



November 12, 2025

Submitted Electronically

Rajinder Sahota, Deputy Executive Officer
California Air Resources Board
1001 I Street
Sacramento, California 95814

Re: Calpine Corporation's Comments on the Cap-and-Invest Program Workshop

Dear Deputy Executive Officer Sahota,

Calpine Corporation submits these comments in response to the California Air Resources Board's ("CARB") October 29, 2025 public workshop on the Cap-and-Invest Program.¹

On September 13, the California Legislature passed two landmark bills pertaining to its Cap-and-Invest Program and requiring CARB to update its regulations. Assembly Bill ("AB") 1207 (Chapter 117, Statutes of 2025) extended the Program to 2045 and made many technical changes.² Senate Bill ("SB") 840 (Chapter 121, Statutes of 2025) directed review of existing compliance offset protocols and made changes to the Greenhouse Gas Reduction Fund. Importantly, in extending the Program to 2045, the Legislature aligned the Program's emission reduction targets with AB 1279, the California Climate Crisis Act (Chapter 337, Statutes of 2022), which declared the policy of the state to reduce anthropogenic greenhouse gas ("GHG") emissions to 85 percent below 1990 levels by 2045 and to achieve net zero GHG emissions no later than 2045 and maintain net negative GHG emissions thereafter.³ In its public workshop on October 29, 2025, CARB initiated its process of amending its regulations.

The deployment of established carbon capture and storage ("CCS") technologies is an important pillar of achieving the state's 2045 emission-reduction targets.⁴ CARB's 2022 Scoping Plan specifically emphasizes the need for significant deployment of CCS on electricity generation facilities, which will be

¹ Cal. Air. Res. Bd., Cap-and-Invest Program Workshop, Oct. 29, 2025, https://ww2.arb.ca.gov/sites/default/files/cap-and-trade/meetings/nc_CapInvestWorkshop_October2925.pdf.

² See AB-1207 Climate change: market-based compliance mechanism: extension, https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202520260AB1207.

³ Cal. Health & Saf. Code § 38562.2(c).

⁴ The Legislature double-joined AB 1279 with SB 905 (Chapter 359, Statutes of 2022), the bill that authorized regulations to enable the deployment of CCS projects. This meant that the state's ambitious 2045 emission-reduction targets could not go into effect unless a CCS legal framework did as well.

needed to maintain critical grid reliability as California moves toward AB 1279's targets.⁵

Calpine operates the largest fleet of natural gas combined-cycle ("NGCC") and combined heat and power ("CHP") facilities in the United States. In California, Calpine is developing multiple pathbreaking CCS projects, such as the Sutter Decarbonization Project, which is expected to capture up to 1.75 million metric tons of carbon dioxide ("CO₂") each year from the Sutter Energy Center near Yuba City, California.⁶ Calpine also contributed to a Front-End Engineering Design ("FEED") study sponsored by the Department of Energy ("DOE") at Calpine's Delta Energy Center in Pittsburg, California, and it has further commenced a FEED study in cooperation with DOE to retrofit the Pastoria Energy Facility in Kern County with a modern carbon capture system. Calpine also hosts a pilot project underway at Los Medanos Energy Center, a CHP plant in Pittsburg, California, where it has set up a learning center to disseminate information about CCS technology. Full-scale CCS retrofits are also at various stages of development at several other Calpine plants across the country.

Calpine is committed to helping CARB ensure that its updated Cap-and-Invest Regulation encourages the construction of CCS projects that are essential to achieving the state's climate goals, while protecting public health and the reliability of the electricity grid. In response to its October 29, 2025 public workshop, Calpine encourages CARB to make technical amendments to the Cap-and-Invest Program and the Mandatory Reporting Regulation ("MRR") to provide developers of CCS projects in the electricity sector with the regulatory clarity needed to scale up CCS deployment.⁷ As explained in more detail below, CARB should clarify accounting methodologies and compliance obligations for stored CO₂ and provide related regulatory definitions. Clear ground rules will also assist other agencies in designing their own regulations to scale up deployment.⁸

Operators of natural gas-fired power plants that are developing CCS projects are regulated under the Cap-and-Invest Program and the MRR. The current Cap-and-Invest Regulation already sketches out a general accounting framework that can be applied to sources that emit carbon (e.g., a gas-fired power plant that is a "first deliverer of electricity") and use CCS technology to capture emissions (termed "carbon dioxide

⁵ Cal. Air Res. Bd., 2022 Scoping Plan Update, at 86, <https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf>.

