

# Webinar: Reporting Updates and New Requirements for the Regulation for Reducing Greenhouse Gas Emissions from Gas-Insulated Equipment

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FEBRUARY 28, 2022



# Today's Webinar

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# Purpose

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- The Regulation for Reducing Greenhouse Gas Emissions from Gas-Insulated Equipment (amended Regulation) became effective January 1, 2022
  - Unless noted otherwise, regulatory citations in this presentation refer to the amended Regulation
- Reporting for Data Year 2021 still largely guided by the Regulation for Reducing SF<sub>6</sub> Emissions from Gas Insulated Switchgear (original Regulation), with added provisions related to Early Action Credit and Emissions Limit
- Today we will:
  - Provide an overview of the revised Data Year 2021 reporting form, which is required to be completed and submitted for all GIE Owners by June 1, 2022
  - Summarize new requirements taking effect in 2022

# Data Year 2021 Reporting

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# Accessing the Reporting Form

Reporting form will soon be available for download via our webpage or Cal e-GGRT Stakeholders will be notified when Cal e-GGRT is ready to accept reports

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The Regulation for Reducing Greenhouse Gas Emissions from Gas Insulated Equipment (amended Regulation) became effective January 1, 2022, replacing the Regulation for Reducing Sulfur Hexafluoride (SF<sub>6</sub>) Emissions from Gas Insulated Switchgear (original Regulation). The amended Regulation requires all regulated entities to submit an annual report to the California Air Resources Board (CARB), by June 1 of each year (or first business day thereafter), for activities and emissions that occurred during the previous calendar year (data year). For data year 2021, CARB has developed a standardized SF<sub>6</sub> GIS Reporting Form. The data year 2021 reporting form largely reflects the requirements of the original Regulation. The emissions limit, its associated inputs, and Early Action Credit are new provisions found in the amended Regulation and are applicable to data year 2021 reporting.

If you are submitting a report for data year 2020 or a prior year, please contact Energy Section staff for a previous version of the reporting form.

There are two ways to report:

(1) Entities subject to CARB's Mandatory Greenhouse Gas Reporting Regulation (MRR) are required to submit their annual reports using the California Electronic Greenhouse Gas Reporting Tool (Cal e-GGRT). Please download the data year 2021 reporting form either from the link below or from your Cal e-GGRT account. As a reminder, Cal e-GGRT has built-in data validation checks to flag potential issues. Some flags may prevent report submission if the issue is not corrected. Please allocate sufficient time to work with this feature prior to the June 1 deadline. Cal e-GGRT users must upload and certify the report for the submission to be considered complete.

Please note that this Regulation is a separate regulation from MRR, with separate requirements and staff.



Log in to Cal e-GGRT  
Cal e-GGRT Instructions  
Email Cal e-GGRT technical support

Data Year 2021 Reporting Form  
SF<sub>6</sub> Reporting Form Supplemental Instructions for Data Year 2021  
Webinar: Reporting Updates and New Requirements for the Regulation for Reducing Greenhouse Gas Emissions from Gas-Insulated Equipment


## Sections 95350-95359: SF6 Gas Insulated Switchgear (2021)

### SF6 GIS Overview

#### OVERVIEW OF SF6 GIS REPORTING REQUIREMENTS

SF6 GIS (Gas Insulated Switchgear) requires affected facilities to report emissions for the facility. If you are subject to other subparts (e.g. Subpart C) you will need to report those emissions as a separate facility record. Please contact CARB if you have questions.

To satisfy the SF6 GIS reporting requirements you will first download the SF6 GIS reporting form(s). Use the link provided to access the form(s) and find instructions for completing those forms. After completing the form, follow the instructions in the form to export XML data and then upload the exported XML file under section 2 below. For additional information about SF6 GIS reporting, please use the Cal e-GGRT Help link(s) provided.

