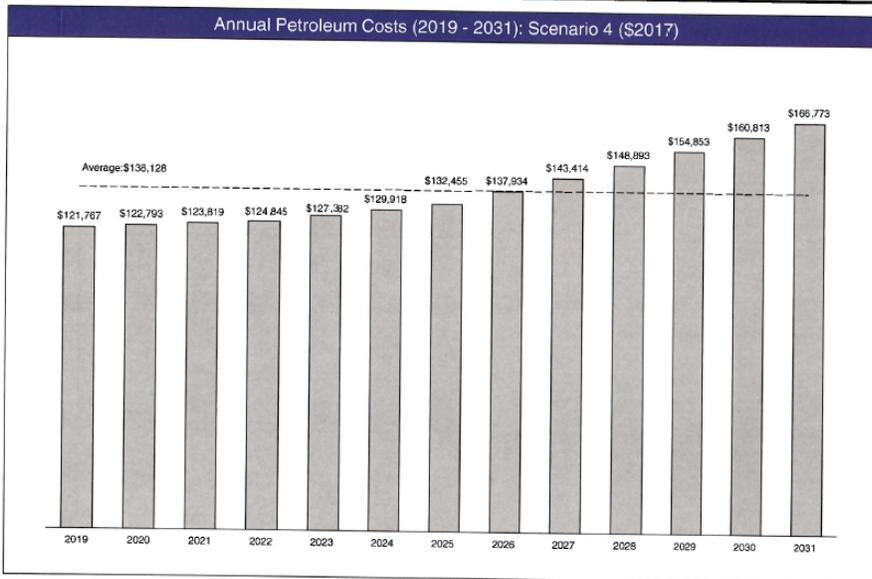
Appendix C: Annual Petroleum Costs for Scenario 3 (Page 3 of 6)

⁶⁰⁷ California Department of Finance, "Inflation," <http://www.def.ca.gov/Forecasting/Economics/Indicator/s1nflation>.



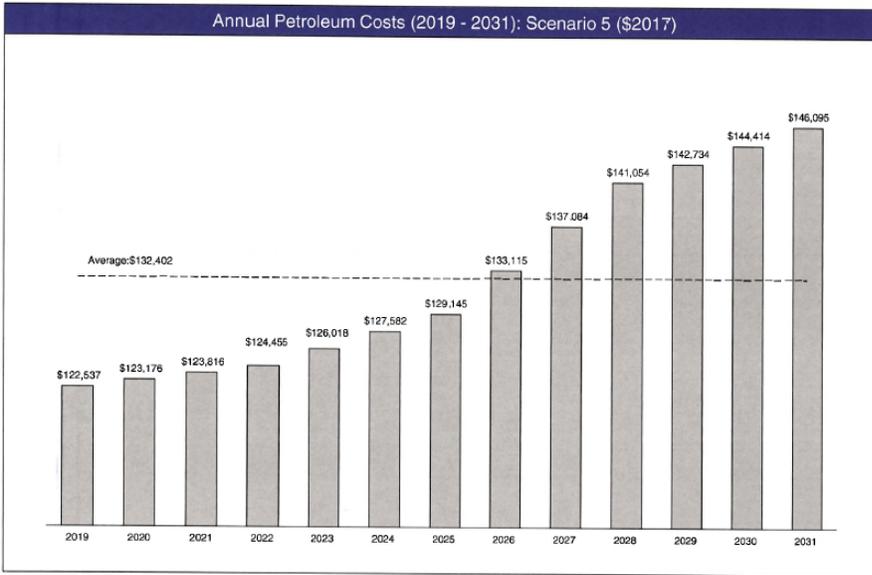
Source: Appendix E: Methodological Notes - Petroleum

Appendix C: Annual Petroleum Costs for Scenario 4 (Page 4 of 6)



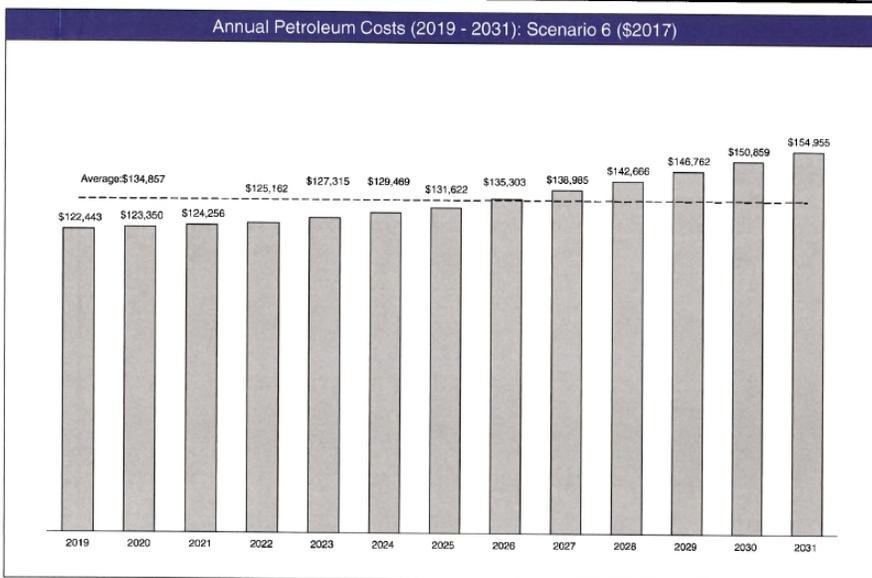
Source: Appendix E: Methodological Notes - Petroleum

Appendix C: Annual Petroleum Costs for Scenario 5 (Page 5 of 6)



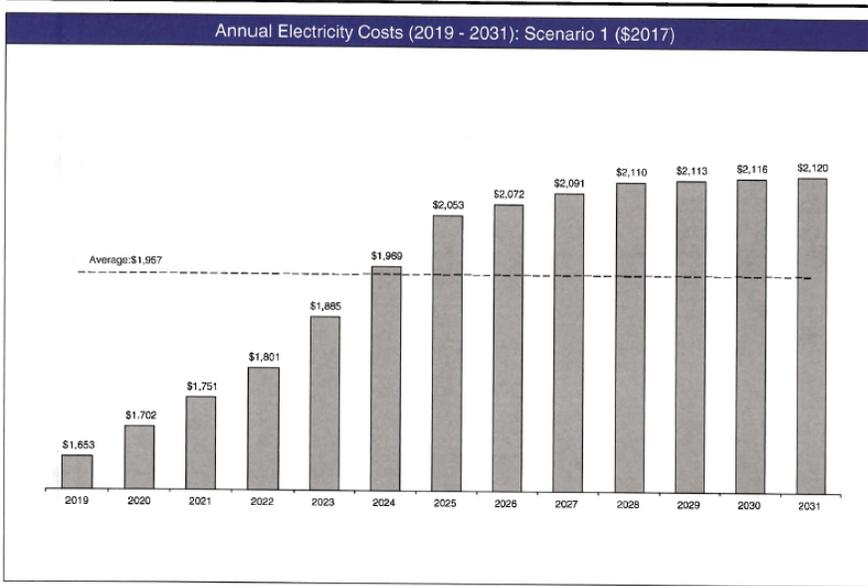
Source: Appendix E: Methodological Notes - Petroleum