⁶ Calpine, *Press Release: Calpine Announces Execution of Full-Scale CCS Demonstration Project Cost Sharing Agreement with the Department of Energy for Sutter Decarbonization Project* (Aug. 7, 2024), <https://www.calpine.com/calpine-announces-execution-of-full-scale-ccs-demonstration-project-cost-sharing-agreement-with-the-department-of-energy-for-sutter-decarbonization-project/>.

⁷ At the workshop, CARB asked questions on a number of specific topics relevant to its rulemaking, including how to protect against emissions leakage in adjusted allowance budgets and how to address allowance allocation changes from natural gas corporations to electrical distribution utilities. *See* Cap-and-Invest Program Workshop, at 46, 55. This comment does not directly comment on those issues.

⁸ CARB is currently drafting regulations for SB 905, and Calpine recently filed a comment in that proceeding making some similar points. *See* Calpine Corp., *Calpine Corporation's Comments on the Information Solicitation to Inform Implementation of SB 905* (Oct. 6, 2025), <https://ww2.arb.ca.gov/form/public-comments/submissions/52901>.

suppliers”). In a placeholder provision, the Regulation currently provides that GHGs captured and permanently sequestered through CCS should not be included in a carbon dioxide supplier’s “aggregate” compliance obligation.⁹ But the current Regulation and the MRR require clarifying amendments.

First, the Regulation currently does not provide key accounting details for calculating the aggregate compliance obligation. Specifically, it is not clear that a covered entity will have its compliance obligation calculated to reflect only those residual emissions that are emitted to the atmosphere and not any carbon dioxide captured and permanently sequestered, as reported pursuant to the entity’s status as a “carbon dioxide supplier.” In its October 29, 2025 workshop, CARB affirmed that CO₂ captured at the stack would lead to a “reduction” in the compliance obligation of a covered entity.¹⁰ But key details on how this is calculated remain to be clarified.¹¹

Second, the Cap-and-Invest Regulation may require amendments so that it applies to, and can impose compliance obligations on, entities engaged in injection or geological sequestration, for which CARB should provide a definition of “geologic sequestration facility.” Although the Cap-and-Invest Regulation provides that carbon dioxide suppliers (i.e., entities that *capture* emissions) are covered entities, it does not currently provide that entities engaged in geologic sequestration are also covered.¹² Moreover, the MRR does not provide clear rules as to whether and how entities engaged in geologic sequestration must report the amounts of CO₂ that they inject or sequester, as it arguably does not incorporate Subpart RR of EPA’s Greenhouse Gas Reporting Program (“GHGRP”).¹³ The MRR and the Cap-and-Invest Regulation also do not require geologic sequestration entities to report how much injected CO₂ came from each individual carbon dioxide supplier—a provision that will be necessary to ensure tracking of CO₂ along the chain of custody.

⁹ 17 C.C.R. § 95852(g).

¹⁰ Cal. Air Res. Bd, *California Public Workshop: Potential Amendments to the Cap-and-Invest Program*, available at <https://www.youtube.com/watch?v=CWGz5ZEKedk>, 2:23:30 (Rajinder Sahota, Deputy Executive Officer: “Obviously, if [the CO₂ is] captured in the smoke stack, it would be a reduction in the compliance in the Cap-and-Trade Program.”).

¹¹ 17 C.C.R. § 95852(g).

¹² SB 905 includes definitions for “geologic storage complex” and “geologic storage reservoir,” but neither definition appears to refer to the reporting entities themselves and neither currently exists in the MRR or Cap-and-Invest Regulation. Cal. Pub. Res. Code § 71460(c), (d).

¹³ Entities under the MRR are subject to a general duty to “submit an annual emissions data report” that is “compiled using the methods specified by source category in 40 CFR Part 98”—i.e., the GHGRP. 17 C.C.R. § 95101(a)(2). Part 98 includes Subpart RR, which is applicable to “any well or group of wells that inject a CO₂ stream for long-term containment in subsurface geologic formations,” including “all wells permitted as Class VI.” 40 CFR § 98.440(a), (b). But the MRR arguably does not incorporate Subpart RR, as it adopts only the GHGRP regulations promulgated in rules published in the Federal Register on four listed dates, and none of those rules included Subpart RR. 17 C.C.R. § 95100(c).

