May 4, 2026

Lauren Sanchez
Chair, California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: Environmental Defense Fund Comments on 15-day Amendments to Proposed Cap-and-Invest Regulations

Dear Chair Sanchez,

Environmental Defense Fund (EDF) appreciates the significant work of the California Air Resources Board (CARB) staff to develop proposed updates to the Cap-and-Invest program, and we recognize the complexity of the policy questions this proceeding has required staff to address in a limited amount of time. We share these comments with the common goal of ensuring the final rule delivers the necessary outcomes for California's climate targets and households.

The Proposed Amendments to the Regulation for the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms released on April 14, 2026 ("April Proposal" or "April Notice") arrives at a pivotal moment for California's climate leadership. At a time when federal climate protections are being dismantled and the costs of climate inaction are mounting for California households and communities, the Cap-and-Invest Program remains California's most powerful and cost-effective tool for delivering the emissions reductions required by California statutes SB 32 (Pavley, 2016) and AB 1279 (Muratsuchi, 2022). The Legislature recognized this when it passed AB 1207 in 2025, extending the program and directing CARB to ensure that covered emissions decline, at a minimum, in line with the state's 2030 and 2045 statutory targets.[1] That mandate establishes a floor for program ambition, not a ceiling. CARB's April Proposal does not meet that floor—and such a significant deviation could not have been reasonably foreseeable from the January rulemaking notice and Initial Statement of Reasons (ISOR) which explicitly stated that staff were proposing "*more stringent allowance budgets* to reflect recent updates to the GHG Emission Inventory and to *ensure emissions reductions in support of State goals*"[2] (emphasis added). As described in these comments, the April Proposal introduces a new mechanism for funding the Manufacturing Decarbonization Incentive Allocation, by creating up to 118.3 million new compliance instruments above the existing emissions cap, effectively canceling out the same volume of allowance retirements that CARB has determined are necessary to keep the program on track with California's 2030 target of 40% reductions below 1990 levels by 2030.[3] That is not a credible pathway for California's

[1] Health and Safety Code Section 38562(c)(2)
[2] CARB, Initial Statement of Reasons (January 20, 2026), pg. 24. https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2026/cap_invest/nc_isor.pdf
[3] Id. pg. 32

landmark climate program, and it is inconsistent with the mandate given to CARB by the Legislature.

We urge CARB to revise the April Proposal before the Board vote this spring, and swiftly issue another 15-day proposal that makes the very surgical, but necessary changes to realign these draft rules with the requirements of AB 1207, California's statutory climate targets, and the fundamental design principles that have made Cap-and-Invest a model for effective climate policy. The revisions we recommend include:

- **CARB must permanently remove the bare minimum 118.3 million allowances necessary to align with California's 2030 goals; CARB should not erode these reductions via the proposed addition of up to 118.3 million compliance instruments above the cap.**
- **To achieve the above, CARB should remove the Manufacturing Decarbonization Incentive (MDI) from this rulemaking.** This is the most straightforward path towards returning to a program budget that is appropriately aligned with the climate targets. Securing near-term industrial abatement is valuable—but not at the cost of enabling an actual increase in overall pollution.
- **If the MDI is retained, it must be substantially redesigned** to do two things: First, CARB should allocate any MDI allowances from under the emissions cap – rather than above it, as currently proposed. Second, CARB must design adequate guardrails for the MDI to ensure these limited resources are used for smart investments – with the greatest potential to deliver meaningful industrial GHG abatement – and to ensure proper stewardship of this potential $4 billion in additional funding[4]. EDF recommends CARB revise its proposal to include a merit-based competitive allocation process, a robust clawback mechanism for underperforming projects, and clear eligibility restrictions governing renewable electricity generation, carbon capture, and hydrogen use.
- **In addition to the above, CARB can and should be more ambitious in both its 2027-2030 allowance budgets and its post-2030 allowance budgets.** CARB should remove 180 million allowances from the 2027-2030 budgets, a scenario modeled to still deliver meaningful cost-savings to California families. CARB should also significantly tighten post-2030 budgets to accelerate reductions in the early 2030s compared to CARB's proposal, securing at least an additional 221 MMT CO_2e in reductions through 2045.
- **Commit to a new rulemaking, with regulations to address key outstanding issues finalized no later than 2028, including** tightening the post-2030 allowance budgets (if not addressed in this rulemaking), establishing industrial and utility allocation, and reconsidering an appropriate proposal for the MDI. This 2028 rulemaking must ensure that at least any reductions missed in the near term relative to the 2030 target are recouped through a more stringent post-2030 cap trajectory.

EDF also supports important improvements made in the April draft compared to the January ISOR, and urges CARB to retain these changes in the final regulation:

- **Improvements to utility allocation included in the April draft.** Several provisions in the April proposal have the potential to increase cost-savings to households and lower residential electricity costs, including increased near-term allocation for the

[4] CARB, Manufacturing Decarbonization Incentive Fund FAQ (April 2026). https://ww2.arb.ca.gov/sites/default/files/2026-04/nc-MDIF%20FAQ_April%202026.pdf

benefit of electric ratepayers, allowing volumetric returns for allocation to electrical distribution utilities, accelerating the transition from the natural gas Climate Credit to an enhanced electric Climate Credit, and improving protections for low-income customers during this transition. Notably, the weakened cap proposed in the April package puts these benefits at risk; CARB must fix the emissions cap to deliver the cost-savings potential of these utility allocation updates.

- **Removal of 100% industry leakage assistance factors after 2030.** EDF supports CARB's proposal to remove 100% industrial leakage assistance factors after 2030, and urges CARB to calibrate assistance levels based on current leakage risk data, consistent with the authority returned to the agency by AB 1207.

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a. CARB's April Proposal to allow up to 118.3 million tons of GHG pollution above the cap is counter to the statutory requirements of AB 1207.

i. AB 1207 requires CARB to adopt a Cap-and-Invest program that ensures emissions from covered sources are reduced, at a minimum, in line with the statutory climate targets.

The Cap-and-Invest Program exists to impose a binding, declining limit on covered greenhouse gas emissions to ensure California is on track to meet its legally-mandated climate targets. This was the climate imperative behind AB 32 (Pavley & Nunez, 2006), which directed CARB to "design emissions reduction measures to meet the statewide emissions limits for greenhouse gases."[5] It remains the operative legal mandate today: AB 1207 (Irwin, 2025) directs CARB to "adopt greenhouse gas emissions limits and emissions reduction measures by regulation to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions to achieve the requirements" of California's 2030 and 2045 statutory targets.[6] Critically, AB 1207 further mandates CARB to "adopt a regulation that…ensures that programwide aggregate emissions from covered sources, at a minimum, decline with the [2030 and 2045 statutory emission reduction targets]."[7]

ii. Removing at least 118.3 million allowances from 2027-2030 budgets is necessary to align with the statutory targets.

[5] AB 32 California Global Warming Solutions Act of 2006, https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=200520060AB32
[6] Health and Safety Code Section 38562(a)
[7] Health and Safety Code Section 38562(c)(2)

CARB has repeatedly indicated that removing at least 118 million allowances from the program by 2030 is necessary to align the program with the state's climate targets. The ISOR proposes removing 118 million allowances from the 2027-2030 allowance budgets and revising allowance budgets through 2045, describing these changes as "establishing annual allowance budgets supportive of the State's 2030 and 2045 statutory climate targets."[8] Table 3 of the ISOR denotes the 118-million-ton removal as corresponding with a 40% reduction by 2030.[9] When discussing regulatory alternatives, the ISOR explains that a removal of 118 million allowances by 2030 is "the minimum needed to align the supply of allowances for this decade with the updated AB 32 GHG Inventory."[10] This is because the state updated its GHG emissions inventory to incorporate third-party verified data and to "correct some errors."[11] In other words, the state now has a more accurate estimate of its emissions and of the emissions reductions that are needed to achieve the statutory climate targets. The emissions cap in the current regulation was established in the 2016 rulemaking—based on previous emissions estimates that turned out to be too high, according to California's updated inventory.[12] As a result, the current emissions cap in the program contains excess allowances above the level that aligns with California's up-to-date calculation of its emissions and targets. Removing 118 million allowances from the program by 2030 is not a matter of increasing the ambition of the program—but a matter of cancelling out or preventing excess allowances from being erroneously issued above the state's target levels. Without the minimum removal of 118 million allowances by 2030, the program's emissions cap is clearly misaligned with the state's climate targets because it authorizes higher emissions than the state's own estimates of proportional reductions from covered sources.

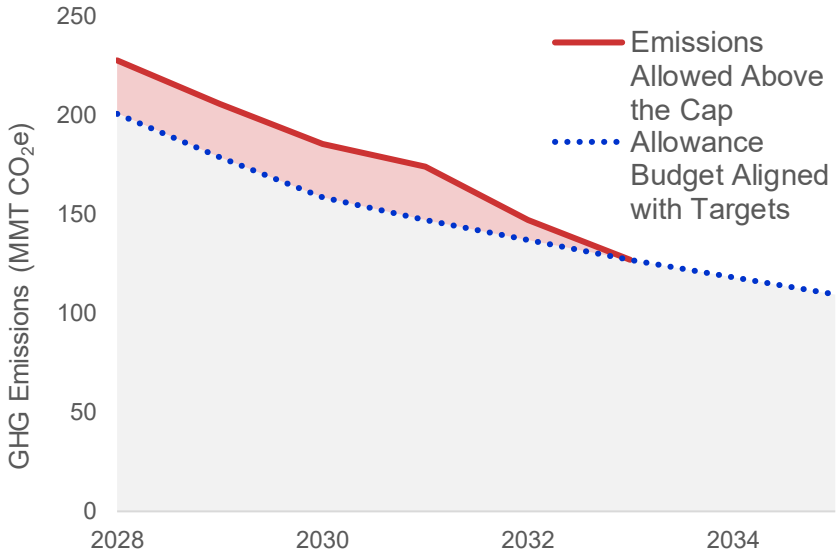
iii. CARB's April Proposal effectively erases the 118.3-million-ton reduction, failing to meet the requirements of AB 1207.