Appendix C: Annual Petroleum Costs for Scenario 6 (Page 6 of 6)

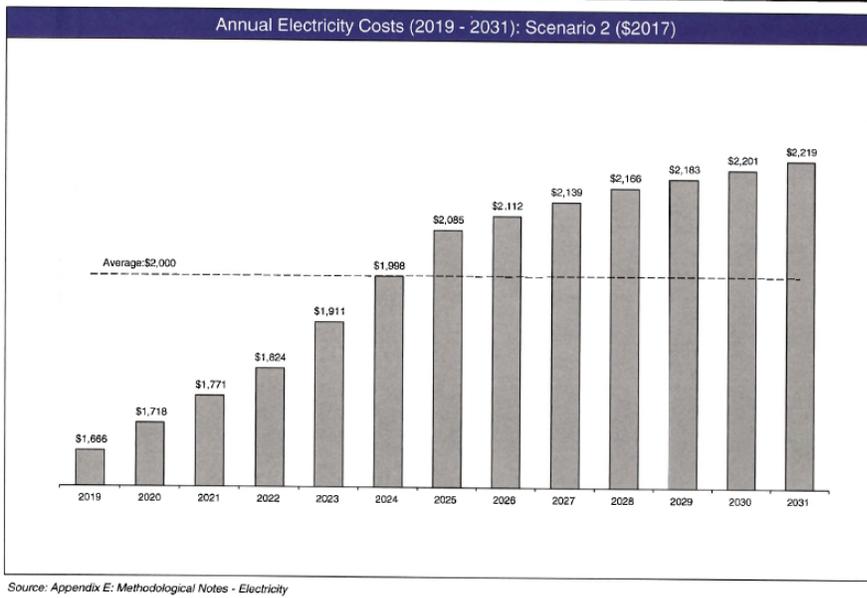


Source: Appendix E: Methodological Notes - Petroleum

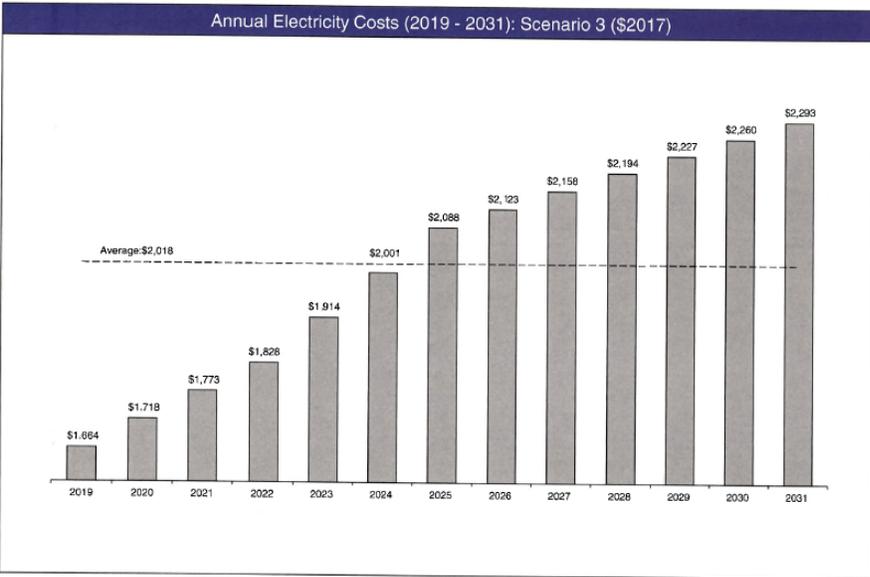
Appendix D: Annual Electricity Costs for Scenario 1 (Page 1 of 6)



Appendix D: Annual Electricity Costs for Scenario 2 (Page 2 of 6)

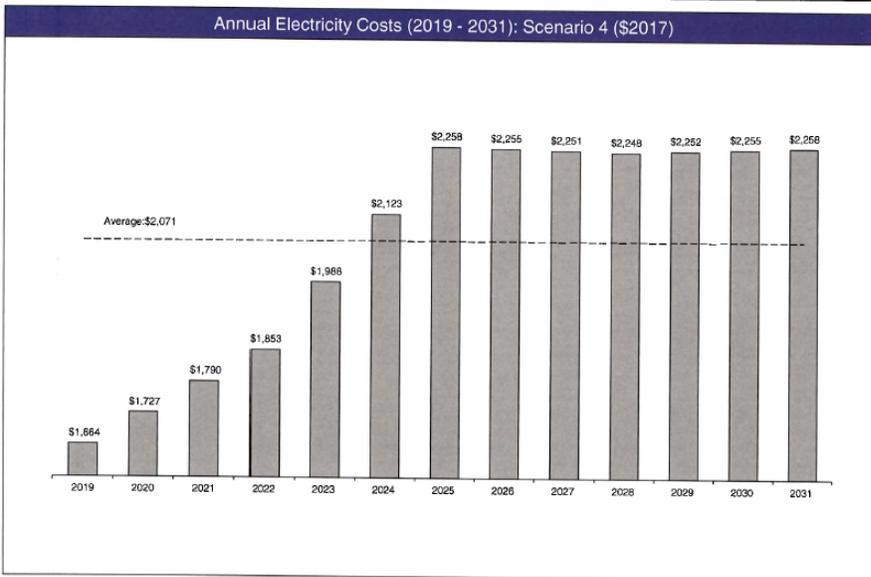


Appendix D: Annual Electricity Costs for Scenario 3 (Page 3 of 6)



