

## ISSUE BRIEF

# Analytical Response to CARB's April 14, 2026 Proposal for California's Cap-and-Invest Program

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## Summary

This memo provides a technical review of the California Air Resources Board's (CARB) proposed amendments to California's Cap-and-Invest program included in the [April 14th Proposal](#). Using Greenline Insights' TRACE<sup>1</sup> model, we assess the implications of the proposed allowance budget and allocation structure, with a particular focus on the potential addition of 118.3 million allowances associated with the manufacturing decarbonization incentive (MDI). We evaluate the April 14th Proposal alongside the ISOR proposal (released on January 20th, 2026) and a set of alternative scenarios that preserve the level of the cap while varying the scale and timing of industry support. All scenarios are evaluated under a consistent emissions demand trajectory ("Central Case") to isolate the effects of allowance supply on market outcomes, revenue generation, and household affordability.

Findings indicate that adding the MDI's 118.3 million allowances above the cap disrupts allowance market balance. Under the April 14th Proposal, modeled prices remain at the auction floor for the entire program, and auctions become undersubscribed as early as 2042, when the accumulated private allowance bank is sufficient to cover all remaining compliance obligations. Scenarios that instead preserve the 118.3 million reduction in the cap through 2030, without adding 118.3 million allowances back into the market via the MDI, avoid undersubscription and support stable price formation leading to better affordability outcomes while maintaining or increasing GGRF revenue.

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<sup>1</sup> Technical documentation on the model is available [here](#).

## About Greenline Insights

[Greenline Insights](#) is an independent, nonpartisan research firm specializing in advanced energy and economic modeling to inform effective policy design and actionable strategies. Our work spans climate and energy, industrial decarbonization, innovation, infrastructure, advanced manufacturing, and supply chain analysis - supported by custom datasets, modeling workflows, and data tools built for each project's unique analytical needs.

California TRACE (Tool for Regional Analysis of Cap-and-Invest Economics) is a two-stage modeling framework that links allowance market dynamics and detailed economic distributional outcomes from California's Cap-and-Invest program. California TRACE is built to evaluate "what-if" policy designs transparently: it projects annual allowance prices and quantities under alternative cap, offset, and reserve settings, then traces how compliance costs and allowance value flow through utilities, industries, and ultimately California households by income bracket.

California TRACE was developed by Greenline Insights, with support and partnership from Environmental Defense Fund. All methodologies, results, and commentary in this memo are the opinion of Greenline Insights and do not reflect the opinions of supporters or partners.

## Overview of Modeling Scenarios

To evaluate the implications of the April 14th Proposal, a set of allowance allocation scenarios is modeled within the TRACE framework. All scenarios maintain a consistent program structure based on the April 14th Proposal allowance distributions, a common emissions demand trajectory, and a fixed 2045 emissions endpoint. The scenarios differ only in the treatment of the manufacturing decarbonization incentive (MDI), a newly proposed program feature that provides additional allowances, above the allowance budgets, to industry based on qualifying clean investment activities and may be used to meet compliance obligations under the program.

The primary scenarios evaluated include the ISOR Proposal<sup>2</sup>, the April 14th Proposal, and a set of alternative scenarios that modify the treatment of the MDI. Under the April 14th Proposal, CARB introduces up to 118.3 million allowances through the MDI, additional to the allowances in the cap. We model this structure directly and evaluate its implications relative to the ISOR proposal.

To assess potential design alternatives, we model three additional scenarios that preserve the level of the cap that was proposed in the ISOR – i.e., without adding an additional 118.3 million allowances to the program – while varying the scale and timing of industry support via the MDI. In the first, the MDI is removed entirely from the April 14th Proposal. In the second, the total MDI allocation is reduced (to approximately 44 million) and distributed from within the cap, with these allowances allocated from 2027-2029 allowance budgets. This represents a scenario in which CARB reserves a limited number of allowances from the near-term budgets to allocate to the MDI as a pilot program. In the third, the full 118.3 million allowances are allocated to industry from within the cap rather than in addition to the cap, with the MDI allowances allocated from 2028-2035 allowance budgets.