As outlined above, CARB has made clear that removing 118.3 million allowances by 2030 is needed to align the program with the state's inventory and climate targets. While the April Proposal appears on paper to retain this same allowance reduction as presented in the ISOR, CARB has simultaneously *created an additional* 118.3 million allowances to fund the Manufacturing Decarbonization Incentive (MDI) Allocation. Indeed, CARB proposes to "populate the Build Up California Reserve Account with 118.3 million allowances, equal to the total number removed from vintage 2027 through vintage 2030 allowance budgets."[13] The result is a net budget reduction of zero: the reductions required to meet the 2030 target can be cancelled out (or undermined) , ton-for-ton, by a new stream of allowances. This is because the April Proposal changes the MDI from *allocating* allowances from the budget to *creating* extra allowances above the budget: CARB clearly states in the April Notice that MDI allowances are to be created "*in addition to* the annual Allowance Budgets"[14] (emphasis added). While these extra allowances are not accounted for in the allowance budgets, they nevertheless "are treated consistently with other California greenhouse gas (GHG) allowances and represent an authorization to emit up to one metric ton of carbon dioxide equivalent."[15] As shown below in Figure 1, introducing additional allowances into the program—each of which permits a covered source to emit one ton of GHG pollution—increases the aggregate level of GHG pollution that is

[8] ISOR, pg. 30.
[9] Id, Table 3, pg. 32.
[10] Id, pg. 329.
[11] Id, pg. 30.
[12] See Cap-and-Trade Program Workshop (July 27, 2023), slides 14 and 22. https://ww2.arb.ca.gov/sites/default/files/2023-07/nc-CapTradeWorkshop_July272023_0.pdf.
[13] April Notice, pg. 10.
[14] Id, pg. 8.
[15] Id, pg. 4.

permitted from covered sources, regardless of when or where those tons of pollution are ultimately emitted. CARB is, in effect, playing whack-a-mole with millions of tons of climate-warming emissions. Moving allowances from one column to another while the total number of tons permitted into the atmosphere stays above the necessary limit is fooling no-one.

Figure 1: Creating 118 million extra allowances effectively increases the emissions cap[16]



CARB asserts that the April Proposal as a whole "maintains the removal of allowances available to the general market during 2027 through 2030 to reflect updates to the GHG Inventory and to support achieving emissions reduction targets as described in the Initial Statement of Reasons."[17] CARB further states that MDI allowances "are only introduced to the market over the time period specified…if eligible facilities demonstrate investments in low-carbon technologies and fuels."[18] This does not change the fact that an allowance authorizes a covered source to emit one ton of GHG pollution; increasing the number of allowances issued under the program allows covered pollution to increase. Although CARB may claim the 118.3-ton removal is still achieved, the *only* way this could be true is if the MDI is *never* utilized and *none* of the 118.3 million additional allowances available for the MDI are actually distributed. This scenario has no basis in reality, nor is it a hypothetical that CARB can rely upon to fulfill its statutory duties.

CARB provides no evidence that they are likely to receive *zero* applications that qualify for the MDI allowances. Indeed, one analysis indicates that up to 27 million more tons of pollution could be allowed *in the first year the MDI is offered* – more than 20% of the total amount budgeted for MDI allocation.[19] With this rate of uptake, all 118.3 million of the extra allowances proposed to be available through the MDI would be distributed by 2032.

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[16] In this chart, the 118 million allowances created above the cap via the MDI are assumed to be distributed at a rate of 27 million allowances per year until they are exhausted. This rate of uptake is based on an April 2026 analysis by Clean and Prosperous California. At this rate, all 118 million allowances are added to the program by 2032.
[17] April Notice, pg. 10.
[18] Id.
[19] Clean and Prosperous California, "Estimating the Uptake of CARB's Proposed Manufacturing Decarbonization Incentive" (April 23, 2026). This analysis estimates that up to 27 million allowances could be distributed through the MDI in its first year, 2028.

Even if the MDI may not be fully utilized (although analysis suggests it will be), the potential for the program to permit GHG pollution to increase above the necessary cap is counter to CARB's statutory obligations. CARB may argue there is no guarantee the MDI will erase the 118.3 million reductions needed to align with the 2030 target because these extra allowances are *offered*—but not *guaranteed* to re-enter the market or to be used for compliance. However, the fact that the April Proposal creates only a *risk* of erasing the necessary reductions makes little difference: CARB's statutory obligation is to adopt a Cap-and-Invest regulation that "ensures" aggregate GHG pollution from covered sources is reduced in line with the state's climate targets.[20] The possibility that covered sources may not *use* all the compliance instruments available in the market has no bearing on the fact that *offering* more compliance instruments still permits an unacceptable increase in GHG pollution levels. Just as it is not a viable strategy to adopt an emissions cap that is twice the level of the 2030 target and cross our fingers in the hopes that covered sources will not use all of the available allowances, it is also not credible for CARB to claim a 118.3-million-ton reduction is still achieved if it offers to create allowances that permit a 118.3-million-ton increase in pollution. Rolling the dice in the hopes that these additional allowances are never distributed or used is not a viable strategy for CARB to satisfy its statutory obligation to adopt a Cap-and-Invest regulation that "ensures" covered emissions are reduced, at a minimum, in line with the state's 2030 and 2045 climate targets.[21]

Furthermore, CARB's commitment to "monitor, evaluate, and report publicly on the use of the incentive fund and statewide emissions trends to ensure the state remains on track"[22] does not fulfill CARB's statutory obligation to "adopt a regulation that…ensures*"* covered emissions decline, at a minimum, in line with the state's climate targets.[23] It is not sufficient for Staff to monitor and evaluate whether the MDI erodes the reductions needed for the program to align with California's 2030 climate target – the *regulation itself must ensure* this outcome does not occur. Calibrating the emissions cap to meet the state's climate targets *is how CARB can ensure the state remains on track* – and is CARB's statutory duty.

CARB must *adopt a regulation that ensures* covered emissions are reduced in line with the state's climate targets. CARB has identified a 118.3-million-ton reduction from 2027-2030 budgets as the *minimum* necessary to align the program with a correct accounting of the state's emissions and target levels. If CARB 'removes' these 118.3 million allowances from the budget while simultaneously creating an equivalent volume of additional compliance instruments, as proposed, then the necessary reductions are erased, and the program allows GHG pollution from covered sources to be higher than what the state's own calculations indicate are aligned with the climate targets. Adopting such a proposal clearly runs counter to CARB's statutory obligations under AB 1207 to "adopt a regulation that…ensures that programwide aggregate emissions from covered sources, at a minimum, decline with the [2030 and 2045 statutory emission reduction targets]."[24] CARB must calibrate the emissions cap to align with achievement of the 2030 and 2045 targets—it cannot permit higher GHG pollution levels and simply hope the increased pollution will not materialize.

CARB may claim that its April Proposal still aligns with the state's 2030 climate target, but this cannot be proven true so long as the regulation allows for the creation of additional compliance instruments above the necessary cap. If CARB truly believed the MDI to be compatible with the

[20] Health and Safety Code Section 38562(c)(2)
[21] Id.
[22] CARB, "Manufacturing Decarbonization Incentive Fund Frequently Asked Questions," (April 2026), pg. 2.
[23] Health and Safety Code Section 38562(c)(2)
[24] Id.

118.3 million reductions, then it would have no problem allocating allowances to the MDI from below the cap.

b. CARB's sudden addition of 118.3 million new compliance instruments to fund the MDI via the proposed Build Up California Reserve Account raises concerns about fairness and scope.

CARB's April Proposal for funding the MDI through a new Build Up California Reserve Account also raises serious concerns about scope and fairness. In the January notice and ISOR, CARB did not alert the public that this rulemaking could be used to create a new pool of 118.3 million compliance instruments outside of the proposed allowance budget. Rather, CARB explicitly identified in the ISOR that in the "most significant" piece of this program update, staff were proposing "*more stringent allowance budgets* to reflect recent updates to the GHG Emission Inventory and to *ensure emissions reductions in support of State goals*"[25] (emphasis added). Further, the ISOR referenced the clear need, identified by the 2022 Scoping Plan Update, "to increase ambition to be on track for the 2045 targets."[26] In CARB's initial description of the newly proposed MDI, they used "future vintage year allowances for Incentive Allocation," providing additional support for industry from within the existing allowance budget.[27] Nothing in CARB's January proposal or earlier regulatory materials pertaining to this rulemaking indicated that CARB was considering *creating additional emissions allowances above the cap*. This is a significant deviation from what could reasonably have been expected from this rulemaking.

The negative impacts of this change would undermine the core functions of the Cap-and-Invest program, allowing increased climate pollution, depressing allowance prices, and diverting revenue from critical climate projects and ratepayer relief programs. Based on CARB's January proposal, members of the public had no way of knowing that CARB would drastically alter the proposal in this complex and consequential way. A 15-day comment period is insufficient and does not provide the public with a fair opportunity to understand and evaluate the proposal or provide comprehensive comments.

c. Increasing the emissions cap by 118.3 million allowances leads to a market oversupply that puts affordability benefits at risk.