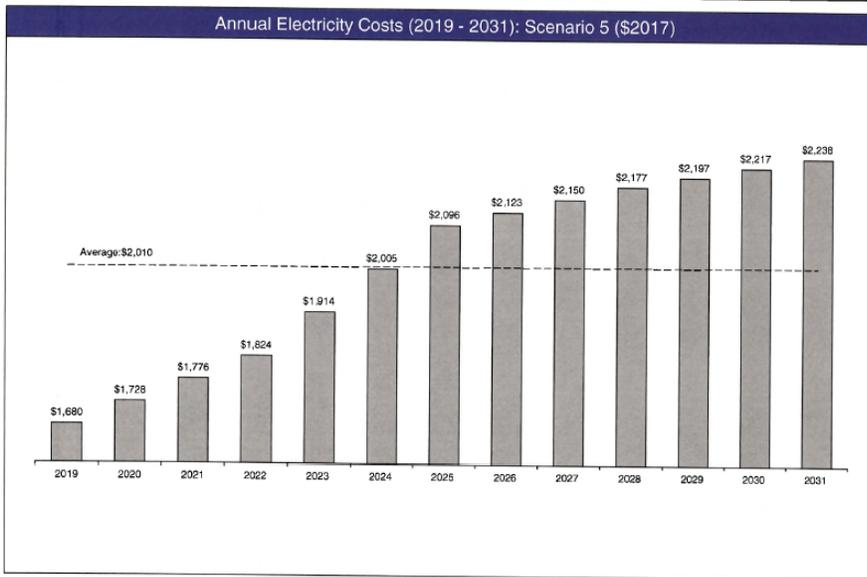
Source: Appendix E: Methodological Notes - Electricity

Appendix D: Annual Electricity Costs for Scenario 4 (Page 4 of 6)



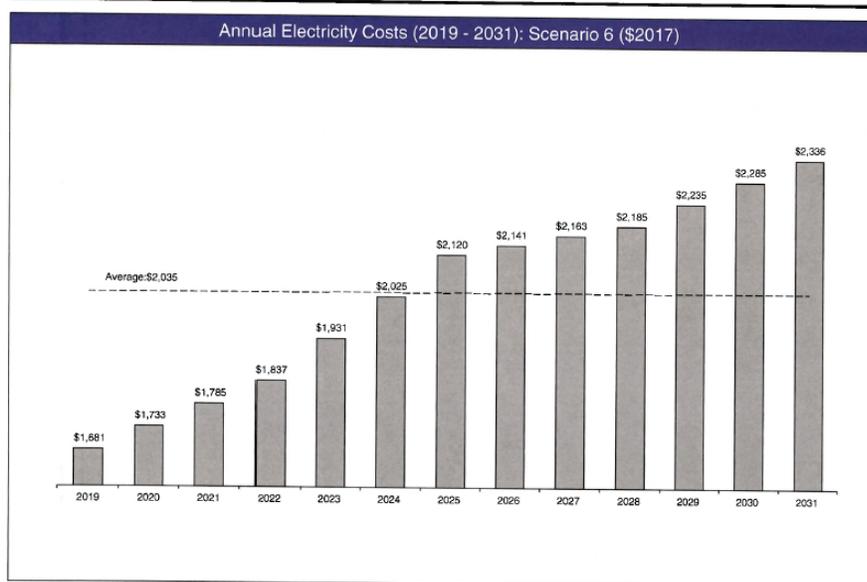
Source: Appendix E: Methodological Notes - Electricity

Appendix D: Annual Electricity Costs for Scenario 5 (Page 5 of 6)



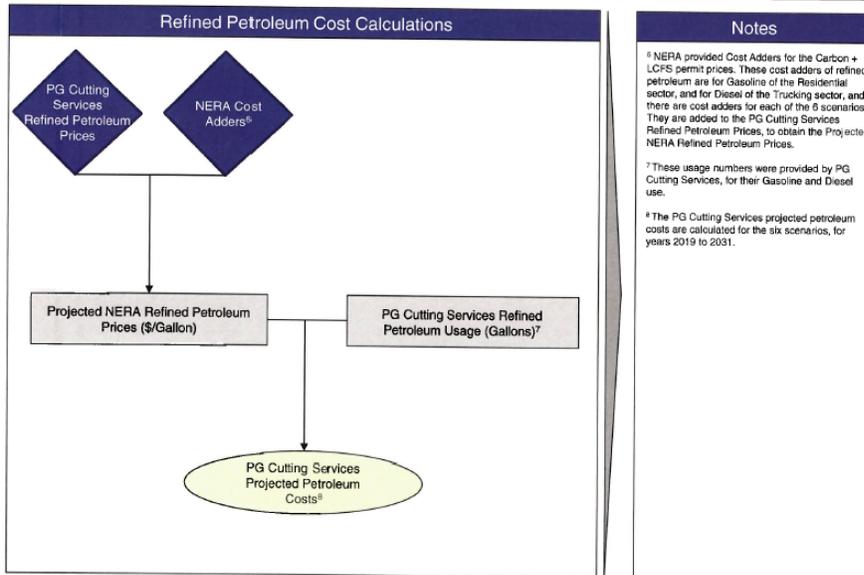
Source: Appendix E: Methodological Notes - Electricity

Appendix D: Annual Electricity Costs for Scenario 6 (Page 6 of 6)

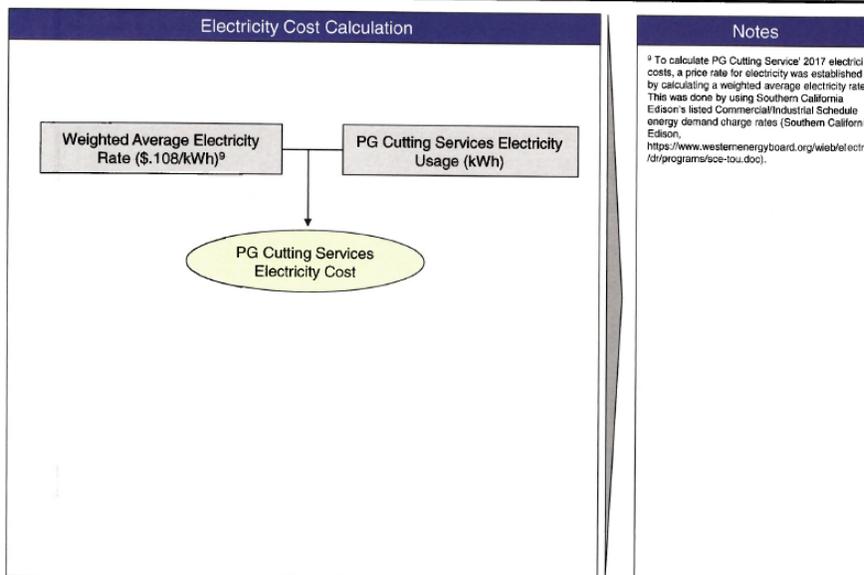


Source: Appendix E: Methodological Notes - Electricity

Appendix E: Methodological Notes – Petroleum (Page 1 of 2)



Appendix E: Methodological Notes – Electricity (Page 2 of 2)



- WSPA6]

(WSPA5, WSPA6)

Response: See Response to 45-Day Comments J-1.2. These comments request, or are associated with requests, that CARB reject the proposed price ceiling on the grounds that it would negatively impact net costs to households and small businesses and that Californians cannot afford higher energy costs. The commenters state concerns that the Program does not have strong enough features to prevent allowance prices from rising “too high.” CARB conducted modeling to evaluate the economic impacts of the amended Regulation, as described in Responses to 45-Day Comments B-1.3, B-2.1, B-3.12, and B-3.14. The modeling found that the amended Regulation would have a negligible impact

on the economy, employment, and personal income through 2030, even in the unlikely event the allowance price reaches the price ceiling. Responses to 45-Day Comments B-3.12 and B-3.14 also discuss Program provisions that protect consumers.

