Appendix 4: Summary of Comments and Agency Response

O. Industrial Emissions Leakage

O-1 Affordability

O-1.1a Multiple Comments: Refinery Stationary Source Costs and Fuel Imports

However, the resulting increase in compliance costs will not be absorbed solely by regulated entities. Instead, these costs will be passed through the downstream fuel supply chain, impacting fuel marketers, distributors, retailers, and ultimately end consumers. Many of these businesses operate on thin margins and lack the ability to absorb additional regulatory costs. As a result, higher compliance costs translate directly into increased fuel prices and the effects can be staggering. Given that daily finished gasoline consumption is ~13 million gallons, the possibility of a 10-15 cent increase as a result of rising allowance costs could translate to as much as ~$1.95 million in consumer costs, every single day. In a time when affordability has been key, this proposal goes directly against the intention of both the legislature when deciding to extend the program, and Californians seeking relief anywhere they can. This is on top of the reduced operational flexibility for our small businesses, and broader economic impacts across sectors that rely on fuel as a critical input. Together, the elimination of the CWB benchmark and the concurrent tightening of allowance supply transform free allowance allocation from a transitional cost-containment mechanism into a source of additional market exposure, magnifying the cost impacts of the proposed amendments and compounding financial pressures on regulated entities. (45d-CFCA-7.3)

Comment:

The status quo of the C&I program will severely undermine the viability of in-state refining, with potentially devastating consequences for California’s fuel supply, economy, and workers. The Proposed Amendments will make the situation exponentially worse by increasing in-state refiners’ stationary payments. Before finalizing the proposed rule, we urge CARB to address the state’s gasoline supply-demand imbalance by revising the current C&I payment schedule and Proposed Amendments to put in-state refiners on equal regulatory footing with fuel importers.

… Our Company acknowledges the Proposed Amendments are part of the state's efforts to reach its aspirational climate goals. Rather than dispute merits or timeliness, we offer the stark reality the impacts the current C&I program would have, as well as the Proposed Amendments as drafted, including the payment schedule benefiting importers at the cost of in-state refiners. The current C&I stationary source program is untenable

and must be addressed to ensure survival of the state's remaining refineries. The Proposed Amendments will only worsen the current state of the program, making costs skyrocket further. If enacted as written, the Proposed Amendments will inevitably drive in-state refining capacity to zero.

Since 2020, when gasoline supply was relatively balanced, five in-state refineries either shut down permanently or completely curtailed gasoline production. As detailed in Table 1, below, the state imported an average of ~53,000 barrels per day (bpd) of gasoline from 2021-2023.

Due to the latest refinery shutdowns, gasoline imports are estimated to have grown to ~250,000 bpd, a ~500% increase, meaning ~30% of the gasoline supply that had been produced in the state is now imported, primarily from refineries in Asia. Consequently, California has become even more reliant on remaining in-state refineries to maintain the feasibility of its gasoline supply. If the state fails to address inequities between in-state refiners and importers, refinery closures will accelerate and the feasibility of the state's fuel supply will come into question. Table 1 lists our historical costs, when gasoline production was balanced and C&I costs were equitably borne by the marketplace. Table 1 also lists the Proposed Amendment's dollarized impact on PBF, showing our costs escalating from 2024 by 400% to $309,000,000 annually by 2035. However, competing importers are exempt from paying C&I fees, so they pay nothing.

Net result: The existing C&I regulations and Proposed Amendments will effectively drive in-state refiners out of business while importers are completely shielded from these costs. This is the central flaw in the current stationary source program. The Proposed Amendments as written will only exacerbate the cost imbalance between California's refiners and importers.

If in-state refining becomes significantly impaired or infeasible, the catastrophe will go well beyond gasoline supply for consumers by also affecting military bases, jet fuel for California's airports, marine fuel for ports, plus crude oil production in the Central Valley, all of which would impact thousands of direct and indirect jobs throughout the state.