 **SF6 GIS: View Validation**

#### SF6 GIS SUMMARY INFORMATION FOR THIS FACILITY

##### 1.) DOWNLOAD FORM

[SF6 GIS GHG Reporting](#)

##### 2.) UPLOAD XML EXPORTED FROM COMPLETED FORM

Upload the XML exported from your completed SF6 GIS Reporting Form here.

NOTE: The spreadsheet includes directions for how to export XML from the spreadsheet.

Choose File No file chosen

UPLOAD

File Name	Uploaded By	Uploaded Date	Delete
No files found.			

# Overview of the Data Year 2021 Reporting Form

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- Required data fields largely guided by the original Regulation. No substantive changes to the following worksheets:
  - SF<sub>6</sub> GIS Equipment
  - SF<sub>6</sub> Transferred
  - SF<sub>6</sub> Gas Containers
- Regulatory amendments require revisions to the following worksheets:
  - Facility Overview Information (added emissions limit and associated inputs)
  - Early Action Credit (new)

# Facility Overview Information Worksheet (1 of 2)

Entity Name:	
ARB ID:	
<b>Record Location (if different than physical address of entity's headquarters)</b>	
Street:	
City:	
State:	
ZIP/Postal Code:	
Preparer's Name:	
Preparer's e-Mail:	
Preparer's Phone:	
Reporting Year:	2021
Average System Capacity (pounds):	
Average CO <sub>2</sub> e Capacity (MTCO <sub>2</sub> e):	0.0
Early Action Credit (MTCO <sub>2</sub> e):	0.0
EAC <sub>≤10</sub> (MTCO <sub>2</sub> e):	0.0
Emissions Limit (MTCO <sub>2</sub> e):	50.0
Annual SF <sub>6</sub> Emissions (in pounds):	
CO <sub>2</sub> e Emissions (MTCO <sub>2</sub> e):	0.0

- Added data fields:
  - Average System Capacity
  - Average CO<sub>2</sub>e Capacity
  - Early Action Credit
  - EAC<sub>≤10</sub>
  - Emissions Limit
  - CO<sub>2</sub>e Emissions
- Removed data field:
  - Annual SF<sub>6</sub> Emission Rate

# Facility Overview Information Worksheet (2 of 2)

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- Calculate **Average System Capacity** (section 95353(b)) = the original Regulation's Average System Nameplate Capacity (section 95356(e))
- Built-in formulas will calculate:
  - **Average CO<sub>2</sub>e Capacity**: converts Average System Capacity (pounds) to MTCO<sub>2</sub>e
  - **Early Action Credit**: based on data in the Early Action Credit worksheet
  - **EAC<sub>≤10</sub>**: Early Action Credit cap, equivalent to 10% of GIE Owner's 2021 capacity
  - **Emissions Limit**: pursuant to sections 95353(g)(1) and 95353(h) (see next slide)
- Calculate **Annual SF<sub>6</sub> emissions** (pounds) as in previous years' reporting form (section 95356(d) of the original Regulation)
- Built-in formula converts Annual SF<sub>6</sub> emissions to **CO<sub>2</sub>e Emissions**



# Emissions Limit

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- Changed emission rate limit (%) to emissions limit (MTCO<sub>2</sub>e)

$$\text{Emissions Limit} = \frac{AEF}{100} * (\text{Average CO}_2\text{e capacity} + EAC_{\leq 10})$$

- AEF (annual emission factor) is based on GIE Owner's Average CO<sub>2</sub>e Capacity
- Smaller-capacity GIE Owners (<10,000 MTCO<sub>2</sub>e) allowed a larger AEF
- Minimum emissions limit is 50 MTCO<sub>2</sub>e

Year	AEF for GIE Owners with Average CO <sub>2</sub> e Capacity ≥10,000 MTCO <sub>2</sub> e	AEF for Other GIE Owners
2021-2034	1.0	2.0
2035 and beyond	0.95	1.9