Response to 45-Day Comments B-1.3 also discusses the extensive modeling conducted in support of the adopted Scoping Plan with the Cap-and-Trade Program. This modeling included an uncertainty analysis that concluded the adopted Scoping Plan, with the Cap-and-Trade Program, has the best chance of meeting the 2030 emissions target set by SB 32 and is four times less costly than alternatives that were considered. Response to 45-Day Comment B-3.15 discusses how the adopted price ceiling is correctly established in the context of the price ceiling factors that must be considered pursuant to AB 398.

The new post-2020 Reserve and price ceiling work in coordination with other features of the Program to provide compliance flexibility while reliably and cost-effectively meeting the 2030 emissions target. The Program also includes limited banking, use of a limited number of offsets, multi-year compliance periods, and a broad scope that identifies a diverse set of sources with a range of emission reduction opportunities.

Response to 45-Day Comments B-1.3 also discusses the existing opportunities for effective oversight on measures contained within the 2017 Scoping Plan, including a discussion of the Independent Emissions Market Advisory Committee's (IEMAC) role in reporting on the economic and environmental performance of the Program. CARB is required, in consultation with the IEMAC, to report to the Legislature if two consecutive auction settlement prices exceed the lower of the two new Reserve tier prices. The report would include an assessment of the potential for prices to reach the price ceiling for multiple auctions. Moreover, as directed by Board Resolution 18-51, CARB staff will continue to monitor the cost containment provisions of the Program, including the placement of the Reserve tiers and the price ceiling, and if needed, staff will propose technical adjustments through future rulemakings to further strengthen the cost containment features of the Program.

With respect to the commenter concerned with Board member comments related to an AstroTurf campaign, CARB staff notes that during the Board member deliberation at the December 13, 2018 hearing, the Board members addressed this comment and indicated that the "AstroTurf campaign" remark was specific to an online social media campaign and not to any statements made by commenters during the November 15, 2018 hearing.

Some commenters discuss Cap-and-Trade Program impacts on retail electricity and natural gas costs. CARB is cognizant of the importance of protecting ratepayers from undue impacts and actively protects ratepayers through

allowance allocation to utilities on behalf of ratepayers. More than one-third of total Program allowances are allocated to electric and natural gas utilities on behalf of ratepayers, and the value of these allocated allowances must be used to benefit ratepayers, consistent with the goals of AB 32. Much of this value is directly returned to residential, small business, and emissions-intensive trade-exposed industrial ratepayers as on-bill climate credits.

One commenter specifically discusses the climate credits provided by investor-owned electric and gas utilities. Investor-owned electric utilities, pursuant to statutory requirements and the Cap-and-Trade Regulation, provide these credits twice annually to residential ratepayers, and also to small businesses and emissions-intensive trade-exposed industrial facilities as required by SB 1018 (2012). Small businesses that purchase electricity from investor-owned utilities may reach out to their utilities if they believe they are not receiving the climate credits for which they are eligible, and CARB will consider how to better communicate with small businesses regarding the Cap-and-Trade Program. In the case of investor-owned natural gas suppliers, with the exception of past netting of allocated allowance proceeds and Program costs, climate credits are provided only to residential households. Natural gas suppliers are permitted to use a specified portion of their allocated allowances directly for compliance. To the extent natural gas suppliers use these allowances for compliance, those compliance costs are not passed on to ratepayers.

The commenter correctly notes that many publicly owned electric utilities do not provide climate credits to their customers. CARB allocates allowances to publicly owned utilities based on the cost burden resulting from the Cap-and-Trade Program. Publicly owned utilities have some discretion over how they use those allocated allowances, but uses must benefit their ratepayers, consistent with the goals of AB 32 and within the bounds of the Regulation. The Cap-and-Trade Regulation and statute allows publicly owned utilities to provide climate credits to customers, but does not require it. Regardless of how the allowances are used, they must benefit ratepayers. The adopted amendments add details regarding types of allowable uses, including climate credits pursuant to section 95892(d)(3)(D). CARB publishes annual reports detailing how allowance value has been used.⁶⁰⁸ If the commenter believes that these utilities should use these allowances in a specific manner, such as for certain customer types or programs, CARB encourages the commenter to make more specific proposals either to the utilities in question or to CARB for consideration in future rulemakings.

⁶⁰⁸ <https://www.arb.ca.gov/cc/capandtrade/allowanceallocation/EDU-NG-allowance-value.htm>

Insufficient Analysis

H-1.3. Comment:

I'm going to share a few things today that I think many of you have already heard from me, but I think it's important to say the day when you're planning to adopt these regulations. I appreciate all the constraints that face the Board and climate policymakers. But I think it's really important to mention there has been no analysis in this process of how the stringency of the Cap-and-Trade Regulatory proposal is consistent, either with our statewide emissions target for the year 2030, or with the role that the Board identified for the Cap-and-Trade in the Scoping Plan. I just think that's incredibly important to point out. I also want to point out, I think the responses to comments -- this is kind of a remarkable process, where there is really almost no response to most of the comments that were issued in this docket, and that's a pretty remarkable place to be, given the level of stringency of the discussion that's ensued over the last year. I think it's also important to say I respect the work this Board has done on climate and other issues. The analytical integrity of what staff have put forward does meet the integrity, and do service to the reputation you all have developed over decades.

