

UPDATED INFORMATIVE DIGEST

PROPOSED INNOVATIVE CLEAN TRANSIT REGULATION, A REPLACEMENT OF THE FLEET RULE FOR TRANSIT AGENCIES

Sections Affected: Proposed amendments to California Code of Regulations, title 13, sections 2023, 2023.1, 2023.2, 2023.3, 2023.4, and adoption of sections 2023.5, 2023.6, 2023.7, 2023.8, 2023.9, 2023.10 and 2023.11, and to recodify all of these into a new Article 4.3.

Summary of Existing Regulation: Under the current Fleet Rule For Transit Agencies originally adopted in 2000 and subsequently amended in 2004 and 2006, sections 2023, 2023.1, 2023.2, 2023.3, and 2023.4, title 13, California Code of Regulations (CCR), public transit agencies operating urban bus fleets were required to select either the diesel bus path or the alternative-fuel bus path. The diesel bus path required retrofitting existing buses with diesel particulate filters, while agencies utilizing the alternative-fuel path had to ensure that 85 percent of urban bus purchases were alternative fueled buses. To date, about 55 percent of all buses in California operate on alternative fuels.

In the 2006 amendment to the Fleet Rule For Transit Agencies, there was a requirement for larger transit agencies with more than 200 urban buses to purchase zero-emission buses (ZEB) starting in 2011 for transit agencies that utilized the diesel path and one year later for transit agencies that utilized the alternative fuel path. 15 percent of annual new bus purchases for those agencies were required be ZEB. The ten transit agencies subject to the ZEB purchase requirements accounted for about sixty percent of the statewide urban bus fleet. The ZEB purchase requirement sunsets in 2026.

As part of the ZEB purchase requirement, the 2006 amendments included an advanced demonstration of ZEBs for transit agencies on the diesel path and a CARB evaluation of the status of technology. Five transit agencies in the Bay Area formed the Zero-Emission Bay Area (ZEBA) program. The original ZEBA program included twelve fuel cell electric buses (FCEBs) deployed in 2010 with an additional FCEB was added to the fleet and put into service in late in 2015. At the time, FCEBs were the only available zero-emission technology to meet the demands of transit service. To date, the ZEBA program has demonstrated impressive milestone accomplishment and the feasibility of incorporating ZEBs into transit fleet operation.

In 2009, CARB staff presented ZEB technology evaluations to the Board and concluded that the ZEB technologies were not commercially ready at that time. The Board, through Resolution 09-49, found, among other things, that

technologies had not sufficiently advanced to appropriately assess commercial readiness, that costs of ZEBs remained significantly higher than the target prices on which the existing fleet rule had been premised, and that a new focus on GHG emissions reductions from transit was appropriate. The Board directed staff to prepare proposed amendments to the regulation to delay the ZEB purchase requirement, conduct further research on commercial-readiness metrics, implement the purchase requirement once commercial readiness had been achieved, and report back to the Board in 2012 on progress towards ZEB commercialization. In 2010, CARB staff issued a regulatory advisory to temporarily withhold the implementation of the purchase requirement for ZEBs. To date, except for the ZEB purchase requirement, all other regulatory provisions have been met and are being implemented.

CARB staff conducted a comprehensive technology evaluation in 2015 and concluded the ZEB technologies were now in their early commercialization stage. CARB staff updated the Board in February 2016 at a public hearing about the status of ZEB technology, price, and deployment. In the update to the Board, staff discussed plans to reinstate ZEB purchase requirements, including the public process on amending the rule with a broader goal of making a transition to an all ZEB fleet. Staff has continued to analyze and update technical and cost information, as well as evaluate various regulatory strategies. The ICT regulation is a result of that process.

Description of the Regulatory Action: Staff proposed the following elements to ensure a successful and smooth transition to a complete ZEB fleet:

(1) ZEB Rollout Plan

- Each transit agency would be required to submit a ZEB Rollout Plan approved by governing board.
- The Rollout Plan will demonstrate how a transit agency plans for ZEB purchase and infrastructure buildout, and associated financial planning and workforce training.
- The ZEB Rollout Plan would be submitted to the Board, with due dates of June 30, 2020, for a large transit agency and June 30, 2023, for a small transit agency. (A large transit agency is one that that operates at least 65 buses in their annual maximum service in the South Coast or the San Joaquin Valley Air Basin, or at least 100 buses in the annual maximum service in an urbanized area with population of at least 200,000. All others are defined as small transit agencies.)