Cap-and-Invest offers an important opportunity to improve affordability for California families, particularly by raising revenue that funds bill credits on residential utility bills. The affordability gains of the program rely on a functioning allowance market that generates sufficient auction revenue to fund utility bill credits and GGRF investments. That market functionality depends on having an allowance cap that is sufficiently stringent to create meaningful demand for allowances. When oversupply depresses prices and reduces auction demand, revenue is reduced and the affordability benefits funded by that revenue shrink. The allowance price at the last four auctions has been at or near the floor, with one auction under-subscribed.[28] Covered polluters are already paying the minimum possible price for their emissions, resulting in an estimated $3 billion in lost GGRF revenue in 2025.[29] CARB's April Proposal to add up to 118.3

[25] ISOR, pg. 24.
[26] Id.
[27] Id, pg. 71.
[28] California Cap-and-Trade Program and Quebec Cap-and-Trade System May 2025 Joint Auction #43 Summary Results Report. https://ww2.arb.ca.gov/sites/default/files/2025-05/nc-may_2025_summary_results_report.pdf
[29] Clean and Prosperous California, "Money Left on the Table: Restoring Cap-and-Trade Auction Revenues Through Legislative Reauthorization," (July 2025).

million more allowances into a program with already weak demand is likely to suppress prices, diminish auction revenues that fund GGRF and utility bill credits, and erode significant affordability benefits for households.

Indeed, new modeling from Greenline Insights finds that creating 118.3 million additional compliance instruments above the cap would flood the market, further depressing demand and prices and further reducing the revenue available for not only GGRF investments, but ultimately also the Climate Credit bill savings.[30] Shown below in Figure 2, Greenline Insights finds that if the April Proposal were altered to *permanently remove 118.3 million allowances by 2030* (i.e. by eliminating the MDI), it could deliver over $6 billion in net savings through 2045 to households earning $100,000 or less each year—**but if the new manufacturing incentive is funded by the creation of an extra 118.3 million allowances above the cap, as CARB proposes, those household savings are cut in half through 2045.**[31] This is because the addition of 118.3 million allowances to the market is projected to create an oversupply of allowances that results in more undersubscribed auctions. When auctions are undersubscribed, households may still experience a price pass-through as covered entities continue to face compliance obligations, but the auction revenues that would have been returned to households via GGRF investments and even utility bill credits are potentially reduced or even eliminated.

Moreover, although the April Proposal includes significantly higher electric utility allocation to fund the Climate Credit than the ISOR, households are still projected to be worse off under the April Proposal than under the ISOR proposal, on a cumulative basis through 2045. This is because the near-term cost-savings potential from higher utility allocation in the April Proposal is wiped out by auction revenues projected to be lost in the long-term due to the weaker emissions cap. As illustrated in Fig. 2 below, households earning $100,000 or less end up *worse off, on net through 2045, compared to the ISOR proposal* – losing out on approximately $300 million in cost savings, even after accounting for the proposed increases and improvements to utility allocation. Conversely, if CARB simply eliminated the MDI, the affordability benefits for these California households would be roughly doubled. The effective increase to the emissions cap puts in jeopardy the very household benefits that could be provided through the proposed improvements to utility allocation; **CARB must urgently fix the emissions cap to deliver these cost savings for California families.**

Undersubscription is modeled by Greenline Insights as the point at which the allowance bank becomes larger than projected emissions. At this inflection point, there is already enough supply of allowances in the market to cover the entirety of compliance obligations, and covered entities are modeled to use banked allowances rather than purchase allowances at auction. Greenline Insights projects this inflection point to occur by 2042 under the April Proposal. In this scenario, auction revenues that fund the Climate Credit and GGRF plummet by the early 2040s, and the revenue that is lost during this timeframe wipes out a significant portion of the household benefits that accrued in the near-term. It is important to note that while Greenline Insights models undersubscription as an inflection point occurring in the early 2040s, undersubscribed auctions—and their impact on reducing revenue for the GGRF and Climate Credit—could occur

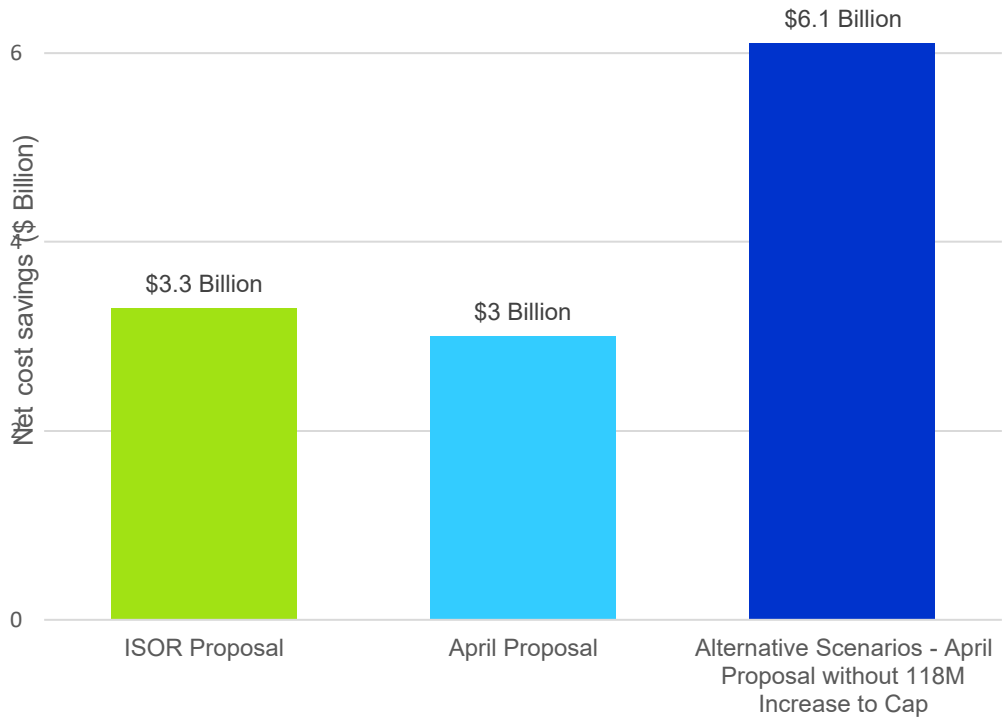
https://static1.squarespace.com/static/681bd7690bc0e20a9d18259b/t/68a10d43b615c61ba41b660a/1755385156000/Money%2BLeft%2BOn%2BThe%2BTable_07.14.2025.pdf.

[30] Greenline Insights, "Analytical Response to CARB's April 14, 2026 Proposal for California's Cap-and-Invest Program." https://www.greenlineinsights.com/carbs-april-14-proposal-analytical-response.

[31] All alternative scenarios modeled by Greenline Insights maintained the same allocations to utilities and output-based allocations to industry as are presented in the April proposal. The only divergence in the alternative scenarios modeled is the level of the emissions cap and the number of allowances allocated to the auction pool for GGRF revenue vs. allocated to fund the Manufacturing Decarbonization Incentive.

sooner. Indeed, one of the auctions last year was undersubscribed, losing revenue for the GGRF—long before when the program is modeled to reach an inflection point where allowance supply will exceed projected emissions. The market is already behaving in a way that indicates an oversupply of allowances; increasing the emissions cap by up to 118.3 million allowances will only worsen the market's imbalance as the allowance supply further outpaces demand. Given this projected oversupply, the market could respond with reduced demand even before the program is flush with allowances, potentially reducing revenue in the near-term. And while consigned allowances are the first to receive revenue when auctions are undersubscribed, the Climate Credit is not immune to losing revenue in the near-term as the market responds to a significant oversupply of allowances.

Figure 2. Cumulative Net Savings Through 2045 to Households Earning $100,000 or less ($B)[32]



The important affordability benefits that CARB has designed into this package are projected against a market that functions as intended; if the new allocation mechanism instead produces the kind of oversupply that keeps prices at the floor and risks under-subscription, those projected household savings may never materialize. CARB cannot credibly claim to be delivering affordability benefits through cap-and-invest while simultaneously undermining the market conditions on which those benefits depend. Preserving the affordability gains in this package requires permanently reducing the 118.3 million allowances from 2027-2030 budgets as CARB had previously proposed.

[32] The household benefits delivered by each of three alternative scenarios modeled is the same ($6.1 B) because each alternative scenario was modeled to permanently remove 118 million by 2030 as compared to CARB's April proposal. Those alternative scenarios have been condensed for clarity in this graph, represented by the bar labeled "Alternative Scenarios - April Proposal without 118M Increase to Cap." A graph comparing each scenario individually can be found on pg. 6 of Greenline Insights' memo.

d. Increasing the cap by 118.3 million allowances reduces GGRF revenue.

GGRF revenues generally are also significantly impacted by CARB's proposal to effectively increase the emissions cap by up to 118.3 million allowances. Greenline Insights estimates that the April proposal substantially reduces GGRF revenue – by $8 billion through 2045 – compared to the ISOR proposal.[33] 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 Proposal. A separate analysis from UC Santa Barbara's Environmental Markets Lab confirms that adding 118.3 million allowances to the cap would reduce auction revenues. If the MDI is fully utilized over the next four years, the analysis finds auction revenues could be cut by $4 billion through 2030.[34] CARB also estimates the value of the MDI at $4 billion.[35]

This projected loss in revenue has serious repercussions for the critical investments that are funded by GGRF, most importantly for community air protection programs created by AB 617, and programs such as the Safe and Affordable Drinking Water Fund. At the exact moment California needs to be strengthening the ability of cap-and-invest to fund climate progress and deliver relief for households, CARB's latest proposal would shift billions of dollars away from household affordability and legislatively authorized climate investments, towards additional subsidies for industry. Fortunately, as modeled and explained in detail in the following section, CARB has several options at its disposal to remedy these design flaws and restore the emissions cap along with the affordability benefits and revenue this program is designed to generate.

e. The proposed addition of 118.3 million compliance instruments above the cap for an industry incentive sets a troubling precedent and hurts confidence in the market.

Beyond its immediate impact on the allowance budget, the creation of new compliance instruments, above the emissions cap, to fund the MDI establishes a troubling precedent. This new proposal indicates that CARB will respond to political pressures by creating additional compliance instruments, rather than setting the emissions cap as directed by the law and allocating the limited supply of allowances from below the cap. If this approach proceeds, it creates a template for any interest group to wage a political pressure campaign in pursuit of similar treatment. This would undermine faith in the market and would upend the market stability, predictability, and rules-based governance that CARB has worked hard to safeguard for over a decade. CARB should be deeply cautious about the precedent set by the creation of the MDI, and the Board should be explicit that the creation of additional allowances outside the declining cap is not an acceptable mechanism for funding industrial decarbonization incentives.

