



November 11, 2025

California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: Potential Amendments to the Cap-and-Invest Program Workshop, October 29, 2025

Cap and Invest Program staff:

Thank you for offering the October 29 workshop on regulatory changes to the Cap & Invest (formerly Cap and Trade) Program, now under consideration—and for proposing substantive changes to the program in line with AB 1207 and SB 840, signed by Governor Newsom in September. We especially appreciate your proposals to withdraw some allowances; continue decreasing emissions caps; increase climate credits on ratepayer electricity bills (but not on fossil gas bills); synchronize with Washington State's Cap & Invest Program; end free allowances for fossil gas firms while increasing free allowances for clean electricity firms; and add decarbonization incentives for manufacturing. This is a long and heartening list of improvements to the program, designed to reduce emissions significantly while increasing the chances that California will achieve our decarbonization goals on deadline.

We offer the recommendations below in hopes of further enhancing the efficacy of program improvements and realizing the missions of both CARB and Cap & Invest (C&I). Please note that some of these recommendations may require teaming up with other agencies.

HOW TO MINIMIZE VARIABLE AUCTION SIZES (SLIDE 25 QUESTION)

AB 1207 (Irwin, 2025) included a provision governing offset retirements, codified in the Health & Safety Code in section 38562, subd. (c)(2)(E)(iii). Although that change did not alter the fundamental trajectory of California's declining emissions cap, it did specify an accounting method that differs from how CARB previously handled offset retirements and annual allowance budgets.

The October 29, 2025 presentation shows that offset retirements, like all allowance retirements, increase significantly during the third allowance surrender event for each Compliance Period (CP). Slides 23 and 24 illustrate changes in allowance budgets and auction proceeds—had AB 1207 been in effect during prior CPs.

Slide 25 asks: How can the program minimize the variability between auctions? This is an important question, because there is a fundamental mismatch between Cap & Invest's three-year compliance cycle and the state's annual budget, which includes GGRF expenditures derived from Cap & Invest auctions.

Although the AB 1207 provision focused on offsets, the solution need not be in how and when offsets are issued, surrendered and retired. Another way to look at the mismatch between the state's annual budget and Cap & Invest's triennial cycle is to adjust the triennial cycle itself. For example, the triennial cycle could simply require surrendering allowances each year to match emissions from the prior year.

Presumably the generous "payment" terms in the first few CPs gave covered sectors more time to plan and make adjustments that affected their emissions or their financial situations. But now that the program has matured, and covered sectors are familiar with budgeting for Cap & Invest compliance, why do we need to extend that generous 'emit now, pay later' schedule? It certainly does not benefit the public or the atmosphere. Given the time value of money, it surely benefits emitters on a purely quantitative basis. [On the other hand, the uneven nature of triennial compliance presumably complicates planning and budgeting for covered entities.]

For the following reasons, we suggest considering a pay-as-you go approach, perhaps softened in CP6 and fully implemented in CP7.¹

- First, there is no longer any reason that California citizens and our atmosphere should extend generous credit terms to emitters, allowing them to postpone compliance expenses. The costs and operational considerations that result from the Cap & Invest signal are no longer new or unexpected in any way.
- Second, basic behavioral psychology informs us that if we expect to change human behavior, every reward or punishment must be paired as close in time to the behavior as possible. A program that essentially informs participants that their year one emissions must be largely *paid for four years later* is far from optimal.

If we consider our complex economy and financial systems to be far advanced and above actual human behavior, we do so at our peril.

RECOMMENDATION: PROVIDE TECHNICAL SUPPORT FOR COMPANIES TRANSITIONING TO CAP AND INVEST

Emissions-intensive trade-exposed industries

Change can be challenging for industry, as we know. Climate Action California's subject experts are concerned that businesses affected by the changes to Cap and Invest will not easily adopt new processes and procedures that will allow them to take full advantage of improvements in the program. Consequently our foremost recommendation to CARB is to offer decarbonization technology transfer resources and technical support to California's Emissions Intensive Trade Exposed Industry (EITEs). Using

¹ For example, CP6 could require 80/80/140% compliance in the three years, rather than the current 30/30/240 % schedule. CP7 would then be 100/100/100 %.

available technology and proven strategies, EITEs should be able to maintain current production volumes using energy that is economical, efficient, and lower in emissions than many of their current power sources—increasing net profit and avoiding leakage. AB 1280 (Garcia), signed in October, will expedite replacement of fossil energy with clean sources of generation, heat, and storage in industry.² Funding from the I-Bank is available to fund this transition. Energy Innovation, a business-friendly think tank in the Bay Area, has just released free, open-source software to plan industrial decarbonization.³ Your proposed Manufacturing Decarbonization Incentive (using allowances) may not be needed if the above resources are used.