Despite claims the state is in mid-transition to EVs, more than 90% of registered vehicles, offroad construction and agricultural equipment, trains, boats, and planes, rely on liquid fuels. Given this continuing demand, curtailing in-state production will jeopardize fuel availability and affordability by driving up costs for every Californian motorist, business, and government entity. The C&I program is just one compliance burden. Myriad regulatory agencies impose significant costs on California refiners that competing importers never pay, separate from yet additive to current C&I payments the Proposed Amendments would further increase. For example, Valero noted it decided to shutter its Benicia refinery due in part to intense regulatory pressure, high compliance costs, and a record $82 million fine.

To comply with state and federal regulations and ensure safe, reliable, responsible operations, we invest significant capital in our two in-state refineries and logistics assets. Costs range from $100,000,000 to $300,000,000 each year, with most of the work done by California Building & Construction Trades crafts during turnarounds.

We make these and other investments expecting to generate suitable returns over an approximate five-year span. Layering the Proposed Amendments on top of current and future costs across the regulatory spectrum, including CARB, make this calculus unsustainable. Given the recent loss of ~20% of California's refining capacity, resilient fuel demand, and the state's growing reliance on imported gasoline, California should be particularly motivated to ensure the survivability of the state's remaining refining capacity. Maintaining a marketplace with embedded competitive disadvantages, exacerbated by the Proposed Amendments, would make the current situation exponentially worse and will achieve the opposite effect. The program's current payment schedule must be amended to eliminate importers' competitive advantage.

Unless CARB puts in-state refineries on an equal footing with importers, which we think can be accomplished this year, we will be forced to address the viability of our in-state operations, along with every other refiner in the state. We urge you to engage directly with in-state refiners to develop workable amendments that advance California's climate goals while maintaining the in-state refining capacity on which the state relies even more heavily today.

PBF is willing to work with CARB to find a solution that will ensure the viability of in-state refineries so we can continue to help meet California's energy needs for many decades to come. We think our collaborative approach is in keeping with the spirit and intent of Gov. Newsom's directive to CEC Vice-Chair Siva Gunda on April 21, 2025, that in part acknowledges the need to "…redouble the State's efforts" to ensure refiners will be able to "…profitably operate in California - a market where demand for gasoline will still exist for years to come."

To ensure the state's remaining "…refiners continue to see the value in serving the California market," per Gov. Newsom, our regulatory costs must be cut to put in-state refiners on a level playing field with importers who are exempt from paying these fees.

Thank you for providing the opportunity to comment on the Proposed Amendments. We want to help prevent devastating consequences for California's fuel supply, economy, and workers. We urge CARB to revise the current payment schedule and Proposed Amendments before finalizing this rule to place in-state refiners on equal regulatory footing with importers. (45d-PBFEI-13.1)

Comment:

The Association is also concerned about the continued loss of in state refining capacity and the increasing reliance on imported refined products to meet California's fuel demand. Policies that raise compliance costs for domestic refining without addressing regulatory imbalances risk accelerating this trend.

... Recent refinery closures have already reduced California’s refining capacity. As domestic supply tightens, the state has become increasingly dependent on imported refined products. The proposed amendments risk accelerating this trend by imposing additional compliance costs on in-state fuel production while demand for liquid fuels remains strong (45d-SBACOC-119.2)

Comment:

In-state refineries face significant costs to meet California’s aggressive climate goals through participation in Cap-and-Invest. This puts them at a competitive disadvantage compared to foreign refineries that do not share California’s high standards for labor, environment, and human rights, allowing these foreign producers to offer lower prices. These draft regulations suggest to us that the State is not fully committed to keeping our refineries open and our members employed. Instead, California appears willing to rely on imported fuel produced outside its standards and values. (45d-SBCTCC-5.2)

Comment:

Under AB 1207, CARB must evaluate "leakage risk." We contend that for the South Bay, the risk is at an all-time high. When a refinery in the South Bay closes, we do not see a reduction in fuel demand; we see a five-fold increase in fuel imports coming through our ports from regions with higher carbon intensities. We urge you to maintain robust free allowance allocations for our energy-intensive industries to ensure the South Bay remains a leader in both climate policy and industrial strength. (45d-TACC-18.1)

Comment:

Policies that significantly increase regulatory costs for these industries place that economic base at risk. Recent refinery closures and conversions have already reduced California's in state refining capacity. If remaining facilities face rising compliance costs under the proposed amendments, additional capacity losses remain possible. That outcome would increase dependence on imported refined products and expose California to greater supply volatility. (45d-WCC-114.1)

Comment:

The proposed amendments risk increasing compliance costs for domestic producers while demand for liquid fuels remains strong. If additional refining capacity becomes

economically unviable, California will become more dependent on imported fuels delivered through longer and less predictable supply chains.

HAIC is also concerned about the regulatory imbalance between in state refiners and imported fuels that enter the California market without equivalent production based compliance obligations. Addressing this imbalance remains essential to protecting port competitiveness, fuel supply reliability, and the economic stability of the harbor region.

... More concerning is the structural imbalance embedded within the program. In-state refineries must comply with stationary source obligations that foreign fuel producers do not face. Fuel imported into California from overseas facilities enters the same market without those production-based compliance costs. This imbalance places California's remaining refineries at a structural disadvantage and encourages greater reliance on imported fuels. (45d-HAIC-116.1)

Comment:

The cumulative effect of this program and the broader regulatory environment it anchors is the systematic destruction of California's refining capacity. In the early 1980s, California had more than 40 operating refineries. By the end of 2026 there will be only 11, according to the American Petroleum Institute. Phillips 66 ceased crude oil processing at its Wilmington refinery in October 2025, and Valero is shutting down its Benicia facility by late April 2026. Together, these closures eliminate approximately 284,000 barrels per day of processing capacity, representing roughly 17 percent of the state's total refining infrastructure.

Chevron, which relocated its corporate headquarters from San Ramon to Houston, Texas in 2024, wrote directly to the Governor's office in March 2026 warning that the proposed Cap-and-Invest regulatory changes will, in the words of Andy Walz, Chevron's President of Downstream, Midstream and Chemicals, "cripple the survivability of the state's remaining refineries, which will result in California losing the entire industry to this misguided program." Chevron's projections show gasoline prices will increase by more than one dollar per gallon by 2030 as a direct result of these regulatory changes. PBF Energy has similarly warned CARB that the proposed amendments "will inevitably drive in-state refining capacity to zero." Separately, UC Davis economists project an additional $1.21 per gallon increase by August 2026 from the refinery closures alone.

California is not connected to the national fuel pipeline network. Most gasoline consumed in the state must be refined in-state due to California's unique CARBOB fuel blend requirements. When refining capacity disappears, it cannot be readily replaced with out-of-state supply. As UC Davis researchers have noted, "refiners and retailers cannot simply buy gasoline from other states in a pinch to meet demand." The Board's ISOR speaks of maintaining "elevated free allocations" to industrial entities to prevent

emissions leakage, yet the trajectory of the program makes long-term refinery operation in California economically unviable. Free allocations do not solve the fundamental problem when the overall cap is declining to 30.3 million allowances by 2045, a level that is incompatible with the continued existence of petroleum refining in California. The Board is overseeing a policy that is simultaneously increasing the cost of producing fuel while making the state entirely dependent on a shrinking base of in-state production. This is not a sustainable policy. It is an economic trap, and working-class Californians are the ones caught in it. (45d-Nemeth-228.2)

Comment:

With the current Cap-and-Invest program and the proposed amendments that will ultimately further disincentive in-state refineries to remain in California, the state will require external supply through out-of-state and international purchases as the largest consumer of jet fuel in the nation and the second-largest consumer of motor gasoline after the state of Texas. Using the most recent data from 2024, the state imported 63.7 percent of its annual oil supply to California refineries and will continue to rely on external supply as trends in energy transition continues. When allocation formulas decline faster than viable decarbonization pathways become available the likely outcome is not clean energy investment. It is facility closure and import substitution, with emission, jobs, and economic benefits relocating outside of California. (45d-AM Rubio-353.2)