II. CARB should remove the MDI from this proposal to ensure alignment with the 2030 climate target, increase affordability benefits, and increase GGRF revenue.

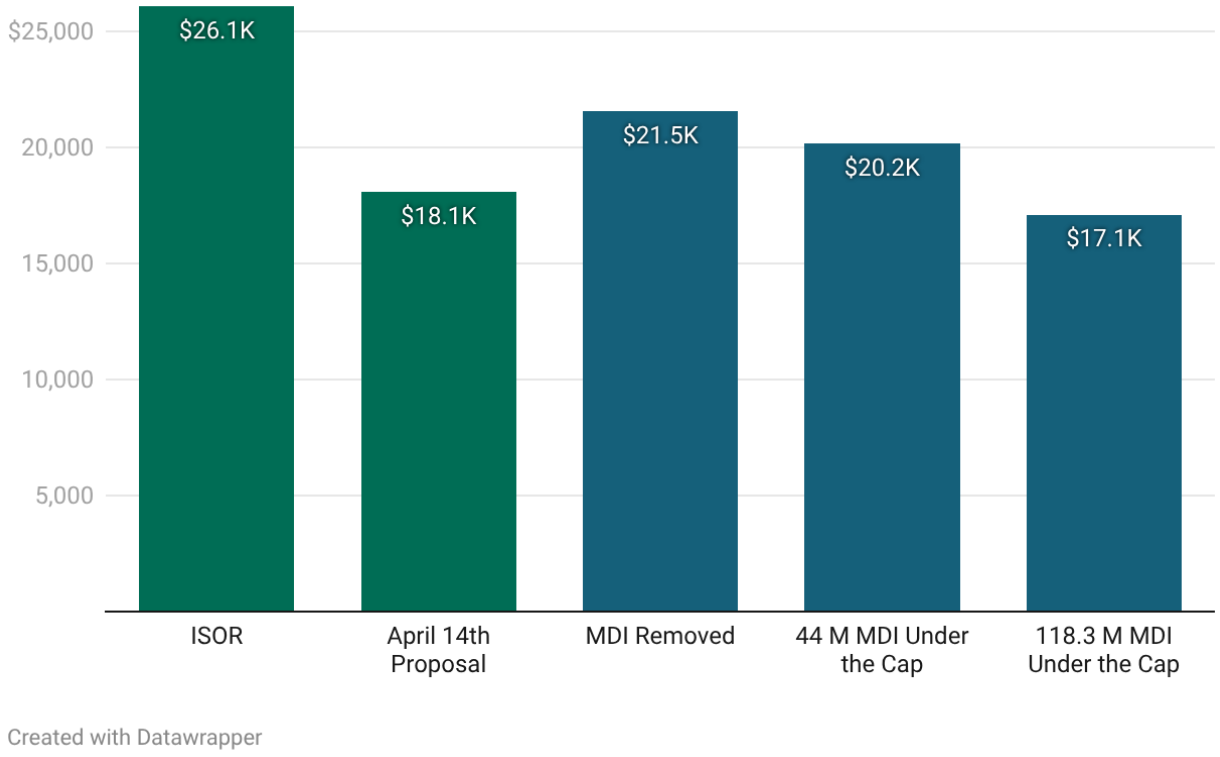
[33] Greenline Insights, "Analytical Response to CARB's April 14, 2026 Proposal for California's Cap-and-Invest Program," Figure 2.
[34] Meng and Wingenroth, "Potential Lost Cap-and-Invest Revenue Under the Manufacturing Decarbonization Incentive," Environmental Markets Lab, UC Santa Barbara (April 2026). https://emlab.ucsb.edu/sites/default/files/documents/2026_capinvest_manufacturing_decarbonization_incentive.pdf.
[35] CARB, "Manufacturing Decarbonization Incentive Fund Frequently Asked Questions," (April 2026).

a. Removing the MDI improves affordability and increases GGRF revenue.

CARB's April Proposal effectively increases the emissions cap by 118.3 million allowances—erasing the removal of 118.3 million allowances from program budgets, which is the minimum needed to align with the state's climate targets. CARB must revise its proposal to plug this leak in the program's cap.

New modeling from Greenline Insights shows that removing the MDI from this proposal is the solution that delivers the greatest combination of affordability benefits and GGRF revenue while ensuring emissions decline at the pace and scale required. In this scenario, allocation to utilities and to industry via output-based allocation are the same as presented in CARB's April Proposal; the only change is that the MDI is removed—thereby ensuring that the cap is actually set to the levels stated in the proposed allowance budgets. By preserving the tighter emissions cap, this scenario delivers over twice the household affordability benefits as CARB's April Proposal. In addition, removing the MDI results in the highest GGRF revenue out of the alternative scenarios modeled to preserve the emissions cap: **generating approximately $3.4 billion more revenue for GGRF compared to CARB's April Proposal.**

Figure 3. Cumulative GGRF Revenue ($M) by Scenario Through 2045



b. Design issues beyond cap integrity require substantial revision before the MDI is ready for implementation.

As currently structured, the MDI is not ready for implementation. The proposal as written lacks the foundational design features necessary to ensure smart investment and appropriate stewardship of the Cap-and-Invest program's limited resources. In addition to redesigning the MDI allowances to ensure they are accounted for *under* the cap, the MDI itself still requires

significant structural improvements. The following issues reflect the fact that the MDI requires substantially more design work, analytical support, and public input than this rulemaking timeline permits:

- **The MDI lacks a competitive allocation process or a verified abatement requirement.** The current proposal awards the incentive allocation based on project proposals, with no competitive ranking, no minimum abatement threshold, and no meaningful mechanism to verify that promised reductions are actually delivered. As currently proposed, the MDI may simply subsidize investments that were already planned or underway: as UC Berkeley economist Meredith Fowlie describes, "the MDI looks more like a capex reimbursement program than a GHG abatement procurement mechanism."[36] At minimum, the MDI should be restructured as a merit-based, competitive allocation in which projects are ranked and awarded based on their projected abatement potential, prioritizing those that offer the greatest emissions reductions per allowance allocated or that deploy innovative industrial decarbonization technologies not yet in widespread commercial operation. Projects should be required to demonstrate that the abatement they will deliver is new and additional. An industrial decarbonization incentive that subsidizes activities that a facility would have undertaken anyway provides no environmental benefit while consuming allowance value that could otherwise support the affordability and climate benefits delivered by this program.
- **The MDI has no accountability mechanism for underperforming projects, with no clear authority for CARB to recover allowances if a project fails to deliver its projected reductions.** Under the current proposal, allowances are awarded based on project proposals—this structure lacks clear authority for CARB to recover the value of those allowances if a project fails to deliver its projected emissions reductions. CARB should establish explicit authority to claw back allowances or require equivalent reductions from any project that does not achieve the abatement it claimed in its application. Without this mechanism, the MDI is an allowance giveaway with no enforceable connection to actual emissions outcomes.
- **The MDI's hydrogen eligibility criteria are insufficiently developed to manage risks.** Hydrogen eligibility must be subject to strict guardrails on leakage, usage, and accounting. As EDF detailed in our March 9th comments responding to the ISOR, hydrogen deployment can range considerably in its climate impacts, being better or worse than conventional fossil fuels. Given this variability, hydrogen eligibility should be contingent upon meeting specific guardrails to minimize its risks and maximize its benefits. Hydrogen is itself an indirect greenhouse gas, with a warming potential 30-40 times that of CO_2 over a 20-year period and 8-12 times over a 100-year period[37]. It can be both intentionally released during production (i.e., through venting and purging) and unintentionally emitted (i.e., through leakage) throughout its supply

[36] Fowlie, Meredith. "A Stress Test for California Carbon Pricing" Energy Institute Blog, April 27, 2026, https://energyathaas.wordpress.com/2026/04/27/a-stress-test-for-california-carbon-pricing/.

[37] Warwick, N. J., et al (2023). Atmospheric composition and climate impacts of a future hydrogen economy. Atmospheric Chemistry and Physics, 23(20), 13451–13467. https://doi.org/10.5194/acp-2313451-2023; Sand, M. et al. A multi-model assessment of the Global Warming Potential of hydrogen. Commun Earth Environ 4, 203 (2023). https://doi.org/10.1038/s43247-023-00857-8; Derwent, R. (2023). Global warming potential (GWP) for hydrogen: Sensitivities, uncertainties and meta-analysis. International Journal of Hydrogen Energy, 48(22), 8328–8341. https://doi.org/10.1016/j.ijhydene.2022.11.219; Hauglustaine, D., Paulot, F., Collins, W., Derwent, R. G., Sand, M., & Boucher, O. (2022). Climate benefit of a future hydrogen economy. Communications Earth & Environment, 3(1). https://doi.org/10.1038/s43247-02200626-z

chain, causing atmospheric warming[38]. Upstream methane emissions from fossil-based hydrogen vary substantially by basin[39], and a combination of high methane and hydrogen emissions can entirely eliminate climate benefits and even increase near-term warming by up to 50% compared to the fossil fuel applications being replaced[40]. Carbon capture rates also matter greatly for fossil-based hydrogen's climate impact, where a rate of 60% can reduce the climate benefits relative to a 98% capture rate by 15-50% in the near-term and 20-60% in the long-term. "Nameplate" capacities are also misleading given that CCS systems often capture carbon dioxide at lower rates due to a variety of factors. Hydrogen is also energy intensive to produce, making it significantly less efficient than direct electrification[41]. To avoid these adverse impacts, which could in worst-case scenarios even violate the integrity of the emissions cap, CARB should require that hydrogen-related projects seeking MDI eligibility meet the following conditions:

- Fully account for upstream methane emissions of fossil-based hydrogen by utilizing basin-specific leakage rates.
- Demonstrate high rates of carbon capture and permanent sequestration, with robust health, safety, and leakage guardrails[42]. Permanent sequestration must be demonstrated by following best practices like those outlined in California's Low Carbon Fuel Standard[43], the U.S. Environmental Protection Agency's Greenhouse Gas Reporting Program (GHGRP) Subpart RR[44], or the EU's CCS Directive[45]. Reliance on GHGRP alone should not be considered given risk of GHGRP rollback. As with all emissions accounting, CCS data must be reported, verified, and made publicly available.
- Hourly matching of future renewable electricity use to hydrogen production. Both monthly and annual matching fail to capture the fluctuations of renewables during the day and would require additional adjustments (e.g., utilizing batteries, restricting the full load hours of electrolysis) to ensure a lower emissions outcome[46]. Hourly matching is already required under 45V beginning in 2030, therefore aligning MDI requirements accordingly may lessen reporting burden for manufacturers seeking eligibility.