As CARB acknowledged in its workshop, EPA recently proposed rescinding the GHGRP.¹⁴ CARB noted that, because the MRR incorporates by reference previous versions of the GHGRP, they will not be impacted by future EPA action. Still, CARB should ensure that its MRR revisions incorporate the most up-to-date versions of all relevant regulations and definitions that existed prior to any potential repeal, so as to ensure a complete accounting framework remains.¹⁵

Third, neither the MRR nor the current Cap-and-Invest Regulation requires entities engaged in geologic sequestration to report how much surface leakage of CO₂ occurs. Amendments will be needed to ensure that leakage of CO₂ into the atmosphere is monitored and reported so that it can be addressed within the Cap-and-Invest Program. As a preliminary matter, these amendments will require a uniform definition of “surface leakage,” which the GHGRP defines, but the MRR and the current Cap-and-Invest Regulation do not. Calpine recommends adopting a definition similar to the federal definition, which defines “surface leakage” to mean “the movement of the injected CO₂ stream from the injection zone to the surface, and into the atmosphere, indoor air, oceans, or surface water.”¹⁶ This will expand the expectations of Class VI wells, which must only be designed to avoid leakage of emissions to the atmosphere. For purposes of consistency across regulatory programs, however, relying on the GHGRP is preferable. Calpine further recommends that CARB ensure that any procedures for quantifying surface leakage align with federal law, including the recapture provisions governing the section 45Q tax credit.¹⁷

By establishing clear rules for quantifying emissions under the MRR and Cap-and-Invest Program, CARB will also be assisting other agencies in making their own rules to scale up deployment of CCS projects. For example, CARB’s rulemaking can assist the California Public Utilities Commission (“CPUC”) in further supporting firm dispatchable generation to help achieve meaningful GHG reductions while the state manages the required buildout of intermittent renewables, storage, and associated transmission. As part of its Integrated Resource Planning (“IRP”) process, the CPUC is currently developing the Reliable and Clean Power Procurement Program (“RCPPP”) as the framework for load serving entities (“LSEs”) to meet electric system reliability and GHG emission reduction goals at least cost.¹⁸ Calpine has explained to the CPUC that eligibility for firm dispatchable resources such as gas-fired electricity abated by CCS is

¹⁴ Cap-and-Invest Program Workshop, at 11; *see* Reconsideration of the Greenhouse Gas Reporting Program, 90 Fed. Reg. 44,591 (Sept. 16, 2025).

¹⁵ For purposes of CCS projects in the electricity sector, Subparts A, C, D, PP, and RR are most critical.

¹⁶ 40 CFR § 98.449.

¹⁷ *See* 26 CFR § 1.45Q-5(c) (requiring recapture of the section 45Q tax credit with respect to the number of metric tons of qualified carbon oxide that has leaked to the atmosphere as quantified “pursuant to the requirements of 40 CFR part 98 subpart RR or CSA/ANSI ISO 27916:2019”).

¹⁸ On April 29, 2025, CPUC Staff released a proposal that seeks to translate the CPUC’s GHG targets for the entire resource portfolio into individual LSE obligations and actionable metrics for jurisdictional LSEs. *See* Cal. Pub. Util. Comm., Staff Proposal: Reliable and Clean Power Procurement Program (April 29, 2025), <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M565/K140/565140169.PDF>.

critical to ensure that GHG goals are achieved reliably, cost-effectively, and on schedule.¹⁹ In fact, deploying CCS at scale without significant transmission upgrades may be the only way to keep the state on track to meet the GHG goals cost-effectively. Clear rules from CARB will assist the CPUC in designing and implementing its plans.²⁰

The above suggestions describe at only a high level some of the key changes that will be needed to the current Cap-and-Invest Regulation and the MRR to address accounting issues relevant to CCS projects, including how compliance obligations will be determined for market participants developing CCS projects in the state. Calpine has spent time studying the issue and sketching out potential proposals and would be pleased to engage further to help CARB provide the necessary regulatory clarity. By promulgating these amendments, CARB can meet the statutory requirements of AB 1207 and SB 840 and ensure that the state attains AB 1279's emission-reduction and carbon-neutrality targets.

Calpine looks forward to continued engagement with CARB as it develops these regulations.

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Please contact either of us at Kassandra.Gough@calpine.com or Diana.Gallegos@calpine.com with any questions regarding these comments.

Sincerely,

/S/

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/S/

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¹⁹ See Comments of Calpine Corporation on Administrative Law Judge's Ruling Seeing Comments on Reliable and Clean Power Procurement Program Staff Proposal at 2 (July 15, 2025), <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M573/K432/573432171.PDF>; see also Calpine Reply Comments at 7 FN 27 (August 8, 2025) <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M575/K527/575527167.PDF>.

²⁰ In addition, CARB should continue to include gas generation with CCS in the resource portfolios underlying the scoping plan and collaborate with the CPUC where appropriate.