All scenarios are simulated using a single emissions demand trajectory (“Central Case”), consistent with our prior analysis. This approach ensures that differences in modeled outcomes are attributable to changes in allowance supply and allocation design, rather than variation in emissions assumptions that could independently introduce oversupply or undersubscription dynamics. In scenarios where MDI allowances are allocated from within the cap, these allowances are assumed to be sourced from state-owned allowances that would otherwise be auctioned for GGRF purposes, with all other allocation and distribution mechanisms held constant.

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<sup>2</sup> In the ISOR scenario, the MDI is modeled as 40 million allowances distributed equally across 2027 - 2038 and kept under the cap.

**Table 1. Explanation of Modeled Scenarios**

Scenario	Description
<b>ISOR Proposal</b>	Allowance budget and allocations as outlined in the ISOR, including an estimated 40M allowances distributed to the MDI, which are kept under the cap.
<b>April 14th Proposal</b>	Allowance budget and allocations as outlined in the April 14th Proposal, including the creation of 118.3M additional allowances distributed to the MDI and added to the cap.
<b>Alternative Scenario 1</b>	Allowance budget and allocations as proposed in the April 14th Proposal, while removing the MDI completely.
<b>Alternative Scenario 2</b>	Allowance budget and allocations as outlined in the April 14th Proposal, but with the MDI reduced to 44M allowances and allocated from under the cap. Modeled as a 14.8M allowances allocated to the MDI annually from 2027-2029 allowance budgets.
<b>Alternative Scenario 3</b>	Allowance budget and allocations as outlined in the April 14th Proposal, but with the 118.3M MDI allowances allocated from under the cap. Modeled as 14.8M allowances allocated to the MDI annually from 2028-2035 allowance budgets, matching the timeframe during which the MDI is proposed to be available.

TRACE outputs should be interpreted as directional indicators of long-term market balance rather than precise forecasts. Modeled allowance prices reflect underlying supply–demand conditions and are used to assess the likelihood of sustained auction participation, revenue generation, and the risk of undersubscription.

## Modeling Results

Allowance prices under the April 14th Proposal are projected to track the auction price floor for much of the program horizon. This outcome is driven by the addition of the MDI allowances above the cap, which creates a persistent oversupply in the market. As a result, the program is projected to experience undersubscription beginning as early as 2042, reduced cumulative GGRF revenue, and weakened household affordability relative to the ISOR Proposal. Overall, the April 14th Proposal is projected to generate approximately \$18.1 billion in GGRF revenue – \$8 billion less than the \$26.1 billion in GGRF revenue we project under the ISOR proposal. This reduction in GGRF revenue is driven by the lower allowance prices and undersubscribed auctions resulting from a looser supply-demand balance, in addition to a reduced share of allowances directed to GGRF in the April 14th Proposal. As discussed further below, affordability benefits for low- and moderate-income households are lower under the April 14th Proposal compared to the ISOR proposal, due to the market oversupply when an additional 118.3 million allowances are introduced into the program.

These results point to clear design pathways through which oversupply can be addressed while maintaining industry support. Three alternative scenarios are modeled to evaluate these approaches. Across these scenarios, preserving the cap – by allocating MDI allowances from under the cap, reducing the total MDI allocation and allocating from under the cap, or removing the MDI entirely – results in stronger affordability outcomes. Some of these alternative scenarios also generate higher cumulative GGRF revenue through 2045.

Model results suggest that the addition of 118.3 million allowances above the cap is the primary driver of undersubscription risk; when these allowances are instead allocated from within the cap, undersubscription does not occur.