# Early Action Credit Worksheet (1 of 2)

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- GIE Owners activating non-SF<sub>6</sub> Circuit Breakers  $\geq 72.5$  kV between Jan. 1, 2021 and equivalent SF<sub>6</sub> GIE phase-out date can receive a credit toward their baseline emissions limit
- Voluntary provision; credit based on number and voltage of eligible Circuit Breakers activated, and is capped at 10% of GIE Owner's 2021 capacity

Voltage Capacity (kV)	Credit Per Device (MTCO <sub>2</sub> e)
72.5	300
72.5 < kV $\leq$ 145	700
145 < kV $\leq$ 245	1,900
> 245	2,400

# Early Action Credit Worksheet (2 of 2)

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- To receive credit, GIE Owners must report all data elements in section 95355(a)(6):
  - **Serial Number, Equipment Type** (Circuit Breakers only), and **Manufacturer**
  - **Date Activated For The First Time**: must be 01/01/2021 or later
  - **Voltage Capacity (kilovolts)**: must be  $\geq 72.5$  kV
  - **Medium that Provides Insulating and/or Interrupting Functions**: cannot be insulated with SF<sub>6</sub> or oil
  - **Covered Insulating Gas and GWP**: if using a Covered Insulating Gas
  - **Was Device Removed from Regular Use/Transferred While in Use During Data Year?**: refer to section 95354(c)(1)-(2) for definitions
  - **Joint Ownership**: indicate whether the Circuit Breaker is jointly owned and, if so, enter your entity's equity share and the required info for co-owners

# Submitting the Form

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- Entities subject to CARB's Mandatory Greenhouse Gas Reporting Regulation must submit annual reports using Cal e-GGRT:
  - No longer need to convert reporting form to .xml format prior to upload
  - Upload the MS Excel spreadsheet, generate the report, and certify
- Cal e-GGRT has built-in data validation checks to flag potential issues
  - Some flags may prevent report submission if the issue is not corrected
  - Allocate sufficient time to work with this feature prior to the June 1 deadline
- Other entities are encouraged to report via Cal e-GGRT but may email the spreadsheet and attestation statement to [energy@arb.ca.gov](mailto:energy@arb.ca.gov)

# New Requirements Taking Effect in 2022

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# Revised Concepts

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- “Covered Insulating Gas” means an insulating gas with a Global Warming Potential (GWP) greater than one
- GWP measures the potency of a GHG relative to carbon dioxide ( $\text{SF}_6$ : 22,800)
- Report in units of metric tons of Carbon Dioxide Equivalent ( $\text{MTCO}_2\text{e}$ )
- Only report Covered Insulating Gas(es) within a gas blend (section 95354(m))
  - Example: 100 pounds of a gas blend (GWP 300) containing 5% Novec-4710 is emitted. Only report the 5 pounds of Novec-4710 (GWP 2,000).
- “Gas-Insulated Equipment” (GIE) instead of “Gas-Insulated Switchgear” (GIS)
  - Change does not affect the type of electrical power equipment covered
  - GIE: *All* electrical power equipment that provide insulating/interrupting functions regardless of insulating medium. Only report GIE that use Covered Insulating Gas.

# Covered Insulating Gas at Activation

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- For GIE Acquired and activated after 12/31/21, Covered Insulating Gas at Activation (CIGAA) replaces Nameplate Capacity to avoid future issues with Nameplate Capacity inaccuracies
- CIGAA is calculated by summing Covered Insulating Gas:
  - Added to GIE during activation process (section 95354(a)(10)(A)3.b.)
  - In GIE when Acquired (section 95354(a)(10)(A)2.)
- GIE Owner must ensure gas is accounted for consistent with the applicable methods in sections 95354(b)(1), (b)(2), (d)(1), or (d)(2)
- For GIE Acquired prior to January 1, 2022, or Acquired after but not yet activated, CIGAA equals Nameplate Capacity