Comment:

The potential leakage of the sector has never been higher. CARB's last workshop highlighted this leakage risk just a few months ago. Crude imports are climbing. Imports of both crude and refined product have soared in recent years, with import of finished product only accelerating with the recent additional in-state refinery closures. The proposed amendments will add significant costs to in-state producers that are not required of international producers who import crude. These additional proposed Program costs are significant, and are coming to bear in a non-linear way that will produce a new cost jump dynamic. This cost dynamic is already having an impact on in-state producer economic decisions, both in the near-term and over the long-term. If the cost of local production outpaces the world price of oil, in-state production declines and is backfilled with imports, a lose-lose proposition for the State's economy and the world environment.

The economics of producing locally matter. Along with a host of other costs, Cap-and-Invest costs are material to in-state producers decision to continued operation. The leakage impact for this sector is NOT determined by a differential of importation costs as suggested by CARB, but by demand of the product verses in-state production. And in-state production is impacted by the cost of this Program (45d-CIPA-369.2)

Comment:

Unfortunately, CARB's current proposal does not reflect our understanding that regulations should be designed to ensure our employer companies participating in the Cap-and-Invest program can continue operating within the state. If these regulations are finalized as currently proposed, they would lead to more refinery closures, costing our members their jobs and middle-class livelihoods for their families, while also causing higher pump prices for all Californians. To dismiss leakage risks at California refineries is to ignore the lived reality of the workers whose jobs and communities depend on facilities like the Benicia refinery.

In-state refineries face significant costs to meet California's aggressive climate goals through participation in Cap-and-Invest. This puts them at a competitive disadvantage compared to foreign refineries that do not share California's high standards for labor, environment, and human rights, allowing these foreign producers to offer lower prices. These draft regulations suggest to us that the State is not fully committed to keeping our refineries open and our members employed. Instead, California appears willing to rely on imported fuel produced outside its standards and values. (45d-SBCTCC-5.1)

Comment:

This amendment package raises the cost of the program on a per barrel basis in the next few years 2x -4x, depending on individual operator production characteristics, which will have swift and measurable impact to CIPA Members, in-state investment and use of GHG reducing technology. Using conservative values for carbon price, the Program costs will exceed $4.30/barrel in 2034. This is a significant percentage of the products worldwide market value. CIPA recommends CARB revise the proposal so Program cost increases are minimized.

Over the past decade, CIPA members have embraced emission reduction technology and operational improvements, including installing higher efficiency equipment, adding renewable power infrastructure directly on site, implementing cutting edge of thermal energy storage, planning for Carbon Capture and Storage, and reducing methane emission rates. However, if the sector limited capital is diverted to program compliance costs rather than continued in-state production, innovation, GHG reduction initiatives, these increased costs will directly lead to emissions, job, and tax leakage due to fewer actual operational emissions (ceasing operations). (45d-CIPA-369.1)

Comment:

Minimize emissions leakage while preserving allowance supply, market stability, and affordability for covered entities. … .

CARB must comprehensively evaluate leakage risks and minimize these risks by maintaining cost-effective compliance pathways, consistent with legislative directives.