I think it's important to say this, because we face big challenges. And getting right with the facts and the numbers is an important part of that. There is language in the proposed staff resolution -- or, sorry, the proposed Board Resolution to revisit the question of whether or not there are too many allowances in the program in the coming years, and to collect data at the end of the program's third compliance period in 2020. I think that's a positive development. I want to thank you for proposing that action. I hope you'll consider adopting that. But I think it's important for people to know that if indeed trends continue in the program, most of the extra allowances will be purchased, and you could end up with a large volume of extra allowances in private hands at the point at which you would have to make decisions about trying to accelerate the ambition of this program, which would lead to higher program revenues -- I'm sorry, higher program costs in the future, and fewer revenues to the State and the State taxpayers. So I think it's positive to take a step forward in thinking about these issues, but there has really been no analysis of the single most important variable in the program designed to date, and that's after well over a year of talking about this. (NEARZERO3)

Response: Although the transcript appears to indicate that the commenter supports staff's analysis, CARB staff believes that the commenter is actually indicating a lack of respect for the analytical integrity of staff's work and is the only commenter to question the integrity of staff's analyses. The commenter, throughout the 45-Day and 15-Day comment periods, has been critical of staff's work and has continuously asserted that staff has not addressed his concerns. With respect to those comments, see Responses to 45-Day Comments B-1.3 and B-2.1. The commenter is also directed to Responses to 45-Day Comments B-2.5, B-2.6, and B-2.7. With respect to the commenter's statements regarding

how and when CARB responds to comments, CARB staff notes that CARB's rulemaking process always includes responses to all pertinent comments in a Final Statement of Reasons (FSOR) following the Board's final action, and this rulemaking is no different. The commenter appears to misunderstand this process. All comments are responded to in this FSOR; there is no obligation to respond to comments prior to the Board's final action. With respect to the commenter's support for the Resolution language indicating that CARB staff will continue to monitor allowance supply in the coming years, thank you for the support.

I. ALTERNATIVES TO THE CAP-AND-TRADE PROGRAM

I-1. Additional Strategies

Incentive Programs

I-1.1. Comment:

I'm here on behalf of the Nisei Farmers League upon the funding of this Cap-and-Trade monies are significant to our farmers in our plan. If we do not receive these type of incentive fundings, there's no way our farmers can replace their tractors in a voluntary program that we have achieved with your staff, and with even EPA. So it's very important. But also, I want to make a comment -- excuse me -- is that the gentleman that came up here -- and I'm here about that item. Whatever you can do to make my farmers have a certainty on a price that's not going to put them into where they don't know from year to year if there's going to be funding or not, because farmers have to have plan out. There's the only way it works.

This year, our crops -- several commodities crashed, did not come out ahead at all. But the gentleman that came here at the last meeting, Mr. Will Scott, represents the African-American farmers. There are about 89 of them. And their an average age of 80 years old to 70, probably in that range. He was the very first farmer to be in the Tractor Trade-Up Program with ARB and EPA and was the first one that we had with Lynn Terry absolutely showed up to crush a tractor with Jared Blumenfeld and others. Mr. Will Scott is a sharp man. He was in the military on sub. He was with Pacific Bell. And if you could, Madam Chair, if I could take a minute more, please. He is very sharp to educate young African-American farmers to look at agriculture as a possibility of a job, and he is doing that.

When I see a farmer like him taking his time to come up here, I would hope that in the future we recognize the people that do travel and what their skills are, and what they're trying to do. If it wasn't for your program to allow him in the Tractor Trade-Up Program, he would never have been able to get a used new tractor through the monies. It's very important. (NISEIFARMERS2)

Response: The commenter discusses their view of the importance of the "Tractor Trade-Up Program." This refers to a funding program supported by

Cap-and-Trade proceeds in the Greenhouse Gas Reduction Fund (GGRF). The Funding Agricultural Replacement Measures for Emission Reductions (FARMER) Program provides funding for agricultural harvesting equipment, heavy-duty trucks, agricultural pump engines, tractors etc., and these funds are distributed by county air districts. GGRF funds other agricultural programs, including the Alternative and Renewable Fuels Program, which provides funding for low carbon renewable bio-fuels derived from agricultural waste. The Renewable Energy for Agriculture Program provides funding for installation of on-site renewable energy technologies at farms. Food Production Investment Program provides funding to food processors for efficient technologies and research and development. The Cap-and-Trade Program also includes opportunities for rice farmers to generate offsets and thereby benefit from the Program. See also Response to 45-Day Comment K-1.15.

J. PUBLIC PROCESS AND INFORMATION DISCLOSURE

J-1. Process and Timing

Sufficiency of Record and Response to Comments

J-1.1. Comment:

One of the previous commenters had questioned the sufficiency of the record and the Board's -- in the Agency's response to comments. And I have to say that as an attorney and someone who's been observing these rulemakings for some time, I've always found that the Final Statement of Reasons does fully respond to the comments. So I didn't understand that comment. (TURLOCKID3)

Response: Thank you for the support.

K. COMMENTS SUBMITTED TO THE MANDATORY REPORTING COMMENTS LOG

The comments below were submitted during the 45-day comment period for Proposed Amendments to the Regulation for the Mandatory Reporting of Greenhouse Gas Emissions rulemaking that was conducted in parallel to the rulemaking to amend the Cap-and-Trade Regulation. While these comments were submitted outside of the present Cap-and-Trade rulemaking, the comments included herein are related to the adopted amendments to the Cap-and-Trade Regulation and CARB staff provides the below responses in the interest of responsiveness and transparency.

K-1. Energy Imbalance Market (EIM) Imported Electricity

Concerns with 15-Day EIM Purchaser Approach

K-1.1. Comment:

Abandon the EIM Participant Approach: SMUD strongly opposes the changes in the 15-day language and the earlier 45-day language that abandon the use of CARB's current "bridge solution" for dealing with potential "outstanding" (secondary dispatch) emissions

in the Energy Imbalance Market (EIM). The bridge solution preserves environmental integrity in relation to emissions leakage by retiring allowances to cover the estimated outstanding emissions in the (EIM). The EIM participant approach as proposed in the 45-day language and modified in the 15-day language does nothing to enhance environmental integrity. Instead, the changed approach risks disruption of the EIM market just as it is expanding and bringing greater environmental benefits to California and the western region.

It is striking that the California Independent System Operator (CAISO), a collaborative state energy governing body that hosts the EIM market, recommended that the ARB retain the bridge solution through 2019 in 45-day comments – a recommendation ignored by CARB in the 15-day language. The utility EIM Participant approach proposed in the 15-day language imposes additional rules and costs on utility EIM participants simply for being part of the market, not in any manner related to a choice to procure or not procure of GHG emitting resources. As such, the 15-day language complicates EIM market participation, and in addition raises the potential that utility ratepayers may be overcharged for the obligation.

The “EIM Participant” language, as currently drafted, is essentially a GHG emissions “penalty” structure on California utilities that are either direct participants in the EIM, or LSEs within the CAISO service territory who have EIM energy cleared on their behalf. The GHG penalty is wholly disconnected from the decisions made by these EIM participants, other than the decision to participate in the first place. As such, the GHG penalty does not encourage any particular GHG reduction in the EIM market transactions. It is no wonder that the CAISO and market participants are recommending that the ARB abandon this problematic solution as they are worried about the unintended impacts on the EIM market place.

SMUD recommends that CARB accept the CAISO advice, which is supported by many market-involved stakeholders and retain the bridge solution at least through 2019. There is no loss of environmental integrity by doing so, because any estimated secondary dispatch emissions are still covered.