[38] Environmental Defense Fund (2023). Rule #1 of deploying hydrogen: Electrify first. Energy Exchange. Available at: https://blogs.edf.org/energyexchange/2023/01/30/rule-1-of-deploying-hydrogen-electrify-first/.
[39] Environmental Defense Fund. (2024). New Data Show U.S. Oil & Gas Methane Emissions Over Four Times Higher than EPA Estimates, Eight Times Greater than Industry Target. https://www.edf.org/media/new-data-show-us-oil-gas-methane-emissions-over-four-times-higher-epa-estimates-eight-times
[40] Sun, T, et al, Climate impacts of hydrogen and methane emissions can considerably reduce the climate benefits across key hydrogen use cases and time scales, Environ. Sci. Technol. 2024, https://pubs.acs.org/doi/10.1021/acs.est.3c09030
[41] Environmental Defense Fund (2023). Rule #1 of deploying hydrogen: Electrify first. Energy Exchange. Available at: https://blogs.edf.org/energyexchange/2023/01/30/rule-1-of-deploying-hydrogen-electrify-first/
[42] Environmental Defense Fund. "Effective CO2 Management." BetterHubs, betterhubs.edf.org/core-objectives/effective-co2-management/
[43] California Air Resources B. Carbon Capture and Sequestration Protocol under the Low Carbon Fuel Standard. 2018.
[44] Environmental Protection Agency. Subpart RR – Geologic Sequestration of Carbon Dioxide. www.epa.gov/ghgreporting/subpart-rr-geologic-sequestration-carbon-dioxide
[45] European Commission. Legislative Framework. climate.ec.europa.eu/eu-action/industrial-carbon-management/legislative-framework_en
[46] Environmental Resource Management (2024) Assessment of Grid Connected Hydrogen Production Impacts Part I Literature Review and Framework Key Insights. https://www.erm.com/globalassets/documents/publications/assessment-of-grid/assessment-of-grid-connected-h2-electrolysis-impact_part-i_lit-review_final.pdf

- Demonstrate that MDI manufacturing facilities and hydrogen source facilities have established and enforced hydrogen leak detection and repair (LDAR) plans.
- Document that electrification is not technically or economically feasible to ensure hydrogen is used where most needed. Electrification is often preferable to hydrogen use as it requires significantly less energy, avoids hydrogen emissions, and delivers more direct and verifiable emissions reductions.
- In determining eligibility for MDI, conduct carbon intensity calculations independently for each hydrogen production process, consistent with 45V, to avoid emissions accounting gamesmanship. This can avoid outcomes where a near-zero or negative emissions feedstock / production process is utilized to artificially obscure GHG emissions of a high-polluting feedstock.

These are not minor implementation details; they reflect the fact that the MDI is a novel and consequential program feature that requires substantially more development before it is ready for implementation.

c. The existing output-based allocation system already incentivizes industrial GHG abatement; the MDI is not necessary to drive near-term reductions.

CARB argues in the April Notice that introducing up to 118.3 million allowances above the cap to fund the MDI is necessary to increase leakage prevention and accelerate industrial decarbonization.[47] However, Cap-and-Invest already has substantial leakage prevention features and decarbonization incentives that are delivering results while operating within the program's allowance budgets. CARB can postpone consideration of the MDI to a future rulemaking with minimal opportunity cost to industrial abatement and leakage prevention because of the efficacy of these existing tools, allowing sufficient time to design the MDI with appropriate guardrails and allocation from under the emissions cap.

California already has a proven tool to drive industrial abatement: a well-designed cap on emissions. There is no doubt that GHG abatement in the industrial sector is essential. The industrial sector will need to significantly reduce emissions, including in the near-term, for California to be on track with its climate targets; indeed, the 2022 Scoping Plan scenario models a reduction in industrial-sector emissions of 55% by 2035 (relative to estimated 2026 emissions).[48] This is precisely why CARB must preserve an effective emissions cap aligned with the state's targets. Cap-and-Invest has already delivered meaningful emissions abatement from industrial facilities. For example, one study found that Cap-and-Invest reduced GHG, PM2.5, PM10, and NOx emissions by 3–9% annually between 2012 and 2017 at the sampled industrial facilities regulated only by the program, showing clear impact even outside other state climate policies.[49] The ISOR emphasizes the importance of the emissions cap in driving abatement, stating the proposed changes to annual allowance budgets are "expected to bolster the Program price signal and increase the incentive for covered entities to invest in GHG emissions reduction activities, aligned with the accelerated pace of decarbonization called for in the 2022

[47] April Notice, pg. 10.
[48] See AB 32 GHG Inventory Sectors Modeling Data Spreadsheet, under the "Emissions" tab. https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents. The Scoping Plan Scenario models industrial emissions declining from 65 MMT CO_2e in 2026 to 29 MMT CO_2e in 2035.
[49] Hernandez-Cortes, Danae, and Kyle C. Meng. "Do environmental markets cause environmental injustice? Evidence from California's carbon market." *Journal of Public Economics* 217 (2023): 104786. https://doi.org/10.1016/j.jpubeco.2022.104786.

Scoping Plan Update."[50] Industrial decarbonization is better served by a stronger, properly calibrated emissions cap than by an ill-defined, time-limited incentive program. A tighter cap provides covered industrial entities with exactly what they need to make long-term capital investment decisions: a clear, durable, legally grounded signal that emissions reductions are required and that the cost of delay will rise over time.

Additionally, the April Notice asserts that providing up to 118.3 million allowances above the cap to fund the MDI is "necessary to increase leakage protection for industrial facilities that invest in California."[51] Yet evidence is not provided to justify why such a dramatic increase in allowance allocation to some industries is necessary to prevent leakage. CARB's own analysis has found that the existing output-based allocation system has been successful at protecting against leakage[52] while simultaneously driving abatement. Moreover, the April Proposal *already* substantially increases allowance allocation to industry, before factoring in extra allowances available through the MDI. **With the MDI, 2028 allowance allocation to refineries could be over 1.5 times higher than the refinery's actual GHG emissions.**[53] The case has not been made for layering an untested incentive mechanism – one that comes with significant cap integrity risks and insufficient guardrails – on top of a proven system for incentivizing industrial abatement and preventing leakage.

Removing the MDI from this rulemaking would not foreclose the possibility of implementing this incentive in the future. If CARB adopts the post-2030 allocation rulemaking no later than 2028, the MDI could still be implemented for budget year 2029, **representing a delay of only one year for when the MDI is offered**. A one-year delay to improve the design is far preferable to implementing a version of this mechanism that is not ripe for implementation because it undermines cap integrity, lacks sufficient guardrails, and has not received adequate public review and analysis.

d. Removing the MDI from this rulemaking is the most straightforward way to fix the emissions cap – allowing CARB to finalize rules that comply with statute this spring.

CARB must revise its proposal and finalize regulations this spring that permanently reduce 118.3 million allowances by 2030. It is not a viable option for CARB to move forward with the current version of the MDI, as proposed in April, in the hope that increased emissions will not, in fact, materialize, or in the hope that a future rulemaking can correct course. Even if CARB were to commit to fix the emissions cap in a 2028 rulemaking, this would leave only two budget years from which CARB could remove allowances by 2030—likely too little too late to reduce the emissions cap sufficiently to comply with the 2030 statutory target. It will also likely be more difficult and more expensive to seek deeper reductions in the future to compensate for increased near-term emissions. Moreover, CARB must adopt rules that comply with the statute; as detailed in an earlier section, a Cap-and-Invest regulation that leaves it up to chance whether covered emissions will be reduced in line with the climate targets is inconsistent with CARB's clear statutory mandates.

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[50] ISOR, pg. 24.
[51] April Notice, pg. 10.
[52] CARB Cap-and-Invest Workshop (October 2025), slide 35. .
[53] Analysis by Meredith Fowlie finds the MDI could raise total allocation to refineries to over 6.1 allowances per barrel; the benchmark GHG emissions rate for refineries is 3.89 tons per barrel. *Fowlie, Meredith.* "A Stress Test for California Carbon Pricing" *Energy Institute Blog,* April 27, 2026, https://energyathaas.wordpress.com/2026/04/27/a-stress-test-for-california-carbon-pricing/.

Given the necessity for the Board to approve a regulation this spring that complies with statute, EDF urges CARB to revise its proposal to remove the MDI from this rulemaking. Removing the MDI is the option best suited to the practical constraints of this rulemaking. CARB must finalize and approve these regulations in time for implementation this fall. Given that timeline, removing the MDI is a targeted, surgical revision that eliminates the most significant source of cap integrity risk in the April Proposal without requiring CARB to resolve the full range of design questions the MDI raises. These questions deserve and should receive more thorough treatment in a future rulemaking. This option gives CARB the clearest path to completing this rulemaking on schedule while delivering on its core obligations: protecting program integrity, ensuring that the required allowance retirements are real and permanent, and providing the regulatory certainty that market participants need.

