

State of California
Air Resources Board

Notice of Public Availability of Modified Text

Proposed Amendments to the Regulation for Reducing Sulfur Hexafluoride Emissions
from Gas Insulated Switchgear

Public Hearing Date: September 24, 2020
Public Availability Date: May 5, 2021
Deadline for Public Comment: May 26, 2021

At its September 24, 2020, public hearing, the California Air Resources Board (CARB or Board) approved for adoption the proposed amendments to sections 95350 to 95359 and new sections 95354.1, 95357.1 and 95359.1, Title 17 California Code of Regulations which comprise the Regulation for Reducing Greenhouse Gas (GHG) Emissions from Gas-Insulated Equipment (GIE).

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 as required by 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, and present the regulation to the Board for further consideration if warranted, or take final action to adopt the regulation after addressing all appropriate modifications.

The resolution and all other regulatory documents for this rulemaking are available online at the following CARB website:

<https://ww2.arb.ca.gov/rulemaking/2020/sf6>

The text of the modified regulatory language is shown in Attachment A. The originally proposed regulatory language is shown in ~~striketrough~~ to indicate deletions and underline to indicate additions. New deletions and additions to the proposed language that are made public with this notice are shown in ~~**bold double strikethrough**~~ and **bold double underline format**, respectively.

The modified language reflects changes that were presented and discussed at the Board meeting, and reflected in [Resolution 20-28](#), as well as additional changes that are consistent with the Board's direction. These changes include:

- Converting phase-out exemption request process to a notification process in the case of equipment failure.

- Revising and clarifying terminology and processes as appropriate.
- Consideration of technically sound and consistently applied methodologies to measure equipment capacity.
- Reflecting revised effective date of amendments.

The “Summary of Proposed Modifications” section of this notice contains a detailed description of changes made to the regulatory language to address the issues listed above, and other issues.

In the Final Statement of Reasons, staff will respond to all comments received on the record during the comment periods. The Administrative Procedure Act requires that staff respond to comments received regarding all noticed changes. Therefore, staff will only address comments received during this 15-day comment period that are responsive to this notice, or the changes detailed in Attachment A.

Summary of Proposed Modifications

The following summary does not include all modifications to correct typographical or grammatical errors, changes in numbering or formatting, nor does it include all of the non-substantive revisions made to improve clarity.

1. Modifications to Section 95351. Definitions and Acronyms.

The definition of “Active Gas-Insulated Equipment” or “Active GIE” is modified to reflect the fact that a new definition of “Spare GIE” has been added. The new definition of “Spare GIE” mostly retains the language removed from the definition of Active GIE.

The new definition of “Blank-off Pressure” is added because this concept is used in the new nameplate capacity adjustment process added to section 95357.2, and the term must be defined.

The definition of “Catastrophic Failure” has been revised, and the term has been changed to “Failure.” The changes are in response to Board direction that CARB staff work with the California Independent System Operator (CAISO) to revise this definition and the associated provisions to ensure GIE Owners are granted sufficient flexibility to immediately respond to issues impacting electricity system reliability. The revisions will grant GIE Owners an option to immediately replace SF₆ GIE that are subject to Failure through the notification process discussed further in section 8 of this Notice. The changes also make the definition more straightforward and remove language that could be subject to interpretation.

The definition of “Covered Insulating Gas” is modified to change a citation from “section 95354(l)” to “section 95354(m)” to reflect the insertion of new section 95354(f) as discussed in section 4 of this Notice.

The definition of “Gas Cart” is modified to add “A gas cart may utilize gas containers, but gas containers do not fall within the definition of gas cart.” This clarification is

necessary to respond to stakeholder feedback that the definition could be interpreted as including gas containers, and it is important to distinguish gas carts from gas containers.

The definition of “Gas Container” is modified to add the word “single.” Stakeholder feedback indicated the previously proposed definition did not clearly distinguish between a gas container required to be weighed annually pursuant to section 95354(g), and vessels inside GIE or gas carts which are accounted for separately.

The new definition of “Flow Meter” is added because new provisions explained in section 4 of this Notice allow GIE Owners to use flow meters to determine the amount of gas present within gas carts or added to/extracted from GIE, and the term must be defined.

The definition of “GIE” is modified to replace “the transmission of electric current” with “operation of.” This change reflects stakeholder comments that “transmission” is a term used by industry to describe the movement of electricity at voltages greater than 72.5 kilovolts (kV). CARB staff intended for “GIE” to refer to equipment operating both above and below 72.5 kV, and therefore, the term “transmission” has been removed.

The definition of “GIE Owner” is modified to expand the options for the type of entity that a GIE owner is, and now includes a limited liability company, subsidiary, parent company, or other entity at the GIE owner’s discretion. This change is necessary to accommodate the various types of entities that are subject to the Regulation, and is intended to clarify and expand options for GIE owners to report and comply with the Regulation.

The definition of “Nameplate Capacity” is modified to include the value calculated pursuant to new section 95357.2 as the nameplate capacity of a GIE device.

The definition of “Replacement Parts” is modified in response to stakeholder comments that the previously proposed definition was too narrow and would preclude certain components from being covered. The revised definition clarifies the definition of replacement parts, and is based on revisions suggested in stakeholder comments.

The new definition of “Spare GIE” is added to refer to GIE not immediately activated upon acquisition. This new definition is needed due to the addition of new provisions that describe how Spare GIE should be handled in the phase-out exemption process, as described in section 8.

The definition of “Substantive Error” is removed because sections 95355(c) and 95359(b) are deleted or modified and now the term “Substantive Error” is no longer included in the Regulation.

A new definition of “Tare Weight” has been added. This term is included in new section 95354(g)(3), for the reasons described in section 4, and must be defined.