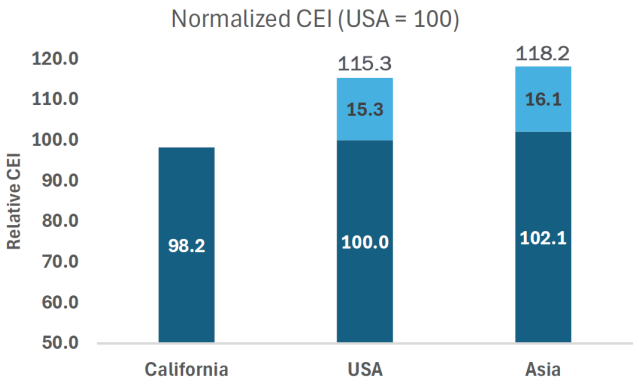
Since passage of AB 32, the California legislature has made clear that CARB has an obligation to minimize leakage in regulating GHG emissions through its Cap-and-Invest program. Subsequent legislation has highlighted the importance of this obligation – for instance, under AB 398, CARB was required to develop a report on "the leakage risk posed by the regulation" and "recommendations to the Legislature on necessary statutory changes to the program to reduce leakage…" by December 31, 2025. AB 1207 further reaffirms CARB's responsibility to address leakage risks while maintaining in-state production and economic competitiveness. Accordingly, any Cap-and-Invest program amendments must be evaluated not only for their GHG emissions outcomes but also for their impact on compliance instrument availability, market stability, and the ability of covered entities to plan for and make long-term investments, which impact potential leakage associated with the Cap-and-Invest program.

WSPA is concerned that the net effect of CARB's Proposed Amendments will be to increase leakage by significantly constraining the forward supply of compliance instruments available to covered entities, thereby compromising the affordability of the program for California consumers and businesses and discouraging in-state investments. These impacts are likely to be particularly significant for California refineries, since California no longer has sufficient in-state refining capacity to meet its own demand, and additional refinery closures have already been announced.

HSB Solomon Associates LLC has evaluated emissions- and economic-based leakage sensitivities under California's Cap-and-Invest program using data collected from over 300 refineries worldwide (or 85% of global refining capacity) under their 2024 Fuels Refinery Performance Analysis. This helps to illustrate how the program impacts California refining's competitive position vis-a-vis imported transportation fuels. Solomon's Carbon Emissions Index (CEI) is a refinery complexity-based metric that measures a facility's Scope 1 and 2 carbon emissions relative to the global average. The data shows that California refineries operate at a lower CEI than its peers in the United States and in Asia. When additional transportation fuels are imported due to in-state refinery shutdowns, or to meet additional consumer demand, associated emissions to meet that demand increases global emissions versus producing the same fuel in California.

Normalized Refinery CEI Including Shipping to West Coast

Product Shipping Emissions Intensity Basis = 5 kg CO_2/Bbl from Asia and 4.5 kg CO_2/Bbl from US Gulf Coast



Refinery CEI with Shipping = (Actual Net CO_2e Emissions + Shipping CO_2e Emissions)/(Refinery Standard CO_2e Emissions)