### Affordability Impacts

Scenarios are modeled to quantify the affordability impacts of adding 118.3 million allowances above the allowance budget, assuming the MDI is fully utilized. Results show that adding these allowances above the cap results in undersubscription and dilutes the affordability benefits of the program by reducing auction revenue and limiting utility consignment, while compliance costs continue to be passed through to households.<sup>3</sup> For households earning

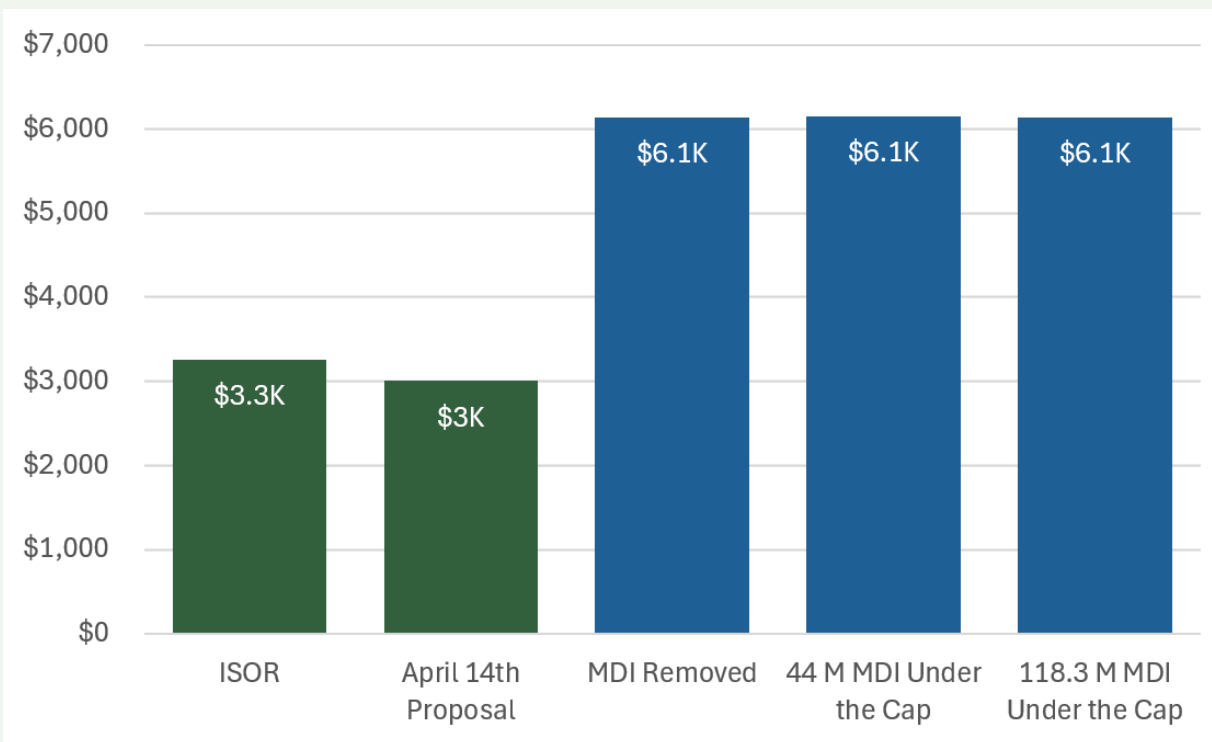
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<sup>3</sup> For more information about treatment of undersubscription in TRACE, see Key Assumptions.

\$150,000 or less, cost savings remain positive but are reduced to less than one-fourth of the levels observed when the same allowances are allocated from under the cap rather than added above it.