A new definition of “Voltage Capacity” has been added. In the proposed amendments, SF₆ phase-out dates are established in part based on “Voltage Capacity,” but this term was not defined in the 60-day proposal. A definition has been added to specify that this term reflects the maximum voltage that the manufacturer specifies for a GIE device to operate within, so called “rated voltage,” as opposed to “nominal voltage.”

2. Modifications to Section 95352. Sulfur Hexafluoride Phase-Out.

Section 95352(a)(1) is modified to specify that the GIE owner may acquire SF₆ GIE after the phase-out if they were acquired in response to a failure. New sections 95352(a)(1)(A) and 95352(a)(1)(B) were added to specify that GIE acquired through the exemption or notification process can only be used in certain locations, and includes references to where that information can be found in the Regulation. This information was in section 95357(j) of the 60-day proposal, but has been moved for clarity. See section 8 of this Notice for further discussion.

Section 95352(a)(4) is modified to remove the requirement that, after the phase-out, SF₆ GIE replaced under the manufacturer’s warranty could only be acquired if the transaction was “at no-cost to the GIE owner.” Stakeholder comments indicated that GIE owners may incur costs to replace the GIE, such as shipping fees.

3. Modifications to Section 95353. Annual Emissions Limit.

Sections 95353(b)(1) and (2) are modified to change the year in which the provisions of these sections apply. These changes are necessary because these amendments are now expected to become effective by January 1, 2022. The provision in section 95353(b)(1) may apply to data year 2021 because GIE owners are already required under the current Regulation to collect all data needed to fulfill this requirement. In section 95353(b)(2), the word “to,” was also changed to “through” for clarity because CARB staff intended to include the year 2024.

Section 95353(b)(3) is modified to remove “to 2032” and replace it with “and beyond” because there are scenarios that would require calculation of $C_{avg,j,i}$ after 2032. An example is installation of a new non-SF₆ GIE device that uses covered insulating gas and that has not replaced a GIE device that was included in the calculation of *BL CO_{2e} capacity*^{12/31/2024}.

Section 95353(b)(3)(C) is modified to remove “with an SF₆ phase-out exemption” and replace it with “pursuant to section 95352(a)(1)” to reflect the fact that the referenced section now includes an additional way in which SF₆ GIE may be acquired after the phase-out deadline (that is, through a notification process in response to a failure). Sections 95353(c) and 95353(e) are modified to change the conversion factor for the number of pounds in a metric ton from 2,205 to 2,204.62. This change will improve accuracy of reported emissions and consistency with other GHG reporting programs.

Section 95353(d) is modified to add “who elect to apply an early action credit” and to add the terms “o,” “l,” and “C_{er,l}” to the early action credit equation. The new phrase is

necessary to clarify that the early action credit is an optional provision. The new terms in the equation are needed to ensure that non-SF₆ GIE that are counted in the early action credit and subsequently removed from regular use or transferred while in use are subtracted from the early action credit.

Section 95353(e) is modified to replace “In calendar” with “For data” to be consistent with terminology used throughout the section.

New section 95353(e)(1) is added to require the new term *BL CO₂e capacity*_{12/31/2024,i} be calculated for data years 2025 and beyond and to describe the circumstances and methodology for the calculation. This new section covers situations when a GIE device included in the calculation of *BL CO₂e capacity*_{12/31/2024} or *BL CO₂e capacity*_{12/31/2024,i-1} undergoes certain changes that necessitate corrections to the previously calculated baseline. A GIE owner’s emissions limit is calculated from the GIE owner’s calculated baseline (*BL CO₂e capacity*_{12/31/2024} or *BL CO₂e capacity*_{12/31/2024,i-1}). These modifications are necessary to ensure that the emissions limit and baseline incentivize the replacement of SF₆ GIE with non-SF₆ GIE, avoid incentivizing the use of phase-out exemption requests, and accurately reflect changes in SF₆ capacity that occur from nameplate adjustments or GIE removals or replacements.

These changes are consistent with the intention in the 60-day proposal, which states that “average system capacity will not decrease when SF₆ GIE are replaced with non-SF₆ GIE,” meaning “the equivalent allowed emission rate will effectively grow over time, making it easier to comply with the Regulation.” They are also consistent with the 60-day proposal statement “The availability of the phase-out exemption process allows GIE owners considerable flexibility to use non-SF₆ GIE when possible, but disallowing the addition of these GIE purchased after the phase-out date to the calculation of the annual emissions limit will incentivize GIE owners to minimize their reliance on the phase-out exemption process to ensure that the Regulation achieves the gradual transition away from SF₆ GIE.”

Section 95353(f) is modified to remove “to 2032” and replace it with “and beyond” and to revise “*BL CO₂e capacity*_{12/31/2024}” to be “*BL CO₂e capacity*_{12/31/2024,i}.” These changes are necessary to reflect the new name of the term in revised section 95353(e), and because the value of “Average CO₂e Capacity_i” and *BL CO₂e capacity*_{12/31/2024,i} may change after 2032 and the Regulation therefore needs a methodology to account for those changes. Finally, the reference to section 95353(e) was changed to 95353(e)(1), because the value of *BL CO₂e capacity*_{12/31/2024,i} is now calculated in section 95353(e)(1).

Section 95353(g)(1) is modified to allow for early action credit accrued by the GIE owner to be reflected in the GIE owner’s emissions limit beginning in 2021, as requested in stakeholder comments. The word “to,” was also changed to “through” for clarity because CARB staff intended to include the year 2024.

Tables 4 and 5 of section 95353(g)(1) are modified to correct an error in the 60-day proposal. Beginning in 2025, a GIE owner should determine whether their emissions

limit is one or two percent of their baseline capacity (*BL CO₂e capacity_i*), which is also the basis of calculating emissions limits per section 95353(g)(2).

Section 95353(g)(2) is modified to remove “to 2032” and replace it with “and beyond” and section 95353(g)(3) is removed. These changes are necessary because the GIE owner’s “*BL CO₂e capacity_i*” may change after 2032 and the Regulation needs a provision to calculate “*BL CO₂e capacity_i*” after 2032.