(2) ZEB purchase requirements

- A large transit agency would purchase ZEBs according to the following schedule:
 - Starting January 1, 2023, 25 percent of annual new bus purchases;

- Starting January 1, 2026, 50 percent of annual new bus purchases; and
 - Starting January 1, 2029, 100 percent of annual new bus purchases.
 - A small transit agency would purchase ZEBs according to the following schedule:
 - Starting January 1, 2026, 25 percent of annual new bus purchases; and
 - Starting January 1, 2029, 100 percent of annual new buses purchases.
- (3) Discharge for early compliance
- Purchase requirements otherwise effective in calendar year 2023 would be discharged if California transit agencies collectively purchase 850 or more ZEBs by December 31, 2020.
 - Purchase requirements otherwise effective in calendar year 2024 would be discharged if California transit agencies collectively purchase 1,250 or more ZEBs by December 31, 2021.
- (4) Zero-Emission Mobility Option
- A transit agency may use zero-emission vehicles with a gross vehicle weight rating of 14,000 pounds or less, such as cars, vans, bicycles, or scooters to meet a portion of its ZEB requirements.
- (5) ZEB Bonus credit
- Bonus credits to recognize early placement of ZEBs, including extra credits for early FCEBs and partial credits for electric trolleybuses.
- (6) Optional Joint Zero-Emission Bus Group
- Allows transit agencies to form a Joint Zero-Emission Bus Group to pool resources and more efficient utilization of infrastructure.
- (7) Use of low NOx engines
- Starting January 1, 2020, transit agencies would be required to purchase low NOx engines if the engine or the hybrid propulsion system paired with the engine are commercially available for at least two years and are certified with lowest level of NOx emissions that is suitable for the bus and fuel type being purchased. The requirement does not apply to buses dispatched from NOx exempt areas. NOx exempt area are generally rural areas with cleaner air.
- (8) Use of renewable fuels
- Starting January 1, 2020, large transit agencies would be required to use renewable fuels for diesel and compressed natural gas (CNG) buses when fuel contracts are renewed to support existing low carbon fuel policies in California.

(9) Deferral from ZEB purchase requirements

- The ICT regulation provides safeguards to transit agencies in the event that a situation is beyond a transit agency's control. A transit agency may submit a request for exemption from the ZEB purchase requirement for circumstances outside the transit agency's control including the following:
 - Infrastructure delays beyond two years
 - Available ZEB mileage cannot meet daily mileage needs
 - Available ZEBs cannot meet gradeability needs
 - Financial hardship

(10) Reporting

- Starting 2021 all transit agencies would be required to report their fleet information annually for the prior compliance year.

Staff recognizes the challenges transit agencies are facing to transition to ZEB fleets, and the commitments that transit agencies, local government agencies, and the State need to make. Even though ZEB technologies have advanced rapidly in recent years, continued improvements in ZEB costs and performance are still needed to facilitate the transition to full zero-emission technologies. Therefore, staff plans to continue to closely monitor the ZEB market and transit fleet experiences as they deploy ZEBs in the next several years. At least one year prior to initiation of any 2023 purchase requirements, CARB staff plans to provide the Board with comprehensive review of costs, technology performance, and ZEB reliability. This information will help the State refine policies to further advance zero emission technologies and inform funding strategies related to zero-emission vehicles and infrastructure. It will also provide sufficient lead time for the Board to make adjustments to the ICT regulation, if needed.

The performance review would identify the status of ZEB technology and would help the State design policies to further advance zero-emission technologies, and inform funding strategies related to zero-emission vehicles and infrastructure.

Objectives and Benefits of the Regulatory Action: The ICT regulation is identified in the State Strategy for the State Implementation Plan (State SIP Strategy) and 2017 Scoping Plan as a necessary component for California to achieve established near- and long-term air quality and climate mitigation targets. In California, the transportation sector is responsible for 41 percent of total GHG emissions, 80 percent of NOx emissions, and 90 percent of diesel particulate matter (PM). Diesel PM is a fine particulate, a toxic air contaminant, and a carcinogen that significantly threatens public health and the environment.

Broadly implementing zero-emission technologies is a necessary component to effectively address these multiple and complicated air quality and climate protection issues. ZEBs have a higher equivalent fuel efficiency compared to the conventional internal combustion engine technologies and provide immediate

health benefits to local communities and significantly reduce petroleum and other fossil fuel use. The ICT regulation is one step needed to accelerate the transition to zero emissions in the heavy-duty vehicle sector.

In general, the ICT regulation would provide benefits in the following areas:

- (1) Health benefits to Californians and workers at transit agencies through improved air quality and reduced premature mortality, hospital visits, and lost school or work days;
- (2) Environmental benefits in air quality improvement, climate protection, and energy consumption reductions.

