



## California Council for Environmental and Economic Balance

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Mr. Dave Mehl  
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### **RE: Regulatory Modifications to Facilitate the Reduction of Greenhouse Gas Emissions from Gas Insulated Equipment**

On behalf of the members of the California Council for Environmental and Economic Balance (“CCEEB”), we thank the California Air Resources Board (“ARB”) for this opportunity to comment on regulatory modifications to facilitate the reduction of greenhouse gas (“GHG”) emissions from gas insulated equipment (“GIE”). CCEEB is a non-profit, non-partisan association of business, labor, and public leaders, which advances balanced policies for a strong economy and a healthy environment.

CCEEB supports reducing GHGs. However, prior to prohibiting or reducing the use of sulfur hexafluoride (“SF<sub>6</sub>”) from critical infrastructure equipment, ARB needs to first ensure there is a thorough evaluation of, safe and reliable alternative insulating gases and/or GIE alternatives and provide industry sufficient time to plan, test, and train prior to implementing such a prohibition on new infrastructure or existing SF<sub>6</sub> GIE. The ARB should consult with GIE equipment manufacturers and users to learn how long this takes before proposing significant changes, such as these regarding the use of SF<sub>6</sub>. While SF<sub>6</sub> is known to have a high global warming potential (“GWP”), its use is still critical in the short term for the safe and reliable operation of the state’s electrical grid and at facilities which must step down power to operate. A phase out of SF<sub>6</sub> at any near-term date will threaten the reliability of the grid and the ability of power and manufacturing facilities to operate in the state. This is because even after a technology is commercially available, extensive reliability testing in the field is needed prior to deployment. We should not risk grid instability and manufacturing facility operations.

We appreciate the opportunity to work with ARB staff to develop a proposed amendment set that can effectively mitigate SF<sub>6</sub> emissions with efficient and cost-effective compliance pathways. As such, CCEEB offers the following comments:

1. § 95351 – Definitions – ARB should add the following definitions:

- a. “GIE Voltage”—this definition will clarify that the GIE nameplate capacity will apply to the rated maximum voltage and reference the appropriate IEEE standard. This will further consistency with reports submitted by covered entities.
  - b. “Repair” and “maintenance”—these definitions will aid industry understanding of what differentiates “repair” or “maintenance” activities from “replacement” when determining when the prohibition for new SF<sub>6</sub>-containing GIE applies. Equipment that is well maintained and repaired according to industry specifications should not need to be replaced for many years.
  - c. “Replacement in kind” consideration will be essential for GIE in existing facilities where installing replacement equipment must conform to existing dimensions. In these cases, installation of new equipment utilizing SF<sub>6</sub> with an equal or smaller inventory would be permitted, until such time that a fully vetted substitute for SF<sub>6</sub> is readily available on the market.
  - d. “*De minimis*”—this definition will set a *de minimis* level for SF<sub>6</sub> emissions potential whereby enforcement penalties do not apply.
  - e. “Drop-in available”—means certified acceptable by vendors of commercially available GIE equipment with the same reliability, safety, and efficacy as currently installed GIE equipment containing SF<sub>6</sub>.
2. § 95352.1 - Sulfur Hexafluoride Phase Out—CCEEB supports ARB’s goal to eliminate SF<sub>6</sub> gas in newly manufactured GIE. However, ARB should first conduct an alternatives analysis prior to suggesting an overly aggressive deadline. The timeline for implementing a reduction on new SF<sub>6</sub> equipment must be based on the availability of safe and reliable alternatives, with sufficient time given to test the operation of such equipment in order to ensure compatibility with existing equipment and electricity systems, as well as time given for workforce training and education to ensure that this new equipment will be safely operated and maintained. In support of this rationale, CCEEB proposes:
- a. Alternatives Analysis—ARB should complete a full alternatives analysis for non-SF<sub>6</sub> GIE prior to implementing a prohibition of SF<sub>6</sub> in existing GIE facilities. ARB should consider the cost of alternatives, potential adverse environmental and safety impacts of the alternatives, physical footprint and space constraints, insulating capacity, reliability, and the ability to competitively bid multiple GIE vendors. Viable alternatives must be available and fully vetted prior to ARB mandating their use to ensure the reliability of the equipment.
    - i. It will be infeasible for a facility operator to replace existing GIE with new GIE that would require a larger footprint within an existing, tightly configured facility. These facilities are almost always designed to have an efficient footprint, and trying to put new sized equipment in them is not feasible or cost-effective.
    - ii. Similar to other technology forcing regulations, no deadline should be imposed or enumerated without first proving there is “drop-in” technology that works, meets all safety standards, is cost-effective, and at least two suppliers are available to supply sufficient product to meet the California compliance obligation.