Section 95353(h) is modified to clarify that this provision applies to data year 2021 and beyond.

Sections 95353(i) and (j) are modified due to the revisions to the definition of “GIE owner” described in section 1. In order for CARB staff to track and record changes in the way a GIE owner has defined themselves (either a combination or split), the reason(s) for the change and a description of the relationship between the entities involved in the combination/split must be provided. These sections are also modified to change a citation from “section 95355(d)” to “section 95355(c)” to reflect the removal of section 95355(c) as discussed in section 6 of this Notice.

4. Modifications to Section 95354. Inventory and Insulating Gas Procedures.

Sections 95354(a)(2) and 95354(a)(2)(A) are modified to change the requirement to record the date each device in the GIE inventory was manufactured to identify the year the device was manufactured. Stakeholder comments indicated that manufacturers sometimes provide only the year on the nameplate, and staff considers reporting of the year sufficient to accomplish the goals of this requirement.

Sections 95354(a)(3)(A-B) are modified to specify that whenever the serial number of a GIE device is unknown, the GIE owner may use any other unique identifier as the serial number for recordkeeping and reporting purposes. In these cases, the GIE owner must retain documentation that allows for each GIE device-unique identifier combination to be readily identifiable, should a need to inspect the device arise.

Section 95354(a)(8) is modified, and new sections 95354(a)(8)(A-C) are added to specify the nameplate capacity that must be reported for each GIE device. These changes are necessary because the GIE manufacturers may provide updated nameplate capacities to GIE owners, and GIE owners may choose to perform nameplate capacity adjustments per new section 95357.2. New section 95354(a)(8)(A) is necessary to specify that, if using a nameplate capacity value specified by the GIE manufacturer, the GIE owner must report the latest value available from the manufacturer during the data year (that is, the most recent value available to the GIE owner during the data year). New sections 95354(a)(8)(B)(1.-2.) are added to require certain data elements collected as part of the new nameplate capacity adjustment process in section 95357.2 be reported. New section 95354(a)(8)(C) is needed to track any GIE device that the GIE owner intended to perform a nameplate capacity adjustment on, but did not due to the GIE device having compromised integrity. These new sections are needed to allow CARB staff to verify that reported nameplate values

are correct and that nameplate capacity adjustments are performed in a manner consistent with the regulatory requirements specified in new section 95357.2.

Section 95354(a)(10)(A)(1.) is modified to remove the requirement that GIE owners report the number of days each GIE device was not active. CARB staff can calculate this value by subtracting the reported number of days the device was active from the number of days in the year. It is unnecessary to require the GIE owner to provide this value.

Section 95354(a)(10)(A)(2.) is modified to add a methodology GIE owners may follow to determine the amount of covered insulating gas within a device when it is acquired that does not rely on information from the manufacturer. Such a methodology was not included in the 60-day proposal, and has been added, based on staff's understanding that manufacturer-provided volume of gas in the GIE device may be inaccurate. Additionally, this section now specifies that if information provided by the manufacturer is used, the GIE owner is responsible for ensuring the manufacturer accounts for the gas consistent with section 95354(b)(1) or (2). This change will ensure data provided by the manufacturer meet the accuracy requirements of the Regulation. Finally, the year in which the provision applies is changed. This change is necessary because these amendments are now expected to become effective by January 1, 2022.

Sections 95354(a)(10)(A)(3.-6.) are modified to change the year in which the provisions of these sections apply. These changes are necessary because these amendments are now expected to become effective by January 1, 2022. Further, section 95354(a)(10)(A)(3.) is modified to allow for the amount of covered insulating gas added to the device to be calculated pursuant to new section 95354(b)(2), which was added for the reasons described below.

New sections 95354(a)(10)(A)(7.-9.) are added to require GIE owners to identify any of the specified changes in the operational status of each GIE device during the year, whether the GIE device was included in the previously calculated baseline capacity, and whether GIE included in the GIE owner's baseline that were removed from regular use were not replaced, replaced by a SF₆ or non-SF₆ GIE device. Additionally, for those replaced by an SF₆ GIE device, how that SF₆ GIE device was acquired, and the manufacturer's serial number of the replacement device. Some of this information was previously required to be reported pursuant to section 95354(a)(12), which has been removed. These changes are necessary to allow CARB staff to verify information provided pursuant to the new provisions in section 95353(e)(1).

Sections 95354(a)(10)(B) and 95354(a)(11) are modified to change the year in which the provisions of these sections apply. These changes are necessary because these amendments are now expected to become effective by January 1, 2022.

Sections 95354(a)(12) and 95354(a)(12)(A-B) have been deleted and incorporated into new section 95354(a)(10)(A)(9.).

New sections 95354(a)(12) and 95354(a)(12)(A-C) are added to require “replacement parts” that contain SF₆ be identified by the GIE owner, and reported to CARB when installed into an active SF₆ GIE device for which the phase-out date has already passed. Because, pursuant to section 95352(c) “replacement parts” are allowed to be acquired after the phase-out deadline, but “GIE” are not, CARB staff requires these data elements be reported to ensure each piece of equipment acquired under section 95352(c) meets the definition of a “replacement part” as opposed to “GIE.”

Section 95354(a)(13)(A) is modified to reflect insertion of the new “failure notification” process in sections 95357(i-j). The “failure notification” process does not involve assignment of a SF₆ phase-out exemption request identification number.

Sections 95354(b) and 95354(b)(1), are modified and new section 95354(b)(2) is added to incorporate the new option in which GIE owners can use a mass flow meter to determine the amount of covered insulating gas added to a GIE device at initial activation. Additionally, the year in which these provisions apply is changed. This change is necessary because these amendments are now expected to become effective by January 1, 2022.

Section 95354(c) is modified to change the year in which the provisions of this section apply. This change is necessary because these amendments are now expected to become effective by January 1, 2022.