Idle and abandoned oil and gas wells

California has many thousands of idle and abandoned wells and pipelines that are emitting GHGs and toxics. Working together, CARB and the California Geologic Energy Management Division (CalGEM) can illuminate ways to dismantle, remove, plug, and remediate these wells using less emissions-intensive technologies. (Bids for doing this could be solicited from well owners and non-owners.)

Lower-temperature industrial processes

Consider offering targeted webinars and follow-up consulting to companies, aiding and accelerating the transition to clean energy. This will be particularly important for the industries targeted by AB 1280, which use temperatures under 200 Celsius, such as food processing, pharmaceutical manufacturing, space heating and cooling, and papermaking. In these industries, heat pumps are excellent substitutes for fossil fuel heat sources.

High-temperature industrial processes

Many higher-temperature processes such as steel, cement, utilities, and fossil fuel extraction and refining will continue to benefit from more research and innovation as they decarbonize, as in many applications only resistance electric heating or electric arc heating can now provide the higher temperatures needed. Demonstration projects have been tested for decarbonization of [cement](#) and [steel](#). Some of these are ready for commercial application. Cap & Invest should incentivize firms using high-temperature processes to develop or acquire the technical expertise, equipment, and skilled labor to accomplish necessary clean transition options.

Biomass and biomass with carbon capture and storage (BECCS)

Biomass energy is reported, but not counted for purposes of Cap and Invest. We recommend that CARB offer decarbonization education specifically to biomass production firms, including methodologies for cost-benefit accounting. Costs should include lifecycle emissions including emissions from destruction processes and land use changes. CARB and partner agencies may be able to educate the biomass industry about transition options from combustion to long-term storage in lumber and finished wood, including emissions changes.

² https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202520260AB1280

³ <https://energyinnovation.org/report/the-industrial-transformation-technology-and-investment-model/>

A NOTE ON AFFORDABILITY AND THE SOCIAL COST OF CARBON

In the short term, there may seem to be an inverse correlation between affordability and decreasing emissions.^{4,5,6,7} Yet sooner rather than later, significant investments in mitigation will provide a greater return on investment and decrease adaptation costs.

There are three kinds of affordability to consider: a) the cost of production for industry, b) the cost of finished goods, and c) externalized costs (the Social Cost of Carbon, or SCC). The payor for each, respectively, is a) industry, b) industry + consumers, and c) everyone. “Everyone” includes high carbon intensity and low carbon intensity businesses, government units, individuals, and ecosystems. Unfortunately, decarbonization is not incentivized for industry or purchasing consumers—at least in the short run.

The Polluter Pays Principle assigns responsibility for bearing SCC costs to polluters, but in fact it is currently paid primarily by individuals. Only a small percentage of SCC is being collected in California, despite many decarbonization policies and a steep annual rise in the actual Social Cost of Carbon. Many constructive proposals for increasing this percentage have been considered by IEMAC,⁸ legislators,^{9,10} NGOs,¹¹ and scientists.^{12,13,14,15} We encourage CARB to establish a rising percentage as the primary target of C&I. This maximizes benefit to all California residents, incentivizes industry to decarbonize, and maximizes Greenhouse Gas Reduction Fund (GGRF) revenue.

If EITE businesses do not pay the full SCC for their products (via various mechanisms including C&I), consumers at all levels (government, business, individuals) will have to decide whether they would rather pay higher prices for modified, formerly carbon-intensive goods—or whether they prefer to pay the sum of higher income taxes required to invest in mitigation, adaptation, and MediCal benefits; property taxes, insurance, and repairs; medical bills and insurance premiums; and shorter lifespans,

⁴ https://www.pnas.org/doi/10.1073/pnas.2410733121?utm_source=substack&utm_medium=email

(Contrast the article with Cap & Trade results during 2025. Allowances have sold for between \$25 to \$40 per ton - an average of \$32.5 per ton. However, half of allowances are handed out for free. So, in effect, revenue from allowances was about \$16 per ton, which is less than 6% of the Social Cost of Carbon.)