III. If CARB retains the MDI in this rulemaking, it must revise its proposal to ensure MDI compliance instruments do not erode the necessary emissions reductions.

If CARB retains the MDI in this rulemaking, it must make critical revisions for the MDI to be compatible with the program's emissions cap. In this case, if the MDI program moves forward in this rulemaking, CARB must either shrink the MDI and fund it through allowances allocated from below the cap, or implement a one-for-one allowance retirement policy for each MDI allowance released into the market.

a. Option 1: Revert to the ISOR's proposal for the MDI, allocating fewer allowances to the MDI and pulling these allowances from below the cap.

If CARB retains the MDI in this rulemaking, the most straightforward revision that would make the MDI consistent with the state's emissions targets is to scale down the MDI—starting it as a pilot program to test over the next few years—and allocate that scaled down version from beneath the cap. If CARB pursues this option for MDI implementation, it must implement a clear upper limit on the total number of allowances that can be diverted to the MDI.

Greenline Insights modeled a scenario in which 44 million allowances[54] are reserved from near-term allowance budgets to be allocated to the MDI (i.e. allocated from "under the cap").[55] In this scenario, approximately 15 million allowances are reserved from each allowance budget year between 2027-2029, representing a strategy for CARB to populate the MDI with a smaller number of allowances as a pilot program and reevaluate in the 2028 rulemaking whether to add allocation funds to the MDI from post-2030 allowance budgets. Notably, this scenario results in total allocation to the MDI on par with CARB's estimate in the ISOR of 40 million allowances.[56]

This scenario is modeled to maintain the same allowance allocations to utilities and to industry (via output-based allocation) as in the April Proposal; the only difference from the April Proposal is the level of the emissions cap and the number of allowances from the cap that are allocated

[54] 44 million is the total amount of allocation in a scenario in which the MDI is allocated evenly over its years of implementation – at the same rate as if 118.3 million were spread out over the proposed 8 year period – but condensed to only 2027-2029 budget years.
[55] All alternative scenarios modeled by GLI maintained the same allocations to utilities and output-based allocations to industry as are presented in the April Proposal. The only divergence in the alternative scenarios modeled is the level of the emissions cap and the number of allowances allocated to the auction pool for GGRF revenue vs. allocated to fund the Manufacturing Decarbonization Incentive.
[56] The ISOR states that "the exact amount of Incentive Allocation is unknown but could exceed a total of 40 million allowances over the proposed 12-year period." ISOR, pg. 71.

to the MDI rather than to generate GGRF revenue. Although this scenario allocates 44 million allowances from below the cap to the MDI—allowances that otherwise would have generated revenue for GGRF—it nevertheless is projected to **raise $2.1 billion more in GGRF revenue through 2045 compared to CARB's April proposal.** This is because the effective increase to the emissions cap in the April Proposal is projected to depress allowance prices and lead to undersubscribed auctions. The alternative scenario demonstrates that *reducing the emissions cap can increase GGRF revenue*—even if there is a smaller number of state-owned allowances available to generate auction revenue for GGRF.

Moreover, just as in the other alternative scenarios modeled to preserve the 118-million-ton reduction, **in this scenario households earning $100,000 or less see $6.1 billion in net benefits over the course of the program – over twice as much value relative to CARB's April Proposal.**

b. Option 2: Implement a one-for-one allowance retirement policy for each MDI allowance released into the market.

If CARB retains the April Proposal's approach to the MDI, including the creation of up to 118.3 million new compliance instruments, there is a second path to restoring cap integrity that draws directly on a mechanism CARB has already proposed in this rulemaking. In its approach to bringing offsets "under the cap," in line with legislative direction in AB 1207, CARB established the practice that each offset used for compliance should be matched by the retirement of a corresponding allowance from the program budget, ensuring that offset use does not result in an increase in covered emissions that would exceed the emissions cap. The same framework can be applied to MDI compliance instruments. This approach would reflect the uncertainty around actual uptake of the MDI—if some MDI allowances are not distributed, then CARB would not need to retire a corresponding allowance from below the cap. But if all available 118.3 million MDI allowances are issued, CARB has a built-in mechanism to account for each additional ton of GHG pollution that is authorized by an MDI allowance.

It is worth noting that while the principle of one-for-one retirement of "offsets under the cap" maps usefully onto this potential solution, it is even *more important* in the case of the MDI that equivalent allowances are removed from circulation because the new MDI compliance instruments (unlike offsets) don't represent any abatement that is *additional* to the existing program. The MDI would fund emissions reductions in a sector already covered under the Cap-and-Invest regulation—so even if this funding mechanism drives reductions in industrial sources, any abatement secured from a covered industrial source frees up allowances that enable a different covered source or sector to emit more pollution. Issuing a new compliance instrument on top of that would then simply enable another ton of pollution. In short, incentivizing reductions from covered sources causes a "waterbed effect" – unless the cap is tightened, reductions in one part of the program enable emissions elsewhere in the program to increase. Conversely, offsets are designed to drive additional reductions because they fund abatement activities in uncovered sectors. As noted above, creating additional compliance instruments to reward hypothetical emissions reductions from *covered sources*, without a corresponding retirement of equivalent allowances, simply allows aggregate pollution in the program to increase.

Under this one-for-one retirement approach, CARB could retain the April Proposal to create new MDI compliance instruments, but require that each instrument issued triggers the retirement of a corresponding allowance from the allowance budget. This would preserve the cap's integrity by ensuring that every additional compliance instrument in circulation as a result of the MDI is

matched by a permanent allowance removal. Similar to how CARB has proposed to implement this framework for offsets, CARB could reserve allowances from the allowance budget each year to account for potential MDI use, and then retire allowances from that reserve fund when MDI allowances are actually issued. For example, CARB could reserve approximately 14.8 million allowances from the budget each year between 2028-2035, corresponding with the full 118.3 million MDI allowances spread evenly over the eight years in which they are available. When MDI allowances are issued to an industrial entity, CARB would then retire an allowance from the reserved pool in order to maintain the necessary cumulative allowance budgets. This approach would allow CARB to move forward with an MDI approach that accounts for actual MDI allowance uptake, while smoothing the impact on the market via steadily reserving allowances—just as CARB proposes to do for offsets accounting.

Greenline Insights modeled a scenario that reflects this approach, where 14.8 million allowances are allocated from below the emissions cap each year between 2028 and 2035 to fund the MDI. Just as in the other modeled scenarios where the cap is preserved, household affordability benefits are substantially higher than in CARB's April Proposal. If the 118.3 million allowances offered through the MDI are fully utilized, this scenario generates $17.1 billion for GGRF through 2045—representing a $1 billion cumulative reduction through 2045 compared to the April Proposal, which is projected to generate $18.1 billion for GGRF through 2045. Importantly, this impact to GGRF is the upper bound—it would only occur if all of the 118.3 million reserved allowances are actually awarded to an MDI project. If fewer MDI allowances are used, the reserved allowances could be returned to auction pools in subsequent auctions.

This one-for-one allowance retirement approach would effectively preserve the needed 118.3 million cumulative reductions. However, we note that this approach is less optimal than removing the MDI from this rulemaking or bringing it below the cap and scaling it back—both of which would *increase,* rather than decrease, cumulative revenue to GGRF through 2045 compared to the April Proposal.

IV. Rather than effectively increasing the cap, CARB should pursue *greater reductions* to the 2027-2030 allowance budgets and adopt a tighter post-2030 emissions cap than proposed.

a. CARB can pursue an increase to the proposed 118.3 million reduction while still ensuring the program delivers meaningful affordability benefits to Californian households.

As EDF presented in our March comments responding to the ISOR, CARB can pursue a more ambitious reduction to the 2027-2030 allowance budgets – removing 180 million allowances rather than the 118.3 million proposed – while still delivering crucial affordability benefits to households. Modeling from Greenline Insights found that removing 180 million allowances through 2030 would deliver over $860 million in net savings to California households earning $100,000 or less per year. Lower-income families – those earning $70,000 or less – would see the greatest gains, with $2.8 billion in projected benefits through 2045. This more ambitious scenario also would have generated over $1 billion more in revenue for the GGRF compared to the ISOR proposal, all while keeping allowance prices well within the program's price containment boundaries. This means CARB can pursue stronger climate action, delivering the near-term emissions reductions that are urgently needed to avert the worst impacts of climate change, while also keeping prices under control and delivering on household affordability.

CARB can and should be making *greater* budget reductions from the 2027-2030 allowance budgets than the 118.3 million removals proposed in the ISOR. Instead, the latest proposal from CARB cancels out even those minimum required reductions. As described above, the 118.3 million allowances CARB proposes to remove from allowance budgets are the methodological floor required to account for GHG inventory updates and keep the program on track with California's 2030 statutory target. The April Proposal does not meet that floor because it simultaneously introduces a new allocation mechanism that creates a volume of compliance instruments sufficient to cancel out the proposed reductions. EDF urges CARB to finalize rules that at minimum permanently remove 118.3 million allowances from the 2027-2030 budgets and, consistent with the evidence presented in these and prior comments, pursues the **greater** ambition that modeling shows is both achievable and beneficial.

b. CARB should adopt a tighter post-2030 emissions cap than proposed, with the cap declining more quickly in the early 2030s to maximize cost-effective emissions abatement.

In addition to tightening the near-term cap through 2030, CARB should adopt a post-2030 allowance budget that significantly accelerates reductions, with the cap declining more quickly in the early 2030s than the current proposal, to maximize cost-effective emissions abatement. Even if CARB ultimately removes only the bare minimum of 118.3 million allowances through 2030 necessary to align the program with California's statutory 2030 climate target, **EDF urges CARB to still achieve *at least* an additional 221 MMT CO_2e cumulative abatement – *beyond the reductions proposed by the ISOR*** – by tightening the post-2030 emissions cap.