Section 95354(c)(1) is modified to specify that a GIE device shall not be considered “removed from regular use” until the gas is extracted. These changes are necessary given that modifications to section 95354(d) now allow the GIE owner up to one year to extract the gas from the device, after any of the conditions of section 95354(c)(1)(A-C) are met.

Section 95354(c)(1)(B) is modified such that a GIE device sent to the manufacturer for repair, with the expectation that the device will be returned to the GIE owner, should not be considered “removed from regular use.”

New section 95354(c)(1)(C) is added in response to stakeholder comments to specify that a GIE device that has been inactive for less than five years is to be considered “removed from regular use” if it is removed from the GIE owner’s inventory.

Sections 95354(d) and 95354(d)(1) are modified and new section 95354(d)(2) is added to allow the GIE owner up to one year to extract covered insulating gas from a device after any of the conditions of section 95354(c)(1)(A-C) are met, and to allow the use of a mass flow meter to account for the recovered gas. These changes are necessary to support the use of mass flow meters in the Regulation, and noting that the conditions of sections 95354(c)(1)(A-C) may apply to a GIE device very late in the year, leaving the GIE owner little time to extract the gas by the end of the year. Additionally, per stakeholder comments stating that retired GIE are sometimes shipped to the manufacturer, who extracts the gas, this section has been modified to allow this process to continue, so long as the GIE owner ensures the manufacturer accounts for the gas in

a manner consistent with the requirements of section 95354(d)(1) or (2). In sections 95354(d) and 95354(d)(1), the term “evacuate” has been changed to “recover,” per stakeholder comments that the term “recover” better reflects terminology used in industry.

Section 95354(e) is modified to correct an error in the 60-day proposal. The requirements of this section should apply to any scales used to weigh gas carts pursuant to section 95354(j)(2)(B).

New sections 95354(f) and 95354(f)(1-4) are added to establish minimum accuracy requirements for flow meters, precision pressure gauges, precision temperature gauges, and gas carts given that their use is now allowed under the Regulation, and to add technical specifications regarding required capabilities of gas carts. Subsequent changes to section numbering were incorporated due to the insertion of this section.

New section 95354(g)(3) is added to provide the methodology GIE owners must use to determine the amount of covered insulating gas within a container, after the container is weighed. This process requires subtracting the tare weight of the container from the measured weight of the container, along with its contents, and is necessary to clearly define the process.

Section 95354(g) is renumbered to be new section 95354(h) and modified to specify and clarify the manner in which the amount of gas in gas carts is to be reported. This change is necessary to accommodate the addition of a new mass flow meter method that can be used to measure carts.

Sections 95354(g)(1), 95354(g)(4), and 95354(g)(5) are renumbered to be new sections 95354(h)(1), 95354(h)(4), and 95354(h)(5) respectively and modified to clarify how the requirements apply to gas containers and gas carts. This change was necessary because the requirements apply to both gas containers and gas carts, but only specified gas containers in the 60-day proposal.

Section 95354(i) is renumbered to be new section 95354(j) and modified to specify that provisions related to gas carts are specific to gas carts owned by or stored on the property of the GIE owner.

Section 95354(i)(1) is renumbered to be new section 95354(j)(1) and modified to incorporate references to the new mass flow meter measurement method that has been added in new section 95354(j)(2)(C). Content from section 95354(j)(1) has also been moved to new section 95354(j)(2)(D). Stakeholder comments demonstrated that this provision was not clear, and so CARB staff made these revisions to maintain the intent of the provision while improving clarity. Additionally, the year in which these provisions apply are changed. This change is necessary because these amendments are now expected to become effective by January 1, 2022.

Section 95354(i)(2) is renumbered to be new section 95354(j)(2) and modified to provide a timeframe within which the measurement must be performed. Unlike the

60-day proposal where this requirement was included in section 95354(i)(2)(B)(1.) because it applied only to gas carts using the “scale method,” the timeframe now applies to all gas carts, so the content of section 95354(i)(2)(B)(1.) was moved to this higher-level section.

Section 95354(i)(2)(A) is renumbered to be new section 95354(j)(2)(A) and modified to amend the methodology. The prior methodology assumed gas transferred from the gas cart to the container would be accounted for via tracking of containers, such that it was not specifically associated with the gas cart. The revised methodology, which is needed for clarity and simplicity given the new mass flow meter requirement, requires the GIE owner to specifically associate the amount of gas transferred with the gas cart. This manner of reporting is consistent with sections 95354(i)(2)(B) and (C).

Section 95354(i)(2)(B) is renumbered to be new section 95354(j)(2)(B) and modified to provide the methodology GIE owners must use to determine the amount of covered insulating gas within a gas cart, after the gas cart is weighed. Additionally, text describing the manner in which the measured value must be reported has been removed because this information is now included in section 95354(h).

Section 95354(i)(2)(B)(1.) has been removed because it was incorporated into section 95354(i)(2) as described above.

New section 95354(j)(2)(C) is added to allow GIE owners the option to use a mass flow meter to determine the amount of covered insulating gas in a gas cart owned by or stored on the property of the GIE owner, as requested in stakeholder comments.

New section 95354(j)(2)(D) is added to incorporate information previously included in section 95354(i)(1). Additionally, the content has been clarified to specify that the pressure selected by the GIE owner must be that at which the cart is empty per manufacturer specifications, recognizing that this pressure may not be the same for all gas carts. Finally, the provisions of this section now apply to both the “container method” and the new “mass flow meter method” inserted at section 95354(j)(2)(C).

New section 95354(j)(2)(E) is added to clarify that, in order to avoid double counting, any gas reported as being present in a gas cart at the end of the calendar year, or when added or removed from inventory, must not also be reported as being present in a gas container inventory. This new section is necessary for GIE owners using the new “mass flow meter method” and due to changes in the “container method” described above.