⁵ <https://www.law.berkeley.edu/research/clee/research/climate/california-climate-action/costs-of-climate-change/>

⁶ [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(25\)01919-](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(25)01919-1/fulltext?dgcid=raven_jbs_etoc_feature_lancetclimate25)

[1/fulltext?dgcid=raven_jbs_etoc_feature_lancetclimate25](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(25)01919-1/fulltext?dgcid=raven_jbs_etoc_feature_lancetclimate25). See Economics and Finance section for social costs

⁷ [https://psr.org/issues/environment-health/fueling-sickness/?emci=b26f6992-46bb-f011-8e61-](https://psr.org/issues/environment-health/fueling-sickness/?emci=b26f6992-46bb-f011-8e61-6045bdd6f338&emdi=dc6db86e-eabb-f011-8194-00224823ff9b&ceid=35033)

[6045bdd6f338&emdi=dc6db86e-eabb-f011-8194-00224823ff9b&ceid=35033](https://psr.org/issues/environment-health/fueling-sickness/?emci=b26f6992-46bb-f011-8e61-6045bdd6f338&emdi=dc6db86e-eabb-f011-8194-00224823ff9b&ceid=35033)

⁸ <https://calepa.ca.gov/2024-iemac-annual-report/>

⁹ SB 684 (Menjivar, 2025) and AB 1243 (Addis, 2025)

¹⁰ <https://www.nrdc.org/stories/introducing-polluters-pay-laws-new-tool-climate-adaptation>

¹¹ <https://www.sierraclub.org/sierra/new-federal-legislation-proposes-make-polluters-pay-climate-change>

¹² <https://www.sciencedirect.com/science/article/pii/S0140988325001409>

¹³ [https://www.researchgate.net/profile/Ganesh-V-](https://www.researchgate.net/profile/Ganesh-V-Radhakrishnan/publication/394771875_Polluter_Pays_Principle_Legal_Interpretations_and_Enforcement_Challenges/links/68a61d00d9261f6f51adaec0/Polluter-Pays-Principle-Legal-Interpretations-and-Enforcement-Challenges.pdf)

[Radhakrishnan/publication/394771875_Polluter_Pays_Principle_Legal_Interpretations_and_Enforcement_Challenges/links/68a61d00d9261f6f51adaec0/Polluter-Pays-Principle-Legal-Interpretations-and-Enforcement-Challenges.pdf](https://www.researchgate.net/profile/Ganesh-V-Radhakrishnan/publication/394771875_Polluter_Pays_Principle_Legal_Interpretations_and_Enforcement_Challenges/links/68a61d00d9261f6f51adaec0/Polluter-Pays-Principle-Legal-Interpretations-and-Enforcement-Challenges.pdf)

¹⁴ [https://www.researchgate.net/profile/Saroar-](https://www.researchgate.net/profile/Saroar-Mohammad/publication/396324695_What_impact_will_it_make_on_justice_and_environmental_accountability_if_ecocide_is_criminalized/links/68e6b3a4ffdca73694b64429/What-impact-will-it-make-on-justice-and-environmental-accountability-if-ecocide-is-criminalized.pdf)

[Mohammad/publication/396324695_What_impact_will_it_make_on_justice_and_environmental_accountability_if_ecocide_is_criminalized/links/68e6b3a4ffdca73694b64429/What-impact-will-it-make-on-justice-and-environmental-accountability-if-ecocide-is-criminalized.pdf](https://www.researchgate.net/profile/Saroar-Mohammad/publication/396324695_What_impact_will_it_make_on_justice_and_environmental_accountability_if_ecocide_is_criminalized/links/68e6b3a4ffdca73694b64429/What-impact-will-it-make-on-justice-and-environmental-accountability-if-ecocide-is-criminalized.pdf)

¹⁵ <https://www.nature.com/articles/s41586-025-08751-3>

unmitigated exposure to extreme weather events, etc., etc. When EITEs do not pay the full SCC, and government does not invest those payments in effective mitigation, consumers will pay the sum of SCC costs, increasing over time.

We are in no position to micromanage CARB economists' analysis of the crediting system under Cap & Invest, but we know that CARB has the authority to manipulate many variables—most obviously the number of free allowances given out, retirement (expiration) of free allowances, the floor price of allowances, and the annual rate of emissions cap decrease. Finally, to qualify for funding from GGRF allowance auctions, a project must demonstrate reduction of GHG emissions. And example: While housing in general actually increases emissions, especially during the construction period, certain kinds of new housing that have a lower carbon intensity and operating cost than the norm would qualify: micro-sized units in multi-family or single-family dwellings, passive buildings, all-electric buildings with rooftop solar and batteries, and the most efficient appliances. The best siting for such new housing is high-density urban infill proximal to public transit. CARB could adjust each of these C&I variables and thus incentivize much more energy-efficient housing stock.

Thank you for your consideration of these comments. We look forward to your updates as rulemaking evolves. In the meantime, Climate Action California has numerous citations and references to corroborate each of our recommendations, which we are happy to share if you would like to see them. If you have questions or would like to discuss our ideas, please reach out to me at the email address below.

Sincerely,

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