Take Time To Observe and Analyze EIM Market Changes: SMUD notes that the new CAISO market rule intended to lessen secondary dispatch has just gone into effect, hence there has not been adequate time for CARB Staff to analyze the effects of the rules approved by FERC to evaluate whether they have shifted the patterns of resource dispatch in the EIM, and whether they demonstrate a lower potential amount of energy “leakage” and therefore a lower *potential* for emissions “leakage.” CARB Staff’s decision to move forward at this time without information about the market changes is not justified by any urgency to retire the “bridge solution” currently in place. The bridge solution fully covers the estimated outstanding emissions – there is no “leakage” that remains to threaten environmental integrity.

SMUD notes that when FERC approved the new CAISO tariff, it mandated studies (165 FERC 61,050), which when completed will provide solid data on the effects of this EIM market change.

“In order to provide greater transparency to the market, we require CAISO to submit an informational report to the Commission on or before January 1, 2020. The CAISO notes that developing these reports will require collaboration with stakeholders to gain consensus on the concept of secondary dispatch and to determine the format and content of the reports. The report must describe the extent to which situations similar to the scenario described by DMM in its comments to CAISO’s stakeholder process materialize during the 12 months after the implementation of CAISO’s tariff revisions.” (165 FERC ¶ 61,050 at 18).

FERC goes on to say that it will not require a report on the “magnitude of secondary dispatch that continues to occur and the historic and ongoing volume of emissions associated with such secondary dispatch as PG&E and Powerex request” (*Id.* at 19) because these reports would be “focused on compliance with current and potential future CARB regulations regarding GHG emissions, and are not necessary to assess the justness and reasonableness of CAISO’s proposal.” (*Id.* at 19). However, it seems that CARB could have CAISO produce these exact reports by January 2020, and thus provide the agency with more representative data on how secondary dispatch and potential emissions leakage has been affected by this tariff change. The FERC mandated study is absolutely material to the issues in CARB’s rulemaking and MRRs.

Retaining the bridge solution for an additional period provides time for experience with the newly FERC-approved CAISO tariff to affect secondary dispatch. Retaining the bridge solution also provides time for better calculation of any remaining secondary dispatch emissions, improving accuracy over the rough approach of assuming that all EIM participation should be associated with the default emission factor in the calculation to determine outstanding emissions. In addition, retaining the bridge solution provides time for the study ordered by FERC on secondary dispatch emissions when approving the CAISO tariff aimed at reducing the problem. Lastly, retaining the bridge solution provides time for CARB to conduct additional analysis of the secondary dispatch problem as the EIM expands and the CAISO tariff change is in place.

Bottom Line: Nearly all the proposed EIM-related changes in the 45-day and 15- day language for the Cap and Trade and MRR regulations should be rejected by the Board. In the MRR, none of the proposed changes in Section 95111(h) should be adopted, and all references to “EIM Purchaser”, including the definition, should not be added. (SMUD2)

Response: The commenter requests CARB maintain the “bridge solution” to address EIM emissions leakage that is in the current Regulation and express concern that the adopted amendments do not incorporate a carbon price signal into the EIM algorithm. See Responses to 45-Day Comments E-1.3 and E-1.4.

The commenter expresses concern that calculation of EIM Outstanding Emissions will overstate EIM emissions leakage and that the adopted amendments may disincentivize EIM participation. See Response to 45-Day Comments E-1.6 on how the current methodology is accurately calculating EIM Outstanding Emissions and staff responses on the potential for unintended impacts on electricity market behavior.

The adopted amendments were designed to incorporate any reductions in EIM Outstanding Emissions resulting from recent changes implemented by CAISO to limit bid quantities in EIM. To the extent CAISO's changes reduce total EIM Outstanding Emissions, they will also reduce the share of EIM Outstanding Emissions for which each EIM Purchaser is responsible. CARB will continue to assess and report on EIM emission leakage and work with CAISO and stakeholders to develop possible solutions to emissions leakage resulting from the EIM algorithm in the algorithm.

Calculation of EIM Outstanding Emissions and EIM Purchaser Emissions

K-1.2. Comment:

Energy Imbalance Market, Imported Electricity [MRR section 95111(h)]

We appreciate the simplicity of the revised proposal for reporting Energy Imbalance Market (EIM) electricity imported to California. However, there are two remaining concerns relating to accuracy of the calculated emissions and allocation of the emissions to the market participants. LADWP sees two factors that will result in inaccurate accounting of EIM Greenhouse Gas (GHG) emissions:

- 1) Calculating emissions using the MRR default GHG emission factor for unspecified electricity instead of the actual EIM system average emission rate, and
- 2) Assigning the compliance obligation for the "EIM Outstanding Emissions" based on total retail sales instead of actual electricity purchased from the EIM market.

Each of these factors is discussed in more detail below.

- 1) CARB is proposing to apply the MRR default GHG emission factor for unspecified electricity to calculate emissions for EIM electricity imported to California. The MRR default GHG emission factor was calculated in 2010 based on marginal generating resources within the entire western interconnected electric grid, and is based on 10-year-old data. The EIM market is a subset of the western interconnected grid; therefore use of the MRR default GHG emission factor may overestimate emissions associated with EIM electricity imported to California. It would be more accurate to use the actual EIM system average GHG emission rate that could be calculated by the EIM market operator on an annual basis, rather than the MRR default GHG emission factor. The EIM

system average GHG emission rate would be more accurate by reflecting the actual EIM generating resources and it could be updated every year. However, if CARB chooses to use the MRR default emission factor, LADWP encourages CARB to update that factor to reflect changes in generating resources that have occurred in the western grid over the past 10 years.

- 2) CARB is proposing to distribute the "EIM Outstanding Emissions" to EIM electricity purchasers based on the EIM Purchaser's total retail sales, which does not accurately reflect the amount of electricity each EIM participant actually purchased from the EIM market. As a result, some EIM participants will over-pay and some will under-pay for emissions relative to their actual share of electricity purchased from the EIM market. It would be more accurate to divide up the EIM emissions based on each EIM Purchaser's relative volume of participation in the EIM market (i.e., actual EIM market purchases based on final settlement data) rather than total retail sales.

Lastly, LADWP asks CARB to clarify who has the Cap-and-Trade compliance obligation for the "Deemed Delivered EIM Emissions".