New section 95354(j)(3) is added to require the amount of gas present in a gas cart added to, or removed from, the GIE owner’s inventory be reported. This requirement should have been included in the 60-day proposal. It is analogous to the requirement in section 95354(g)(1)(B) pertaining to gas containers. Subsequent changes to section numbering were incorporated due to the insertion of this section.

New section 95354(j)(4)(C) is added to allow GIE owners the option to use a mass flow meter to determine the amount of covered insulating gas in a gas cart neither owned by

nor stored on the property of the GIE owner when that gas cart is brought onto or removed from the property of the GIE owner. This revision was requested in stakeholder comments.

Section 95354(j) is renumbered to be new section 95354(k), and includes revised references to reflect other section number changes. This section is also modified, and sections 95354(j)(1-4) are removed, to eliminate certain items previously required to be included in the GIE owner's written procedures for tracking their gas containers. Stakeholder comments indicated that some of these items were not necessary, and staff agrees.

Section 95354(k) is renumbered to be new section 95354(l). New sections 95354(l)(3) and (4) are added, and section 95354(l)(3) is renumbered to be new section 95354(l)(5). These new and modified sections are necessary to establish calibration procedures for measurement devices used under this subarticle.

5. Modifications to Section 95354.1. Calculating Annual Emissions.

Section 95354.1(a) is modified to clarify certain components of the equation by which annual emissions are determined. These modifications specify that only active GIE (which by definition excludes hermetically sealed GIE) should be considered in certain cases, and that GIE Owners must account for any covered insulating gas sent to other entities. These changes are responsive to stakeholder comments, clarify the requirements, and ensure that the equation covers all situations in which covered insulating gas may be disbursed.

Sections 95354.1(b) and (c) are modified to change the conversion factor for the number of pounds in a metric ton from 2,205 to 2,204.62. This change will improve both the accuracy of reported emissions, and, consistency with other GHG reporting programs.

Sections 95354.1(d) and (e) are modified to change the year in which the provisions of these sections apply. These changes are necessary because these amendments are now expected to become effective by January 1, 2022. The provision in section 95354.1(d) may apply to data year 2021 (despite the proposed Regulation not being effective by January 1, 2021) because, under the current Regulation, GIE owners are already required to collect all data needed to fulfill this requirement.

6. Modifications to Section 95355. Reporting Requirements.

Section 95355(a) is modified to clarify that the report submitted by June 1 of each year must reflect information compiled during the previous calendar year.

Section 95355(a)(5) is modified to remove the requirement that GIE owners report information related to certain transfers of covered insulating gas required to be recorded pursuant to section 95354(h). CARB staff does not need this information to be reported to verify compliance with this subarticle.

Section 95355(a)(6)(D) is added to require that GIE owners report information related to GIE that were included in the early action credit but were removed from regular use or transferred while in use during the data year. This information is necessary for CARB staff to ensure that these GIE are also removed from the early action credit given that they are no longer used by the GIE owner.

Section 95355(a)(7)(C) is modified to add a requirement that GIE owners report the value of $EAC_{\leq 10}$, which is required to be calculated pursuant to section 95353(f). This value is used by the GIE owner to calculate their emissions limit, so CARB staff need to collect this value in order to verify the emissions limit was calculated properly.

Section 95355(a)(7)(D) is modified to change *BL CO₂e capacity_{12/31/2024}* to *BL CO₂e capacity_{12/31/2024,i}*, to revise the corresponding reference, and to specify that the values listed in this section are only required to be reported for data year 2025 and beyond. These changes are necessary to reflect the new name of the term provided in new section 95353(e)(1).

New section 95355(a)(7)(D)1. is added to specify that *BL CO₂e capacity_{12/31/2024}* must be reported for data year 2025 only.

New section 95355(a)(8) is added to require documentation submitted to CARB pursuant to section 95353(i) or (j) be included as part of the annual report. The 60-day proposal required this information be submitted to CARB, but did not specify the manner in which the information be reported. Subsequent changes to section numbering were incorporated due to the insertion of this section.

Sections 95355(c) and 95355(c)(1) are removed. The Regulation already has a specified annual reporting deadline and enforcement provisions that apply penalties to the number of days that reporting errors remain uncorrected, and as a result staff determined that this additional provision is not necessary. Subsequent changes to section numbering were incorporated due to the removal of these sections.

7. Modifications to Section 95356. Recordkeeping.

Section 95356(a)(4) is modified to add manufacturer warranties to the list of materials required to be retained by the GIE owner. These records must be retained because section 95352(a)(4) allows the GIE owner to acquire SF₆ GIE after the phase-out if the SF₆ GIE are acquired under the terms and conditions of the warranty.

Conforming changes to section 95356(a)(7) were made to reflect that certain records must be kept in relation to the new provision that GIE owners may follow a notification process rather than the SF₆ phase-out exemption request process in the case of failure, and to add the specification that bids received pursuant to section 95357(l) are subject to recordkeeping requirements.

Section 95356(a)(10) is modified to remove the reference to section 95355(c), which has been deleted.

Section 95356(a)(11) is modified to incorporate references and make other conforming changes to accommodate the new provisions that allow for the use of the mass flow meter method for determining the amount of gas in gas carts pursuant to new section 95354(i)(2)(C).

New section 95356(a)(12) is added to require the tare weight used to determine the amount of covered insulating gas within a gas container pursuant to new section 95354(g)(3) be recorded by the GIE owner, and to specify that the value may not change over time.

New section 95356(a)(13) is added to require the GIE owner to retain copies of any written safety or reliability requirements cited in SF₆ phase-out exemption requests pursuant to section 95357(d)(8)(D). CARB staff may need to inspect these records to ensure SF₆ GIE acquired pursuant to section 95357(d)(8)(D) were acquired in a manner consistent with the Regulation.