Modeling from Greenline Insights (GLI) indicates there is still significant low-cost abatement that can be achieved in the 2030s, beyond the ISOR, and even beyond the tighter cap trajectories GLI modeled. When evaluating the ISOR proposal under a range of emissions demand scenarios, GLI found that allowance prices are projected to track closely to the price floor or rise only modestly above the floor until 2040 or later.[57] Under GLI's Higher Ambition Scenario #2, which removes approximately 180 MMT CO_2e from the cap through 2030 and achieves 221 MMT CO_2e in cumulative reductions through 2045 relative to the ISOR, allowance prices remain well below even the first tier of the APCR.[58] These low allowance price projections underscore the opportunity for CARB to further tighten the post-2030 emissions cap and drive additional, cost-effective abatement.

In this rulemaking, CARB proposes to establish an allowance budget that declines at the same pace for the 15 years between 2030 and 2045,[59] but the cap need not decline at the same rate over a 15-year period. Reducing the cap at a faster rate in the early 2030s would secure additional cost-effective abatement when lower-cost abatement opportunities are more readily available, while giving CARB flexibility to reduce the cap more gradually as the state approaches its 2045 targets to reduce gross emissions by 85% and reach carbon neutrality. Pursuing a more stringent cap decline in the early 2030s will also bring the state closer to meeting its 40% by 2030 statutory target, as compliance entities accelerate their reductions and bank allowances for future use when the cap becomes tighter.

[57] Greenline Insights, "Analytical Response to CARB's ISOR Proposal for California's Cap-and-Invest Program" (March 2026), p. 16.
[58] Id, p. 10.
[59] Appendix A-1 Proposed Regulation Order, Table 6-2.

CARB should also evaluate scenarios for further tightening the post-2030 cap to recoup reductions missed due to the delayed rulemaking timeline. CARB initially outlined proposals that would have removed allowances from the cap starting in 2025, with the most ambitious scenario reducing the cap by as much as 390 MMT CO_2e through 2030. [60] In the 2024 SRIA, CARB staff proposed removing approximately 265 MMT CO_2e from the allowance budget through 2030, indicating this level of near-term ambition was necessary to align with the 2022 Scoping Plan[61] and the state's 2045 climate targets.[62] The ISOR's proposal to remove only 118.3 MMT CO_2e through 2030 – less than half of what CARB argued was necessary, and solely to account for methodology updates to the GHG Inventory[63] – represents a significant retreat from that ambition. CARB's most recent April Proposal would erode even those minimal reductions further. Greater emissions reductions – as outlined in the 2022 Scoping Plan and in the 2024 SRIA – are still essential for California to cost-effectively meet its climate targets; tightening the post-2030 program cap presents an opportunity for CARB to secure as many of these reductions as possible even if delayed.

V. CARB must do a new rulemaking to remove additional allowances from post-2030 budgets, address post-2030 allocation to industry, utilities, and revise the Manufacturing Decarbonization Incentive, with final regulations adopted by 2028.

It is clear from the April Proposal that major issues remain outstanding for the implementation of Cap-and-Invest, particularly after 2030. These include issues that CARB has appropriately proposed to defer to a future rulemaking, such as post-2030 allowance allocations to industry and utilities. In addition, if CARB does not adopt tighter post-2030 allowance budgets in this rulemaking, it must pursue greater reductions when it considers how to allocate post-2030 allowances. **EDF urges the Board to include in its resolution adopting the Cap-and-Invest regulation a commitment to adopt rules by 2028 that address the following critical issues:**

- **Significantly tighten the post-2030 allowance budgets, beyond the current proposals, to maximize cost-effective reductions.** If CARB does not adopt a tighter post-2030 cap in this rulemaking, CARB should, at the very minimum, include language in its resolution when adopting the rule that directs Staff to propose the removal of *at least* an additional 221 million allowances[64] from post-2030 budgets, and to evaluate greater stringency on top of the 221 MMT CO_2e of abatement, in a future rule proposal to be adopted by 2028. These reductions in the allowance budget will help secure additional cost-effective reductions through the Cap-and-Invest program – in line with CARB's statutory obligations[65] – while still providing cost savings to low- and moderate-

[60] See Cap-and-Invest Program Workshop slides (July 2023). https://ww2.arb.ca.gov/sites/default/files/2023-07/nc-CapTradeWorkshop_July272023_0.pdf.
[61] See, e.g., SRIA at p. 10.
[62] See, e.g., Cap-and-Trade Program Workshop slides (July 27, 2023), which described this increased near-term ambition as "supportive of 2045 carbon neutrality pathway in Scoping Plan." https://ww2.arb.ca.gov/sites/default/files/2023-07/nc-CapTradeWorkshop_July272023_0.pdf.
[63] The ISOR explains: "Removing 118 million allowances from 2027-2030 allowance budgets is needed to account for updates to CARB's GHG Emission Inventory." (pg. 30)
[64] This is the cumulative reduction achieved between 2027 and 2045 under Greenline Insights' Higher Ambition Scenario #2. See Greenline Insights, "Analytical Response to CARB's ISOR Proposal for California's Cap-and-Invest Program" (March 2026).
[65] CARB is mandated by statute to adopt a Cap-and-Invest program "that the state board determines will achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions, in the aggregate, from those sources or categories of sources…" Health and Safety Code Section 38562(c)(2)

income families, producing allowance prices well within the program's price containment points, achieving a better balance between allowance supply and demand, and putting California in a stronger position to meet its 2045 climate targets.

- **Calibrate post-2030 industrial allocation to reflect actual leakage risk.** Industrial assistance factors should be aligned with real-world leakage risk to ensure California is on a cost-effective path to meet its climate targets while preserving the competitiveness of emissions-intensive, trade-exposed facilities.

- **Establish post-2030 EDU allocations to protect ratepayers.** EDF supports CARB revisiting the 2031-2035 EDU allowance allocation schedule in a future rulemaking, allowing sufficient time to develop a robust approach to post-2030 electric allocation that protects ratepayers and meaningfully reduces residential electricity costs.

- **Develop an appropriate proposal for post-2030 Manufacturing Decarbonization Incentive (MDI).** Given the tremendous shortcomings of the current MDI proposal, CARB should remove the MDI entirely from the current rulemaking. This new concept will be more appropriately addressed in the context of post-2030 allocation to industry, at which time CARB Staff may bring forward a proposal for the MDI, allocated from under the emissions cap, that provides targeted, smart investment in accelerating industry GHG abatement.

VI. EDF supports proposed updates to improve ratepayer protection—CARB should retain and enhance these protections.

The California Climate Credit is one of the most important ways households see the affordability benefits of the Cap-and-Invest program. Since 2014, households have received over $17 billion in credits on their electric and natural gas utility bills,[66] providing important bill savings to households and helping to offset rising electricity costs. The California Climate Credit has been a critical source of relief on utility bills, particularly for low- and moderate-income households, and plays an important role in demonstrating to Californians how climate policy is working to both cut emissions and support affordability.

Several updates included in the April Proposal have the potential to enhance the Climate Credit and make electricity more affordable for households. EDF strongly supports these proposed changes, discussed further below, and urges CARB to retain these protections in the final regulation.

a. Increase to near-term electric allocation will benefit electric ratepayers.

The April Proposal includes several methodological updates to CARB's proposal for 2027-2030 allowance allocation to electrical distribution utilities (EDUs). For example, CARB proposes to update data inputs related to the Renewable Portfolio Standard (RPS) and hydroelectric and nuclear resources.[67] These inputs are used to quantify the zero-carbon resources available to serve each EDU's projected electric load and, therefore, help estimate the remaining electric load that could be served by emitting resources and incur a compliance obligation. Overall, the

[66] See the Public Utilities Commission webpage, "Greenhouse Gas Cap-and-Invest Program" (accessed March 9, 2026). https://www.cpuc.ca.gov/industries-and-topics/natural-gas/greenhouse-gas-cap-and-trade-program.
[67] April Notice, pgs. 23-24.

impact on EDU calculations is to increase the number of allowances allocated to EDUs between 2027-2030, relative to the allocation schedule that was proposed in the ISOR. EDF supports these proposed updates because they will make more revenue available to reduce household electric bills, compared to the EDU allocation proposed in the ISOR, and therefore have the potential to amplify the Cap-and-Invest program's affordability benefits.

b. Lifting the prohibition on volumetric credits for electric ratepayers enables Cap-and-Invest to actively reduce electric rates.

Currently, the Cap-and-Invest regulation bars utilities from returning allowance proceeds to ratepayers in a volumetric manner. The ISOR proposed to remove this prohibition for electric allocation to investor-owned utilities (IOUs). In the April Proposal, CARB proposes to also remove the prohibition on volumetric bill credits for publicly owned electric utilities and electrical cooperatives.[68] EDF supports this proposed change, which would allow all EDUs to use Cap-and-Invest proceeds to directly reduce electricity rates. This approach could unlock greater affordability benefits[69] and help households power their cooling, heating, cooking, and transportation with more affordable electricity.

c. Accelerating the transition from the gas Climate Credit to an enhanced electric Climate Credit is an important step to make electric bills more affordable.

AB 1207 requires CARB to transition allowance allocation from gas corporations to electrical distribution utilities on or before January 1, 2031.[70] This transition will shift a portion of Cap-and-Invest revenue from directly lowering residential natural gas bills to further lowering residential electricity bills, where these revenues can have the greatest benefit in addressing household energy costs. As a result, the gas Climate Credit will be phased out over time as investor-owned gas utilities (gas IOUs) are no longer allocated allowances, while the residential electric Climate Credit will be enhanced as EDUs are "over-allocated" allowances beyond the amount needed to mitigate program costs.