- MRR section 95111(h)(1)(A) *EIM Outstanding Emissions as calculated by CARB* states that "EIM Outstanding Emissions" equals "Total California EIM Emissions" less the sum of "Deemed Delivered EIM Emissions" as reported by EIM Participating Resource Scheduling Coordinators in section 95111(h)(1)(C).
- MRR section 95111(h)(1)(C) *Deemed Delivered EIM Emissions Reported by EIM Participating Resource Scheduling Coordinators* requires the EIM Participating Resource Scheduling Coordinators to annually calculate, report and cause to be verified emissions associated with electricity imported as deemed delivered to California by the EIM optimization model based on the results of each 5-minute interval.
- MRR section 95111 (h)(2) *EIM Purchaser Emissions as Calculated by CARB*, states "Each year after the verification deadline in section 95103(), CARB will calculate each EIM Purchaser's "EIM Purchaser Emissions" for the previous calendar year using information reported annually by EIM Participating Resource Scheduling Coordinators with imported electricity in EIM, retail sales in MWh reported annually by EIM Purchasers pursuant to 95111(h)(2)(B), and information received from CA/SO under an annual subpoena." It states CARB will calculate EIM Purchaser Emissions using the equation provided, which shows "EIM Outstanding Emissions" being multiplied by the ratio of each EIM Purchaser's Retail Sales to the total Retail Sales of all EIM Purchasers.
- EIM Purchaser is defined as an electrical distribution utility that directly or indirectly purchases electricity through the EIM to serve California load and receives an allowance allocation pursuant to the Cap-and-Trade regulation.

It is unclear who will have the Cap-and-Trade compliance obligation for the "Deemed Delivered EIM Emissions". LADWP has the following specific questions:

- The definition of Electricity Importer states "For electricity that is imported into California through the CAISO Energy Imbalance Market, the electricity importer is identified as the EIM Participating Resource Scheduling Coordinators and EIM Purchasers serving the EIM market whose transactions result in electricity imports into California." Typically the electricity importer is responsible for the Cap-and-Trade compliance obligation for imported electricity. Since both the Scheduling Coordinator and EIM Purchaser are defined as the electricity importer, will the compliance obligation be assigned to the EIM Participating Resource Scheduling Coordinator that reported the data, or will it be assigned to the EIM Purchasers?

For example, for EIM imports where LADWP is the Scheduling Coordinator, will the compliance obligation for "Deemed Delivered EIM Emissions" be assigned to LADWP solely, or will those emissions be divided among all EIM Purchasers based on retail sales? Who will be responsible for the compliance obligation for "Deemed Delivered EIM Emissions" where the California Independent System Operator (CAISO) is the Scheduling Coordinator?

- MRR section 95111 (h)(2) states that CARB will use information reported by the EIM Participating Resource Scheduling Coordinators to calculate the "EIM Purchaser Emissions". However, the equation to calculate "EIM Purchaser Emissions" does not include a term for the "Deemed Delivered EIM Emissions" reported by the Scheduling Coordinators. The definition of terms for the equation states that "EIM Outstanding Emissions" equals the total emissions calculated pursuant to section 95111(h)(1). This is confusing, and could mean that the "EIM Outstanding Emissions" is the same as "Total California EIM Emissions" that CARB calculates by multiplying the "deemed delivered" MWh by the MRR default emission factor.

Does CARB plan to use only the "deemed delivered" MWh data but not the "deemed delivered" emissions data reported by the EIM Participating Resource Scheduling Coordinators? If so, what is the value of requiring the EIM Participating Resource Scheduling Coordinators to annually calculate, report and cause to be verified emissions associated with electricity imported as deemed delivered to California by the EIM optimization model based on the results of each 5-minute interval? (LADWP2)

Comment:

Prior to Abandoning the Bridge Solution, CARB Should Revise the Calculation of Outstanding Emissions: As quarterly data published by the CAISO shows,⁶⁰⁹ EIM transfers into California (to date, only into the CAISO and PacifiCorp West balancing

⁶⁰⁹ <https://www.westerneim.com/Documents/ISO-EIMBenefitsReportQ3-2018.pdf>

areas) are generally balanced quite evenly with EIM transfers out of California over the course of the year (certain seasons result in more imports vs. exports depending on California's renewable output relative to load). The public EIM reports do not break out exports by generation type, but other CAISO reports detail the reduction in renewable curtailment in the state because California is exporting excess renewables in the middle of the day, thus displacing emitting resources elsewhere in the West with non-emitting resources. Furthermore, a high proportion of EIM entities are served primarily by hydropower,⁶¹⁰ meaning that the emissions profile of these entities is even *lower* than California.

The net flows across state-borders as well as the GHG intensity of the current EIM participants should be reviewed again by agencies and stakeholders before CARB proceeds to impose the GHG cost on specific entities rather than covering the obligation through the overall Cap and Trade market. The current MRR use of the default emission factor applied to all EIM imports should be reconsidered as the CARB moves to a permanent solution to replace the bridge solution. A significant portion of the present EIM is dominated by GHG-free hydropower, which often has a lot of room to adjust output. It is merely an assumption that marginal imbalances will be served by gas power plants with capacity factors less than 60% (the genesis of the current default emission factor). In addition, the data underlying the default factor is over 10 years old, and the entire number should be reconsidered prior to moving away from the bridge solution.

The calculation of "outstanding emissions" today rests on out of date assumptions and imperfect information about the EIM market as it grows. The intent of the calculation is reasonable – to identify potential "emissions leakage" associated with the EIM market, so that obligation can be "covered" by retiring allowances in one way or another. However, it is not reasonable to impose an expensive carbon obligation on specific entities that have no responsibility for the emissions identified, rather than on the overall Cap and Trade market. A solution based on better data and that allocates the carbon obligation to those EIM participants that cause the secondary dispatch. (SMUD2)

Response: See Response to 45-Day Comments E-1.6 on the calculation of EIM Outstanding Emissions and the use of the default emissions factor.

A commenter requests clarification on the role of deemed delivered emissions in the calculation of EIM Outstanding Emissions. Deemed delivered emissions are part of the EIM Outstanding Emissions calculation as set forth in MRR section 95111(h)(1)(a). "EIM Outstanding Emissions" equals "Total California EIM Emissions" less the sum of "Deemed Delivered EIM Emissions."

A commenter also requests clarification on which entities are responsible for deemed delivered EIM emissions. Under the Cap-and-Trade and Mandatory

⁶¹⁰ Idaho Power, Powerex, Portland General, Puget Sound Energy.

Reporting Regulations, EIM Purchasers are responsible for EIM Outstanding Emissions and Participating Resource Scheduling Coordinators are responsible for deemed delivered EIM emissions.

EIM Purchaser Requirements and ACS Entities

K-1.3. Comment:

BPA's October 22, 2018 comments expressed concerns that the proposed amendments would result in emissions attributable to EIM dispatch being accounted for twice for ACS specified source sales in the EIM: first in the ACS entity emission factor and again by placing a compliance obligation on the EIM Purchaser.