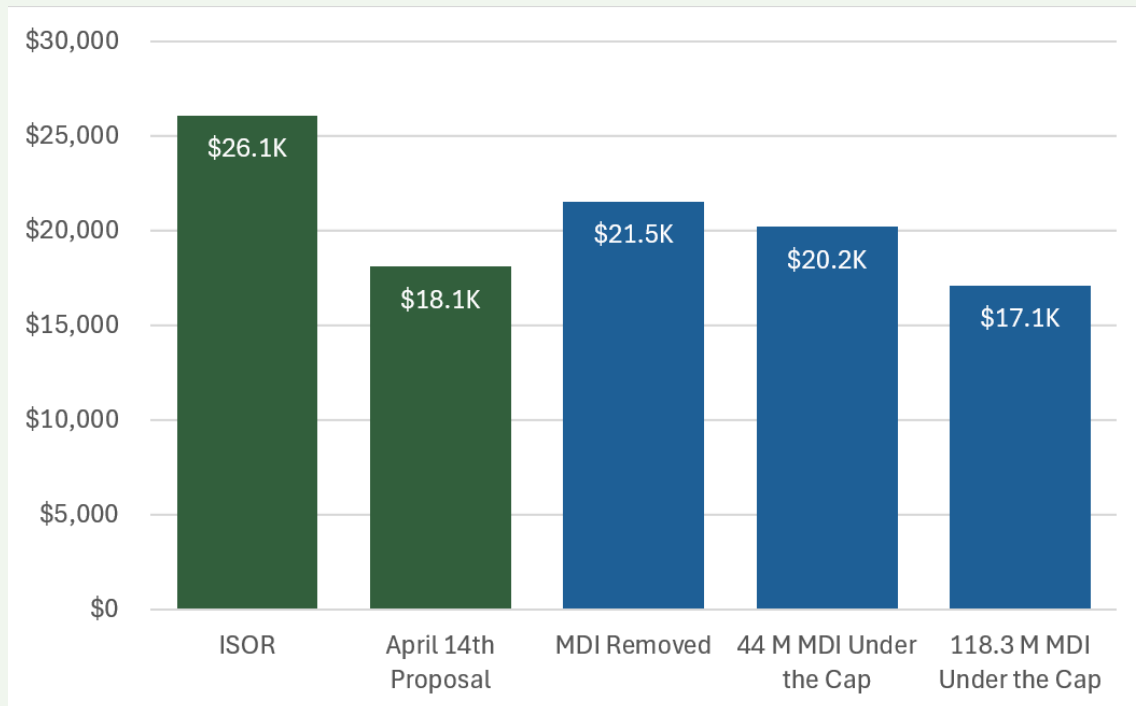
Affordability outcomes substantially improve by preserving the level of the cap proposed in the ISOR – i.e., removing 118.3 million allowances from program budgets through 2030, without adding back 118.3 million allowances via the MDI. **In every alternative scenario where the cap is preserved, households earning \$100,000 or less see over \$6.1 billion in net cost savings over the course of the program – over twice the cost savings relative to the April 14th Proposal.**

**Figure 1. Cumulative Benefits to Households Earning \$100,000 or Less Through 2045 (\$M)**



## GGRF Impacts

Projected GGRF revenue is \$8 billion lower under the April 14th Proposal than under the ISOR Proposal. Multiple modeled scenarios demonstrate that CARB can preserve the cap while maintaining or even increasing cumulative GGRF revenue through 2045.

**Figure 2. Cumulative GGRF Revenue (\$M) by Scenario Through 2045**


- Alternative Scenario 1 removes the MDI entirely. This scenario results in the highest GGRF revenue of the three alternative scenarios (\$3.4 billion higher GGRF revenue than the April 14th Proposal) and increased cost-savings to households.
- In Alternative Scenario 2, the MDI is reduced to approximately 44 million allowances, allocated from under the cap, and frontloaded across the 2027–2029 period. This scenario demonstrates that industry support can be maintained while preserving the cap, increasing GGRF revenue and improving household affordability outcomes relative to the April 14th Proposal.
- Alternative Scenario 3 places the full 118.3 million allowance budget for MDI under the cap, slightly reducing overall GGRF revenue relative to the April 14th Proposal, but maintains a stronger allowance price signal, eliminates the risk of undersubscription, and increases household cost-savings.