The anticipated benefits are summarized below:

Air Quality and Climate Benefits

The demanding air quality and climate protection goals that California faces require cleaner technologies deployed, especially in the transportation sector. The ICT regulation helps reduce emissions through several ways:

- (1) Eliminates tailpipe emissions and avoids excess emissions caused by deteriorated vehicles;
- (2) Increases fuel efficiency and thereby reduces the use of energy, which is the major source of carbon dioxide (CO₂) emissions through a combustion process;
- (3) Better utilizes non-emitting renewable sources, such as solar energy;
- (4) Reduces emissions from oil and gas extraction and production processes; and
- (5) For the near term, pairs with the use of low NO_x engines for additional NO_x emission reduction.

Public Health and Worker Safety Benefits

Reduced emissions of PM_{2.5} and NO_x reduce premature mortality, hospitalizations, and emergency room visits. These benefits will accrue to the general public and workers exposed to emissions from transit buses, such as bus operators, passengers, and employees who work around bus traffic.

Energy Saving and Reduction of Petroleum Fuel Dependence

In the long term, implementation of the ICT regulation will lead the heavy-duty vehicle sector to transform from petroleum and other fossil-based fuels toward hydrogen or electricity for public transportation. The superior equivalent fuel efficiency of ZEBs and the fuel sources together help pave a low carbon future for the heavy-duty vehicle sector.

In addition, the ICT regulation incents other zero-emission mobility options for transit agencies. The zero-emission mobility option can further reduce emissions, enhance mobility, and improve efficiency in the public transit system.

Leading Zero-Emission Technologies in Other Heavy-Duty Sectors

Transit agencies have played an important role as the leader deploying cleaner, more efficient technologies in the heavy-duty vehicle sector. Examples include diesel particulate matter filters, CNG engines, and low NOx engines. Transit agencies are also playing that leadership role in transforming the heavy duty sector to zero-emission technologies. Transferable technologies include drivetrains, fueling and charging systems, workforce training, and operations and maintenance expertise.

Benefits in Disadvantaged Community and Job Creation

The ICT regulation is anticipated to deliver public health and environmental benefits that include GHG, criteria, and toxic pollutant emission reductions in disadvantaged communities (DACs) where there are more transit dependent riders. Additionally, California is home to ZEB manufacturing, which brings high-quality jobs to local communities. There are several ZEB manufacturing plants in California, which stand to increase production of ZEBs, and thus manufacturing and related jobs, including in DAC areas. Electricians, construction companies (such as infrastructure installers), some bus manufacturers, fuel cell and battery production, and electric drivetrain parts and components businesses can fall into the small business category, which may benefit.

Other Societal Benefits

The ICT regulation includes options to encourage improved mobility and connectivity with zero-emission transportation modes. These efforts would make communities and cities more sustainable and enhance the benefits of investments in cleaner technologies by reducing growth in light-duty vehicle miles traveled (VMT). In the long term, advanced transportation systems and technologies, such as battery electric vehicles and zero-emission micro transit, have the potential to be a transformative element of a cleaner, safer, and more efficient transportation system.

The Board's Action: At the initial September 28, 2018 public hearing, the Board was informed of the proposed Innovative Clean Transit Regulation, A Replacement of The Fleet Rule for Transit Agencies and received written and oral comments. The Board did not take action on the proposal at the September 2018, Board Hearing. The Board directed the Executive Officer to determine if additional conforming modifications to the regulation were appropriate and to make any proposed modified regulatory language available for public comment, with any additional supporting documents and information, for a period of at least

15 days in accordance with Government Code section 11346.8. The Board further directed the Executive Officer to consider written comments submitted during the public review period and make any further modifications that are appropriate available for public comment for at least 15 days. The Executive Officer was directed to evaluate all comments received during the public comment periods, including comments raising significant environmental issues, and prepare written responses to such comments as required by CARB's certified regulations at California Code of Regulations, title 17, sections 60000-60007 and Government Code section 11346.9(a). The Executive Officer was further directed to present to the Board, at a subsequently scheduled public hearing, staff's written responses to environmental comments and the final environmental analysis for consideration for approval, along with the finalized regulation and amendments for consideration for adoption.

The text of the proposed modifications to the originally proposed regulation and supporting documents were made available for a supplemental 15-day comment period on November 9, 2018, on CARB's website accessible to stakeholders and interested parties. For a description of all changes in the effect of the regulation resulting from the completed rulemaking process, please see the Board's Notice of Public Availability of Modified Text and Availability of Additional Documents and Information in this record. The written responses to the Draft Environmental Analysis (EA) and the Final EA were posted for public review on December 4, 2018, and December 7, 2018, respectively.

On December 14, 2018, the Final EA, Response to Comments, Final Regulation Order, and Proposed Resolution 18-60 for the proposed regulation were presented at the second Board Hearing. At that hearing, the Board adopted Resolution 18-60 which approved written responses to the Draft EA, certified the Final EA, and approved the proposed amendments to the ICT regulation.

Comparable Federal Regulations: There are no comparable federal regulations, necessitating the proposed ICT regulations to protect public health and achieve climate protection benefits.