New sections 95356(a)(14) and 95356(a)(14)(A-D) are added to require the GIE owner retain copies of documentation related to nameplate capacity adjustments, including data and measurements and manufacturer temperature/pressure curves required as part of the process. CARB staff may need to inspect these records to ensure the process was performed as specified in the Regulation.

Section 95356(b)(3) is modified to change the year in which the provision applies. This change is necessary because these amendments are now expected to become effective by January 1, 2022.

8. Modifications to Section 95357. SF₆ Phase-Out Exemption and Failure Notification.

The name of Section 95357 is modified to include reference to the new “failure notification” process incorporated to sections 95357(i-k). This new name better reflects the key provisions of the modified section.

Section 95357(a) is modified to incorporate references to the new “failure notification” process in sections 95357(i-k).

Section 95357(b) is modified to specify that a GIE owner must determine whether an SF₆ phase-out exemption is warranted based on bids received for the specific projects, locations, and/or structure types. This change ensures that the information required from GIE owners to substantiate a phase-out exemption request can be reasonably collected and submitted by GIE owners and that the phase-out exemption request is based on information submitted by GIE manufacturers/providers.

Section 95357(b)(4) is modified to clarify that exemptions to the phase-out are allowed in situations where available non-SF₆ GIE do not meet the *GIE owner's* requirements for safety and reliability and that these requirements must be documented. Additionally, this section is modified to clarify that this provision applies whenever available non-SF₆ GIE cannot meet required technical specifications. These changes clarify staff's original intent in the 60-day proposal, and are consistent with stakeholder comments and feedback.

Section 95357(d)(3) is modified, and new sections 95357(d)(3)(A) and (B) are added to establish unique requirements for the phase-out exemption request that the GIE owner must follow when the device they wish to acquire will initially be spare GIE, and to provide the alternative method for identifying sites described above. The 60-day proposal did not differentiate the phase-out exemption process depending on whether the device to be acquired would initially be spare or not, and stakeholders commented that spare GIE acquired as spares would necessitate different requirements in some cases.

Section 95357(d)(5) is modified, and new sections 95357(d)(5)(A-C) are added to require the GIE owner include the names of manufacturers who submitted bids for a project, and a description of the universe of entities that were eligible to bid, as part of their SF₆ phase-out exemption request. For GIE owners that continue to acquire SF₆ GIE after the applicable phase out date, these changes will provide CARB staff with information regarding the GIE owner's bidding process and efforts to identify non-SF₆ GIE that could be used in that type of project. Conforming modifications were also made to section 95357(d)(5)(A) as a result of the insertion of unique requirements for spare GIE requested through the SF₆ phase-out exemption process described above.

Section 95357(d)(8)(B) is modified to replace the term "location" with the term "space." This change is necessary to specify that a photo be provided of the space where exempted SF₆ GIE are to be located, for consistency with the use of the term "space" earlier in this subsection.

Conforming changes were made to section 95357(d)(8)(D) as a result of the modifications to section 95357(b)(4) described above.

Section 95357(j) has been renumbered to be new section 95357(h) because it does not apply to the new failure notification process inserted in sections 95357(i-k). This section was also modified to remove references to the 60-day proposal's expedited exemption process because that process has been replaced with the new failure notification process. Additionally, requirements that specified the location where SF₆ GIE acquired with a phase-out exemption may be installed have been moved to section 95352(a)(1) as discussed in section 2 of this Notice. Subsequent changes to section numbering were incorporated due to the movement of this section.

Section 95357(h) is renumbered to be new section 95357(i) and modified to specify that whenever a failure on a GIE device in active service occurs, the GIE owner may acquire an SF₆ GIE device of the same characteristics as the device that failed without prior

approval from CARB. The 60-day draft included an expedited phase-out exemption process to acquire SF₆ GIE after the phase-out to resolve a “catastrophic failure.” While the expedited phase-out exemption process would have allowed the GIE owner to acquire SF₆ GIE on a faster timescale than possible through the standard exemption process, stakeholders commented that system reliability could be negatively impacted while the GIE owner awaited approval from CARB to acquire a replacement device. The Board directed staff to address this issue, after consulting with CAISO. In response to stakeholder feedback, Board direction, and CAISO’s comments, staff have replaced the expedited process with a new notification process that would allow the GIE owner to acquire a replacement SF₆ device without prior approval from CARB, upon failure (as defined in section 95351) of any GIE device. Under the new process, the GIE owner must notify CARB of the failure and provide information on the SF₆ GIE acquired in response to the failure, but does not need prior CARB approval to acquire the device.

Section 95357(h)(1) has been renumbered to 95357(i)(1) and modified to replace the expedited phase-out exemption process provision with new provisions related to the failure notification process, in particular that the GIE owner must notify CARB of the failure within 15 days.

New sections 95357(i)(1)(A) and (B) have been added, and section 95357(h)(1)(A) has been renumbered to be 95357(i)(1)(C) and modified. These changes are necessary to reflect the required components of the new 15-day notification, including the addition of GIE owner name and identification number, and designated representatives contact information. Section 95357(i)(1)(C)1. was modified for clarity given that the notification process can also be used for “imminent” failures.

Sections 95357(h)(2-5) were specific to the expedited phase-out exemption request process and have been removed.

Section 95357(h)(6) has been renumbered to be section 95357(i)(1)(D).

New sections 95357(h)(2) and 95357(h)(2)(A-G) specify that within 45 days of a failure for which the GIE owner will acquire a replacement SF₆ GIE device, the GIE owner must submit a second notification to CARB containing an explanation of the cause of the failure, and details related to the equipment acquired to resolve the failure. This information must be submitted to support reporting and recordkeeping requirements.