- b. Phase-Out Deadline—The deadline should be set for new installations based on availability of cost-effective and certified equipment by two or more suppliers with sufficient manufacturing capacity to meet California’s demand.

Similar to industry comments to ARB on the 2010 SF<sub>6</sub> rulemaking, CCEEB recommends that smaller regulated entities have an alternative phase-out schedule for new equipment after ARB completes the Alternatives Analysis. Regulating smaller sources would not result in significant GHG reductions even though SF<sub>6</sub> has a high GWP, as compared to carbon dioxide.

Such a two-tier phase out would allow additional time to take advantage of pilot testing of non- SF<sub>6</sub> GIE—which experts say will take at least five years to conduct. Once the industry researches and tests viable alternatives, CCEEB’s members will need sufficient time to plan for capital investments to replace the existing SF<sub>6</sub> switchgear as it reaches the end of its useful life.

- c. Exemption—ARB should consider an exemption of these regulations for “*de minimis*” inventories, given their reduced potential for emissions. Smaller facilities already struggle to keep at 1%, particularly in any year they perform maintenance. At a macro level these small emissions will not substantively impact the statewide inventory.
  1. We recommend the ARB convene a dialog with facility operators to discuss appropriate reporting and compliance thresholds.
  2. Hermetically sealed equipment is guaranteed by the manufacturer to not leak. ARB previously exempted existing hermetically sealed GIE from the SF<sub>6</sub> monitoring requirements. A hermetically sealed piece of GIE will have zero emissions making it the best option until the availability of safe and reliable alternatives. ARB should continue this monitoring exemption.
3. Change of Ownership—ARB should clarify that if the purchase of in-place, operational, and existing SF<sub>6</sub>-containing GIE from another owner does not constitute “new equipment”.
4. § 95354.1 - Nameplate Capacity Adjustments – CCEEB supports ARB’s effort to allow GIE owners to improve the accuracy of their GIE inventory. However, CCEEB recommends that instead of including a prescriptive method for nameplate capacity adjustments, ARB should develop a guidance method of compliance. Among the guidance methods from which a new nameplate capacity could be established is to allow an operator to evacuate and measure the gas that has been evacuated, adjusted to a mass based on the rated pressure and adjusted based on prescribed ambient conditions. The operator would be allowed to reinstall the SF<sub>6</sub> and “top off” if applicable to the rated pressure without a threat of non-compliance. In turn, GIE owners or manufacturers

should certify the corrected nameplate capacity. ARB should allow reporting entities the option, but not require, corrections to SF<sub>6</sub> reports annually on a going-forward basis. Prior SF<sub>6</sub> reports should not be required to be updated unless the reporting entity chooses to do so. It is unreasonable to expose entities retroactively to potential enforcement risks by applying the regulatory change to prior reports.

5. CCEEB also seeks to clarify that if an owner elects to revise the nameplate capacity, ARB will not seek enforcement penalties retroactively if the revised capacity data exceed those that were reported in previous years.
6. § 95356 – Annual Reporting Requirements – the proposal offers insufficient credit for recognize alternatives that would reduce the GWP of GIEs by orders of magnitude relative to existing technologies. We recommend that ARB amend the “Capacity Adjustment Factor” table in Section 95356(e) to recognize alternatives that the significantly reduce GWP and to provide adequate credit in the formula for use of lower GWP gases.
7. Per section 95356(e), “if a zero GWP technology is used,  $d_i$ ,  $C_i$ ,  $GWP_i$ ,  $A_i$ , shall be assigned a value of one pound for every 1,000 volts that the device is designed to safely accommodate.” As described in the strawman proposal, this provision would punish a facility for reporting emissions even if they are using zero GWP gas. The equation to calculate an emission rate should be zero if the GWP is zero.

### **Conclusion**

Thank you for considering CCEEB’s comments on the workshop and strawman proposal. At this time, there are many open issues within the strawman proposal that deserve careful deliberation and stakeholder conversation prior to introducing draft regulations. CCEEB represents a broad cross-section of the compliance entities to the SF<sub>6</sub> regulation. As such, CCEEB is able to represent diverse industry sectors and offer our assistance to the ARB in developing these ideas further. CCEEB looks forward to playing an integral role in the future development and operability of California’s SF<sub>6</sub> regulation. Should you wish to discuss our comments in more detail, please contact me or Jackson R. Gualco, Kendra Daijogo or Mikhael Skvarla, CCEEB’s governmental relations representatives at The Gualco Group, Inc. at (916) 441-1392.

Sincerely,



**GERALD D. SECUNDY**  
President

cc: Honorable Chair & Members of the Air Resources Board  
Mr. Richard Corey, Air Resources Board  
Mr. William J. Quinn, CCEEB  
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