# Nameplate Capacity Adjustment

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- Optional process allows GIE owners to conduct nameplate capacity revisions
- Step 1: [Notify CARB](#) with list of GIE that will undergo adjustment process
- Step 2: Follow process in section 95357.2(c) for applicable GIE
- Step 3: Update GIE device labeling per process in section 95357.2(d)
- Step 4: Report adjusted nameplate value starting in the Data Year in which the measurement was performed (see section 95357.2(e) for detail)
- Follow process only once per device, unless there is a change in physical capacity (section 95357.2(a)(2))
- There is no time limit for making Nameplate Capacity adjustments



# Aligning Gas Handling with GIE Activation and Removal

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- When first activating a GIE device, if Covered Insulating Gas must be added, GIE Owners can only add gas in the Data Year in which it first becomes active
- Previously Active GIE are considered Removed from Regular Use when gas is extracted, which must be within one year of the GIE device being:
  - Inactive for five consecutive years, *or*
  - Inactive for less than five consecutive years and removed from inventory, *or*
  - Taken out of active service and removed from inventory
- GIE Owner must ensure gas added/extracted is accounted for consistent with the applicable methods in sections 95354(b)(1), (b)(2), (d)(1), or (d)(2)
- GIE removed from inventory without being taken out of active service are considered Transferred While in Use, and gas extraction is not required

# Revised Emissions Equation

Annual Emissions =	Summary of Components	Changes from Original Regulation
Decrease in covered insulating gas inventory	Change in gas stored in containers and carts from beginning to end of year	Gas carts now separated from containers
(+ ) Acquisitions of covered insulating gas	Gas acquired in GIE, containers, carts	Clarified that gas acquired in GIE is accounted for in the data year the device is activated for the first time
(- ) Disbursements of covered insulating gas	Gas disbursed in GIE, containers, carts	Clarified disbursement categories
(- ) Net increase in total capacity of active GIE owned and filled with covered insulating gas	CIGAA of new GIE activated for the first time (including those acquired while in use) minus CIGAA of GIE removed from regular use or transferred while in use	CIGAA replaces nameplate capacity. Replaced “retired” with more specific terminology.

# Weighing Containers and Gas Carts

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- Amount of gas in containers and carts must be determined:
  - End of the calendar year (defined as Dec. 1–Jan. 15)
  - When added to or removed from inventory
- Weigh containers not owned by and not stored on the property of the GIE Owner immediately before and after use (section 95354(g)(2))
- Gas in Gas Carts can be measured with any of the following methods:
  - Container method: transfer gas to a container, weigh the container
  - Mass flow meter method: transfer gas out of cart and measure using flow meter
  - Scale method: weigh the cart
- Select and record a measurement method for each cart by Jan. 1, 2022 (or the date Acquired); use it for all measurements (section 95354(j)(1))

# Other GIE Reporting Requirements

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- The following data elements must be reported for each GIE device that uses Covered Insulating Gas starting in Data Year 2022 (section 95354(a) via 95355(a)(5)):
  - Name and GWP of Covered Insulating Gas used
  - Whether the device is jointly owned, equity share, other details
  - Date Purchased and Acquired (for GIE Acquired after 12/31/21)
  - Changes in operational status (non-hermetically sealed only)
  - Number of days GIE were Active GIE during the Data Year, status on specific dates (e.g., Jan. 1) and last date “active” during the year (non-hermetically sealed only)
  - Short-circuit current rating (for GIE Acquired after 12/31/21)
  - Whether used above or below ground (for GIE Acquired after 12/31/21)

# Other Requirements

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- Establish and adhere to written procedures to track Gas Containers. Review procedures annually and revise as needed (section 95354(k)).
- Measure weight on scales certified by manufacturer to be accurate to within one percent (section 95354(e))
- Use instruments (e.g., Flow Meters, temp./press. gauges, Gas Carts) that meet accuracy requirements (section 95354(f))
- Calibrate and re-calibrate instruments (e.g., scales, Flow Meters, temp./press. gauges) per section 95354(l)
- Retain all records specified in section 95356 for at least five years

# Q&A and More Information

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# Thank you

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