New sections 95357(j) and 95357(j)(1-2) have been added in response to scenarios presented by stakeholders in which the GIE owner has activated a spare GIE device to resolve a failure. In this scenario, the GIE owner’s inventory of spare GIE has been depleted, which could hinder their ability to respond to additional failures. To maintain system reliability, these sections allow GIE owners to acquire SF₆ GIE of the same characteristics as the GIE that were activated to resolve the failure without prior approval from CARB. The process the GIE owner must undertake to acquire SF₆ GIE in this section is very similar to that of section 95357(i), but with the additional requirement to provide the serial number(s) of GIE activated to resolve the failure, and removal of the requirement to provide the date activated, which is not needed for a GIE acquired to

be used as a spare. This will allow staff to verify the SF₆ GIE acquired have the same characteristics as the spare GIE activated. Subsequent changes to section numbering were incorporated due to the addition of these sections.

Section 95357(i) is renumbered to be new section 95357(k) and modified to specify the actions CARB will take upon receipt of any of the notifications required to be submitted pursuant to revised sections 95357(i) or 95357(j). In the 60-day proposal, this section specified the actions CARB would take upon receipt of an expedited exemption request.

Section 95357(i)(1) is renumbered to be new section 95357(k)(1) and modified to specify that CARB will acknowledge receipt of the notification within seven days, provide the owner with a failure identification number instead of a SF₆ phase-out exemption request identification number, and that if the GIE owner does not receive a receipt within seven days of submittal, the GIE owner must contact CARB to inquire whether CARB received the notification. The revised timeframe reflects the fact that the notification does not need to be processed as quickly as would have been necessary had the expedited phase-out exemption request process been retained.

Section 95357(i)(2) is renumbered to be new section 95357(k)(2), modified, and combined with the previous section 95357(i)(2)(A) to specify that CARB will notify the submitter if additional information is necessary to complete the application within 21 days of submittal. The revised timeframe reflects the fact that the notification does not need to be processed as quickly as would have been necessary had the expedited phase-out exemption request process been retained.

New section 95357(k)(2)(A) is added to specify that the GIE owner must provide the information requested within 21 days of being notified by CARB of the issue with the original notification. Such a requirement is necessary because under the expedited SF₆ phase-out exemption process the GIE owner would have been incentivized to respond to CARB's requests quickly in order to expedite acquisition of the SF₆ GIE needed to resolve the failure, however, with the transition to a notification process, no such incentive exists.

Section 95357(i)(2)(B) pertained only to the expedited SF₆ phase-out exemption request process. It has been removed due to the removal of this process.

Section 95357(i)(2)(C) is renumbered to be new section 95357(k)(2)(B) and modified to specify that CARB will notify the submitter if additional information is necessary to complete the application within 21 days of submittal. The revised timeframe reflects the fact that the notification does not need to be processed as quickly as would have been necessary had the expedited phase-out exemption request process been retained.

Section 95357(i)(3) pertained only to the expedited SF₆ phase-out exemption request process. It has been removed due to the removal of this process.

New sections 95357(l) and 95357(l)(1) are added to incorporate specification that SF₆ phase-out exemptions are to be based on bids received by the GIE owner in relation to

the specific projects, locations, and/or structure types for which an exemption is sought, and to solicit more information from the GIE owner regarding their efforts to transition to non-SF₆ GIE. These changes will allow CARB staff to track progress on efforts to transition to non-SF₆ GIE such that CARB staff can be informed of the issues that affect this transition.

Section 95357(k) is renumbered to be new section 95357(m) and modified to specify that the emissions from any SF₆ GIE acquired through the new notification process must be included in the GIE owner's annual emissions calculated pursuant to section 95354.1. A similar requirement existed in the 60-day proposal for SF₆ GIE acquired through the expedited phase-out exemption process.

9. Addition of new Section 95357.2. Nameplate Capacity Adjustments.

New section 95357.2 is added to provide GIE owners an optional methodology that they can use to calculate a revised nameplate capacity value for certain GIE, improving the accuracy of their reported emissions. This section is necessary because some manufacturer specified nameplate capacities may be inaccurate, and GIE owners must have an opportunity to correct nameplate capacities in order to improve the accuracy of the emissions calculations in the Regulation.

New sections 95357.2(a), 95357.2(a)(1), and 95357.2(a)(1)(A-C) are added to specify that GIE owners must notify CARB of their intent to perform nameplate capacity adjustments prior to revising nameplate capacity for any of their GIE, and that only GIE owners who have provided this notification to CARB may complete the nameplate adjustment process. GIE owners that elect to perform nameplate capacity adjustments must provide CARB staff with information to identify the GIE owner, the designated representative, and a list of GIE that will go through the process. This information is needed so that CARB staff are made aware of the intent to complete the process. The list of GIE is needed to ensure it includes all GIE meeting the requirements of section 95357.2(b), and to track the GIE owners' progress over time.

New section 95357.2(a)(2) is added to specify that a revised nameplate capacity should be submitted to CARB only once per GIE device, unless the physical capacity of the device is changed after the initial adjustment was performed. Further, if the physical capacity of a GIE device has been changed, the capacity of the device must be adjusted again, the next time the provisions of section 95357.2(b) apply. This section is necessary to specify expected procedures related to this process.

New sections 95357.2(b) and 95357.2(b)(1-4) are added to specify which GIE may go through the process and when nameplate capacity adjustments may be performed. This process is limited to non-hermetically sealed GIE because these are the only GIE included in the reported emissions and emissions limits in the current Regulation. It is also limited to SF₆ GIE only, because the process applies only to GIE acquired prior to January 1, 2022, and the current Regulation only covers SF₆ GIE. Stakeholders also requested that smaller GIE be excluded from the process and CARB agrees that there is little value in GIE with smaller capacities going through this process, as the amount of