While BPA recognizes that the total potential for double counting in California is small today, BPA is concerned that this issue could become more significant should the number of ACS entities increase and/or as other states consider cap-and-trade programs that may link with California's program. States pursuing linkage with California's program would look to California to provide direction for how to accurately account for emissions for EIM imports. Application of this approach in a state such as Oregon where BPA meets approximately 30 percent of state electricity demand and has long-term contracts with 36 consumer-owned utilities, many of which purchase all of their power from BPA, would result in significant double-attribution of these emissions to BPA and its preference customers and increase costs to rate payers.

BPA continues to be supportive of CARB's efforts to better account for the carbon content of EIM imports into California, and urges CARB to continue working with the CAISO on a long-term solution to accurately account for carbon emissions associated with EIM secondary dispatch. In the meantime, BPA requests that CARB provide further clarification on how emissions attributable to secondary dispatch in the EIM would be accounted for an ACS entity. (BPA2)

Response: The commenter requests clarification on the treatment of ACS entities under the adopted amendments. The Bonneville Power Administration (BPA), as a wholesale power marketer, is not an EDU and does not receive allowance allocation. BPA does not meet the definition of EIM Purchaser in the adopted amendments, which is limited to EDUs receiving allowance allocation, and will not share responsibility for reporting or addressing EIM Outstanding Emissions in MRR or the Cap-and-Trade Program at this time. Nonetheless, CARB does not see a nexus between the reporting of the mix of resources available to BPA to serve its California customers, as required under MRR, and EIM Outstanding Emissions, which accounts for emissions leakage in EIM.

VI. PEER REVIEW

Health and Safety Code Section 57004 sets forth requirements for peer review of identified portions of rulemakings proposed by entities within the California Environmental Protection Agency, including CARB. Specifically, the scientific basis or

scientific portion of a proposed rule may be subject to this peer review process. Here, CARB determined that the rulemaking at issue does not contain scientific basis or a scientific portion subject to peer review, and thus no peer review as set forth in section 57004 was or needed to be performed.

ATTACHMENT B: ACRONYMS

AB32	Assembly Bill 32 -- California Global Warming Solutions Act of 2006
AF	assistance factor
APA	Administrative Procedures Act
APCR	Allowance Price Containment Reserve
APD	Authorized Project Designee
ARB	California Air Resources Board
BAA	Balancing Authority Area
BPA	Bonneville Power Administration
CAISO	California Independent System Operator
CAR	Climate Action Reserve
CARB	California Air Resources Board
CCA	community choice aggregator
CCEEB	California Council on Environmental and Economic Balance
CCR	California Code of Regulations
CEC	California Energy Commission
CEJA	California Environmental Justice Alliance
CEQA	California Environmental Quality Act
CHP	combined heat and power
CITSS	Compliance Instrument Tracking System Service
CMTA	California Manufacturers & Technology Association
CMUA	California Municipal Utilities Association
CO ₂	carbon dioxide
CO _{2e}	carbon dioxide equivalent
CLFP	California League of Food Processors
CPUC	California Public Utilities Commission
CSCME	Coalition for Sustainable Cement Manufacturing and the Environment
DG	distributed generation
DWR	Department of Water Resources
EA	California Environmental Quality Act Environmental Assessment
EAAC	Economic and Allocation Advisory Committee
EDF	Environmental Defense Fund
EDU	electrical distribution utility
EE	energy efficiency
EGU	Electric Generating Unit
EIM	Energy Imbalance Market
EITE	emissions-intensive, trade-exposed
EJAC	Environmental Justice Advisory Committee
EPA	U.S. Environmental Protection Agency

EPS	California's Emissions Performance Standard
ETS	Emissions Trading Scheme
EV	electric vehicle
EU ETS	European Union Emissions Trading System
FED	Functional Equivalent Document
FERC	Federal Energy Regulatory Commission
FSA	financial services administrator
FSOR	Final Statement of Reasons
GGRF	Greenhouse Gas Reduction Fund
GHG	greenhouse gas
GWP	global warming potential
ICE	Intercontinental Exchange
IEP	Independent Energy Producers Association
IEPR	Integrated Energy Policy Report
IETA	International Emissions Trading Association
IOU	investor-owned utility
IPCC	Intergovernmental Panel on Climate Change
IPP	Intermountain Power Plant
IRP	Integrated Resource Plan
ISO	International Organization for Standardization
ISOR	Initial Statement of Reasons
LADWP	Los Angeles Department of Water and Power
LAO	Legislative Analyst's Office
LCFS	Low Carbon Fuel Standard
LNG	liquefied natural gas
LSE	load serving entity
MID	Modesto Irrigation District
MMC	Mine Methane Capture
MRR	Mandatory Reporting of Greenhouse Gas Emissions Regulation
MSW	Municipal Solid Waste
MTCO _{2e}	Metric ton of carbon dioxide equivalent
MMTCO _{2e}	Million metric tons of carbon dioxide equivalent
MWD	Metropolitan Water District
M-S-R	M-S-R Public Powers Agency, an Agreement among Modesto Irrigation District, the City of Santa Clara and the City of Redding
NAICS	North American Industry Classification System
NOV	Notice of Violation
NOVS	Notice of Offset Verification Services
NCPA	Northern California Power Agency
NOx	oxides of nitrogen
NRDC	Natural Resources Defense Council
NWF	National Wildlife Federation
ODS	ozone depleting substance
OEHHA	Office of Environmental Health and Hazard Assessment
OPDR	Offset Project Data Report
OPO	Offset Project Operator

OSHA	Occupational Health and Safety Administration
PAR	Primary account representative
PCC	Portfolio Content Category, aka “bucket”
PG&E	Pacific Gas and Electric
POU	publicly owned utility
PPA	Power Purchasing Agreement
PSE	Puget Sound Energy
PUC	See CPUC
QE	qualified export
QF	Qualifying Facilities
REC	Renewable Energy Credit
REDD	United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries
RFF	Resources for the Future
RGGI	Regional Greenhouse Gas Initiative
RPS	Renewables Portfolio Standard
SCE	Southern California Edison
SCG	Southern California Gas Company
SCPPA	Southern California Public Power Authority
SDG&E	San Diego Gas and Electric
SEC	Securities and Exchange Commission
SIP	State Implementation Plan
SLCP	Short- Lived Climate Pollutant
SMUD	Sacramento Municipal Utility District
SWP	California State Water Project
TID	Turlock Irrigation District
VAE	voluntarily associated entity
VEA	Valley Electric Association
VRE	voluntary renewable energy
WCI	Western Climate Initiative
WECC	Western Electricity Coordinating Council
WREGIS	Western Renewable Energy Generation Information System
WPTF	Western Power Trading Forum
WSPA	Western States Petroleum Association
WTE	waste-to-energy
ZEV	Zero Emission Vehicle