In the ISOR, CARB proposed to implement this transition between 2029 and 2036, starting with 20% of the allocation that would have been distributed to gas IOUs in 2029 and increasing by 10% each year. In comments on the ISOR proposal, EDF encouraged CARB to accelerate this transition in order provide greater near-term savings to households on their electric bills, while ensuring low- and moderate-income customers are protected (discussed further below). EDF supports the updates CARB proposes in the April Proposal to accelerate the transition by starting it one year earlier (in 2028 rather than in 2029) and increasing the pace of the transition such that 70% of allocation to gas IOUs are transferred to EDUs by 2031.[71] **The accelerated transition in the April Proposal is an important opportunity to make more revenue available to tackle residential electricity costs in the near term while driving down the costs of decarbonization in other sectors; EDF urges CARB to adopt this accelerated schedule.**

d. Ensuring protections for low-income residential customers is critical as revenues shift from the gas Climate Credit to a higher electric Climate Credit.

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[68] Id, pg. 23.
[69] Borenstein, Severin. "Spreading the Cap-and-Trade Wealth" Energy Institute Blog, November 10, 2025, https://energyathaas.wordpress.com/2025/11/10/spreading-the-cap-and-trade-wealth/.
[70] Health and Safety Code Section 38562(c)(2)(G)
[71] April Notice, pg. 26.

In comments on the ISOR proposal, EDF recommended CARB design the allocation transition in a way that ensures low- and moderate-income customers are "made whole" across their electric and gas bills. For an individual customer, this means receiving an increase in their electric Climate Credit that is equal to or greater than the decrease in their gas Climate Credit. Specifically, EDF recommended that CARB (a) require EDUs to prioritize benefits to low-income residential electric customers for the additional allowance value received from the transition; and (b) require gas IOUs to prioritize benefits to low-income residential gas customers for any allowance value that remains during the transition.

EDF strongly supports CARB's updates in the April Proposal to bolster protections for low-income gas customers during the transition and encourages CARB to also increase protections for low-income *electric* customers. The April Proposal requires gas IOUs to annually use 30% of the allowance value that would have been allocated (calculated before these allowances are transitioned to EDUs) for the primary benefit of low-income ratepayers.[72] This percentage aligns with the "the estimated proportion of natural gas investor-owned utility residential ratepayers that are enrolled in the California Alternate Rates for Energy (CARE) program."[73] As a result, by 2031, when 70% of the gas IOU allocation is transitioned to EDUs, all of the value that remains allocated to gas IOUs—30%—will be used for the primary benefit of low-income customers. EDF commends CARB for including this important update in the regulatory proposal. CARB can and should further enhance this protection for low-income households by ensuring that low-income residential *electric* customers are prioritized for the additional electric allowance value. Together, these protections can help ensure that low-income customers are the first to see the benefits of a larger electric Climate Credit and are the last to see the reduction and phaseout of the gas Climate Credit.

In addition, EDF supports the proposed improvement for how allowances transferred from gas IOUs will be apportioned among EDUs. In the ISOR, CARB proposed to distribute these transferred allowances among EDUs based on each EDU's proportional share of total retail electric sales. In the April Proposal, CARB rightly recognizes that this methodology could have resulted in an EDU with a higher share of residential customers receiving disproportionately low benefits compared to EDUs with a lower share of non-residential customers.[74] CARB now proposes to distribute the transferred allowances among EDUs based on their share of total *residential* electric sales.[75] EDF supports this change. We also encourage CARB to monitor implementation of this methodology on an ongoing basis. As discussed in EDF's comments on the ISOR, the manner in which allowances transferred from gas IOUs are apportioned among EDUs has important equity implications – both in terms of how benefits are distributed among residential customers of different EDUs, and also in terms of protection for low-income households.[76] EDF encourages CARB to evaluate implementation of this methodology and if, in the future, CARB determines a different approach for distributing the "over-allocation" allowances among EDUs would better protect low-income customers (such as distribution methodology based on percentage of low-income households), CARB should propose updates.[77]

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[72] Id, pg. 25.
[73] Id.
[74] Id, pg. 23.
[75] Id.
[76] Depending on how much additional allocation each EDU receives, some gas customers may receive net benefits from the gas to electric Climate Credit transition (if their electric Climate Credit is increased more than their gas Climate Credit is reduced), while others may experience the opposite.
[77] As gas allocation fully transitions to EDUs, CARB could evaluate whether distributing the allocation to EDUs proportional to their share of total *low-income* customers would be feasible and if such an approach would help ensure that low-income customers are "made whole."

VII. Preserve removal of 100% industry leakage assistance factors after 2030.

In the April Proposal, CARB appropriately removes its previous proposal to establish 100% leakage assistance through 2035, allowing the time needed to evaluate actual leakage risk and update these values to reflect real-world economic conditions. EDF supports CARB revisiting post-2030 allowance allocations to industry in a future rulemaking, to be concluded by 2028. This will enable CARB to calibrate industrial allocation to reflect actual leakage risk, consistent with statutory direction.[78] **Aligning industrial assistance factors with real-world leakage risk will help ensure California stays on a cost-effective path to meet its climate targets while preserving the competitiveness of emissions-intensive, trade-exposed facilities.**

As discussed in EDF's comments on the ISOR proposal, an assumption that all industries face the same, highest level of leakage risk through 2035 is likely not accurate and misaligned with California's climate targets. Empirical evidence shows that GHG pollution regulation is not as susceptible to leakage as some may suggest.[79] Moreover, appropriately incentivizing emissions reductions in the industrial sector in the early 2030s will be critical to keeping California on track to meet its 2045 targets for 85% reductions below 1990 levels and net zero. CARB's own modeling underscores the importance of early industrial emissions reductions, with the 2022 Scoping Plan scenario modeled to reduce industrial sector emissions 55% by 2035 relative to projected emissions levels in 2026.[80] Achieving this scale of reduction will require substantial progress from the industrial sector within the next decade. Driving further reductions in the industrial sector as early as possible helps to relieve pressure on higher-cost abatement options and also drives investment in the kind of emissions abatement technologies that may take longer to operationalize.

Arbitrarily inflated industrial assistance factors also have a real opportunity cost by shifting the Cap-and-Invest program's limited resources away from households and from industries that face the greatest leakage risks. By updating industrial assistance factors before 2035, CARB can preserve or even increase competitiveness protections where they are truly needed while reducing excess free allowances where risks are demonstrably low. Adjusting the assistance factor even at a minor level – lowering it from 100% to 95%, for example – would have significant benefits to GGRF revenue. Based on industrial allocation data for the last 5 years (2022-2026, inclusive), industry was allocated 164 million no-cost allowances.[81] If, in each of those years, the industrial assistance factor was set to 95% instead of 100%, industry would

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[78] AB 1207 (Irwin, 2025) removed the requirement that all Industrial Assistance Factors be set at 100%, returning CARB's discretion to "distribute industrial sector allowances in a manner that minimizes emissions leakage risk to cost-effectively achieve the [state climate targets]" starting in 2031. Health and Safety Code Section 38562(c)(2)(G). By lifting the restriction that previously limited CARB's authority to adjust leakage factors, the Legislature clearly returned discretion to the agency to update industrial allocation levels based on actual leakage risk and current economic data.

[79] For example, a 2022 study of trade flows between OECD and non-OECD countries found climate policies did not drive carbon leakage, with emissions transfers peaking in 2006 and declining thereafter even as emissions mitigation efforts in the US and EU intensified. Grubb et al., *Carbon Leakage, Consumption, and Trade,* Annual Review of Environment and Resources (2022). Moreover, a study of the EU ETS also found that the system did not measurably harm European firms' competitiveness or cause leakage. Verde, Stefano F., *The Impact of the EU Emissions Trading System on Competitiveness and Carbon Leakage: The Econometric Evidence,* Journal of Economic Surveys (2020).

[80] See AB 32 GHG Inventory Sectors Modeling Data Spreadsheet, under the "Emissions" tab. https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents. The Scoping Plan Scenario models industrial emissions declining from 65 MMT CO_2e in 2026 to 29 MMT CO_2e in 2035.

[81] See Annual Allowance Allocation Summaries for 2022 through 2026. https://ww2.arb.ca.gov/our-work/programs/cap-and-trade-program/cap-and-trade-program-data.

have still received over 156 million allowances – a difference of 8 million allowances.[82] Had those 8 million allowances been sold at auction rather than freely allocated from 2022-2026, this would have generated more than $250 million in additional in revenue for the GGRF.[83] This is example demonstrates there is real opportunity cost of over-allocation to industry: for households, GGRF programs, and leakage-prone industries.

CARB should make decisions about how to allocate the Cap-and-Invest program's limited value based on rigorous, empirical economic data. CARB's proposal to defer post-2030 industrial allocation to a future rulemaking will allow it time to do just that.

VIII. Conclusion

The integrity of California's Cap-and-Invest Program depends on a binding, declining emissions cap that is properly calibrated to the state's statutory climate targets. As described in these comments, CARB's April Proposal fails to meet that standard, and puts at risk both the emissions reductions the program is legally required to deliver *and* the affordability benefits and climate investments that Californians depend on. EDF urges CARB to issue a revised proposal that addresses the cap integrity problems identified in these comments before the Board vote this spring. Timely action on these revisions is essential to ensure CARB can implement regulations this fall and avoid any further delay, which would further jeopardize our climate targets and GGRF revenue, and delay necessary progress towards linkage with Washington – all of which are essential for California to achieve.

EDF is committed to working with CARB to ensure that the final rule permanently retires the necessary allowances and preserves and strengthens affordability benefits for Californians. We appreciate CARB's ongoing work on this proposal and look forward to continued engagement through the remainder of this proceeding.

Sincerely,

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[82] Industry received 164,465,941 no-cost allowances between 2022 and 2026. If, in each of those years, the industrial assistance factor were set to 95% instead of 100%, industry would have still received 156,242,644 allowances – a difference of 8,223,297.
[83] Calculated by taking 95% of the total industrial allocation for each year, multiplied by the average auction settlement price for that year.