Across all alternative scenarios, cumulative GGRF revenue is either comparable to or higher than under the April 14th Proposal. These higher revenues are achieved despite lower GGRF auction volumes, due to a more balanced allowance market, which supports stronger price trajectories and avoids undersubscription in later years.

## Key Assumptions

The TRACE model was updated to reflect CARB's proposal in the ISOR to reserve allowances from the budget to account for offset use. We model this proposal by assuming that, beginning in 2027, an amount of allowances is removed from state-owned auctions equal to 90% of the offset use that is allowable under statutory limits, resembling historical offset use behavior. These allowances are solely removed from state-owned allowances designated for auction. These removals occur consistently each year, regardless of timing with compliance periods, and are modeled as permanent removals from the allowance budget – thereby assuming all reserved allowances will be retired to account for actual offset use. This method differs slightly from the ISOR, which proposes to reserve allowances based on 100% of the maximum allowable offset use and retire reserved allowances based on actual offset use (potentially retiring fewer than 100% of the allowances that were reserved). Since it is unknown whether compliance entities will utilize the full allowance offset levels in the future, for the purposes of modeling, we assume offset use will follow historical trends, indicating that allowances will be retired from the program's budget equal to 90% of offset use limits.

For the purpose of household impacts, allowance budget distributions follow reasonable best-fit assumptions based on the current regulation and expected changes. The April 14th Proposal outlines a phase out of natural gas utility consignment in favor of higher electric utility consignment, but stops the schedule in 2031, saying “The final year for the NGS to EDU allocation transition, as directed by AB 1207, will be established in a future rulemaking” The percent transferred each year from NGS to EDU is 17.5% increased year over year until 70% in 2031. For purposes of modeling, we assume the same pattern (17.5% annual increase) continues until 100% of NGS allowances are transferred over to EDU use by 2033.

Through 2030, utility allocations reflect the schedule outlined in the April 14th Proposal. Beyond 2030, the April 14th Proposal does not include an allocation schedule; for this period, we assume total utility allocation and associated consignment revenue decline proportionately with the overall cap trajectory. This assumption maintains continuity in allocation shares while reflecting the declining emissions budget in later program years. Climate dividends are distributed evenly per household. State-owned allowances for auction (and subsequent GGRF

revenue) are calculated as the remainder of annual budgets, after consignment, free allocation, and APCR reserves have been dedicated on a yearly basis.

All modeled scenarios include continued linkage with Quebec's cap-and-invest market. Consistent with CARB staff analysis<sup>4</sup>, our modeling assumes a total net flow of approximately 14 million allowances from California to Quebec through 2045.

## Undersubscription Accounting

In scenarios where auction supply exceeds demand, covered entities may rely on previously banked allowances rather than purchasing allowances at auction, potentially resulting in undersubscribed auctions in which offered allowances are not sold. We model undersubscription as the point when firms have sufficient banked allowances to cover the remaining projected compliance obligations. In TRACE, compliance costs passed through to ratepayers are based on the prevailing allowance price at the time of surrender rather than the timing of allowance purchases. Moreover, even if firms have sufficient banked allowances such that they do not need to purchase additional allowances at auction, they still face compliance obligations and might pass the compliance costs onto customers. This dynamic can reduce the availability of GGRF-funded affordability benefits and consignment revenue in later program years. As a result, households may continue to experience cost pass-through in years when auction proceeds are reduced due to undersubscription.

## Disclaimer

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<sup>4</sup><https://ww2.arb.ca.gov/sites/default/files/cap-and-trade/regulation/nc-Staff%20Report%20-%20Initial%20Statement%20of%20Reasons%20%28ISOR%29.pdf#page=321>

Model results reflect a simulated market behavior under a set of assumptions that may not capture all real-world conditions, including forward-looking market expectations, regulatory changes, or behavioral responses by market participants. Actual outcomes may differ materially from modeled results due to updates in policy design, market fundamentals, economic conditions, or unforeseen events.

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