effort needed would not be commensurate with the gains in accuracy. The amendments specify two criteria to accomplish this distinction: GIE with a voltage capacity of 38 kV or less, or GIE that are fully charged and to which insulating gas is not added or removed, are not eligible for the process. The two criteria are necessary to accomplish the intent of the provision given the variability of the smaller-capacity GIE installed in California. Based on reported data, limiting this provision to the larger-capacity GIE means it will cover approximately 23 percent of California's GIE and approximately 80 percent of the SF₆ used in the State. This provides an appropriate balance between improving accuracy, while limiting the amount of resources expended by GIE owners to conduct the adjustments, and by CARB staff to process the changes. Section 95357.2(b)(3) specifies that GIE that has compromised integrity does not need to go through the nameplate capacity adjustment process. This is necessary because performing the adjustment process on such a GIE could result in emissions. Per section 95357.2(b)(4), only GIE acquired by December 31, 2021, are eligible to go through the nameplate capacity adjustment process. This is necessary because "covered insulating gas at activation" must be calculated for all GIE acquired after this date pursuant to section 95354(a)(10)(A)(6.). This new calculation removes reliance on manufacturer nameplate capacities and introduces a more accurate method to determine capacity, thus eliminating the need for the capacity of these GIE to be adjusted. Finally, these new sections specify that nameplate capacity adjustments may only occur when a GIE device is removed from regular use pursuant to section 95354(c)(1), or during maintenance activities that require opening the gas compartment. This provision is necessary because there is a risk of emissions any time covered insulating gas is handled. Therefore, CARB staff specified that this process can only occur in situations where the GIE owner will already be recovering the gas from the GIE device.

New sections 95357.2(c), 95357.2(c)(1-7) are added to establish the process GIE owners must follow to adjust the capacity of each applicable GIE device. These contain provisions that are consistent with other provisions in the Regulation that require measurement of covered insulating gas, and are generally consistent with stakeholder feedback from GIE owners, GIE manufacturers, and SF₆ gas handling experts.

New section 95357.2(d) is added, consistent with stakeholder feedback, to require that the GIE owner affix a revised nameplate capacity label to the GIE device if it is to remain in active service, and to do so by the end of the calendar year in which the process is completed. This step is necessary to allow for proper reporting and record keeping, so that the GIE owner's staff will be aware of the correct capacity of the device for future maintenance activities, and should CARB staff ever need to perform an inspection.

New section 95357.2(e) is added to specify that the GIE owner must begin to use the revised nameplate capacity for the GIE device in the annual report for the data year in which the process was completed. The revised value would be used in all provisions required by this subarticle (calculations of emissions, emissions limit, reporting requirements, etc.) except for the term "c_{kr,j}" in section 95353(e)(1). The consistent use of the revised value is necessary to ensure accurate accounting for the revised nameplate capacity. The exclusion for the term "c_{kr,j}" is necessary because that term

requires the use of the covered insulating gas at activation value that the GIE device had as of December 31, 2024, which is used to calculate *BL CO_{2e} capacity*_{12/31/2024}.

10. Modifications to Section 95359. Enforcement.

Section 95359(b) is modified to revert the provisions to more closely match that of the current Regulation, removing the provision added in the 60-day proposal that each incomplete, untrue or inaccurate data field would constitute a separate violation. Stakeholder comments requested these revisions, and staff concurs that the prior provisions are sufficient.

Section 95359(c) is modified to change the year in which the provision applies. This change is necessary because these amendments are now expected to become effective by January 1, 2022.

11. Additional Modifications.

In addition to the modifications described above, additional modifications correcting grammar, punctuation and spelling have been made throughout the proposed changes. These changes are nonsubstantive.

These modifications do not change implementation of the regulation in any way that affects the conclusions included in the Staff Report's Environmental Analysis (EA). The modifications do not lead to foreseeable changes in compliance responses identified in the EA because the modifications do not affect the emissions limit for small GIE owners or other GIE owners evaluated in the EA. Given this, the modifications do not affect the EA analysis that evaluated greenhouse gas impacts from the emissions limit requirement. As such, the modifications do not result in any significant adverse effect on the physical environment. Therefore, the modifications do not require additional environmental analysis or recirculation of the analysis.

Agency Contacts

Inquiries concerning the substance of the proposed regulation may be directed to Carey Bylin, Manager, Energy Section, at Carey.Bylin@arb.ca.gov or Matthew Botill, Assistant Division Chief, Industrial Strategies Division, at Matthew.Botill@arb.ca.gov.

Public Comments

Written comments will only be accepted on the modifications identified in this Notice. Comments may be submitted by postal mail or by electronic submittal no later than the due date to the following:

Postal mail: Clerks' Office, California Air Resources Board
1001 I Street, Sacramento, California 95814

Electronic submittal: <https://www.arb.ca.gov/lispub/comm/bclist.php>

Please note that under the California Public Records Act (Gov. Code § 6250 et seq.), your written and verbal comments, attachments, and associated contact information (e.g., your address, phone, email, etc.) become part of the public record and can be released to the public upon request.

In order to be considered by the Executive Officer, comments must be directed to CARB in one of the two forms described above and received by CARB no later than the deadline date for public comment listed at the beginning of this notice. Only comments relating to the above-described modifications to the text of the regulations shall be considered by the Executive Officer.

If you need this document in an alternate format or another language, please contact the Clerks' Office at (916) 322-5594 or by facsimile at (916) 322-3928 no later than five (5) business days from the release date of this notice. TTY/TDD/Speech to Speech users may dial 711 for the California Relay Service.

Si necesita este documento en un formato alternativo u otro idioma, por favor llame a la oficina del Secretario del Consejo de Recursos Atmosféricos al (916) 322-5594 o envíe un fax al (916) 322-3928 no menos de cinco (5) días laborales a partir de la fecha del lanzamiento de este aviso. Para el Servicio Telefónico de California para Personas con Problemas Auditivos, ó de teléfonos TDD pueden marcar al 711.

CALIFORNIA AIR RESOURCES BOARD



Richard W. Corey
Executive Officer

Date: May 5, 2021

Attachment

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see [CARB's website](http://www.ARB.ca.gov) (www.ARB.ca.gov).