CEI = Carbon Emissions Index

Proprietary
© 2026 HSB Solomon Associates LLC

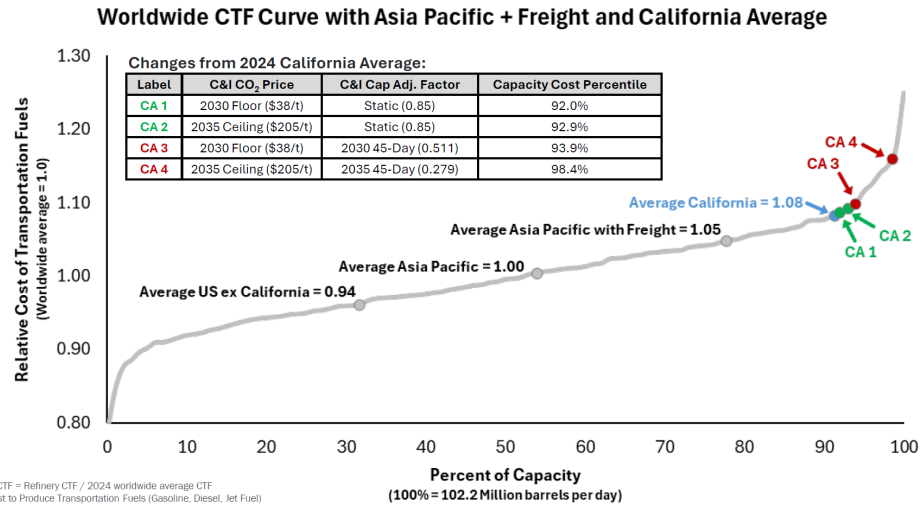
SolomonInsight.com

SOLOMON | 2

Solomon's "Cost to Produce Transportation Fuels" is a metric measuring multiple fuel production costs relative to a global average. Using these inputs to isolate potential Cap-and-Invest program impacts under CARB's proposal (shown in red) versus WSPA's proposal explained below (shown in green), demonstrates the potential magnitude that CARB's proposal could have in driving California's refineries further into a competitive disadvantage while increasing both economic and environmental leakage:...

Cost of Producing Transportation Fuels

Worldwide Distributions – 2024



Relative CTF = Refinery CTF / 2024 worldwide average CTF
CTF = Cost to Produce Transportation Fuels (Gasoline, Diesel, Jet Fuel)

Proprietary
© 2026 HSB Solomon Associates LLC

SolomonInsight.com

SOLOMON | 4

Additionally, Capitol Matrix Consulting evaluated estimated compliance costs through 2035 for California refiners under CARB's Proposed Amendments. It projects that the annual compliance costs for refineries could approach approximately $1.5 billion by 2035, with cumulative costs to refineries between approximately $5.5 billion to potentially $9 billion over the next decade. For an industry already operating under uniquely high costs and narrow margins in California, this additional burden could further destabilize a critical sector of California's economy that is already losing roughly 18% of in-state refining capacity within a six-month period.

CARB should strengthen industrial allowance allocations and preserve all existing cost-containment mechanisms. AB 1207 directs CARB to "evaluate the cost impact of the market-based compliance mechanism on California consumers when it revises regulations implementing that mechanism" and provides CARB with flexibility to "consider additional actions to ensure consumers are protected," including but not limited to "adjustment to the allowance price containment reserve or the price ceiling." CARB is proposing to increase the stringency of allowance budgets starting in 2027, which CARB acknowledges "may impart an increased carbon price signal in consumer energy prices and in the price of goods produced in-state." Indeed, CARB's updated economic analysis estimates that "cost of compliance with this regulation over its 20-year lifetime is $124 billion or averaging $6.2 billion annually." These costs do not account for additional indirect costs to consumers, such as retail fossil fuel prices, which may significantly impact affordability.

Consistent with these anticipated cost impacts, WSPA urges CARB to strengthen industrial allowance allocations and existing cost-containment mechanisms in the Cap-and-Invest program. Such action would help protect California's industrial competitiveness and workforce while providing the regulatory certainty necessary to support long-term investments. Weakening cost-containment tools or allowance availability risks further increasing compliance costs without delivering commensurate environmental benefits, particularly if GHG emissions are displaced rather than reduced. These mechanisms also are critical to maintaining affordable in-state fuels production. (45d-WSPA-381.2)

Comment:

We urge the Board to reconsider elements of the proposed update that impose disproportionate compliance costs on trade-exposed industries such as fuels, gas, and electricity. At a minimum, any regulatory changes must prevent emissions leakage, avoid sudden cost escalations, and prioritize energy reliability and affordability for California consumers. We are particularly concerned rapid reductions in allocations will accelerate closures without commensurate cost containment and leakage protections being presented in the proposed rulemaking. (45d-AM Rubio-353.4)

Comment:

Decades of state policies designed to restrict, rather than encourage the production of affordable fuels have severely restricted the ability of California refineries to compete with refiners in other jurisdictions without a carbon price. The California Energy Commission (CEC) stated in its 2024 Transportation Fuels Assessment that “Price spike risk is especially concerning, as demand reduction is expected to be on a relatively smooth trajectory, while supply declines from refinery closures or conversions will result in steep, sudden declines in gasoline production capacity.” California is set to lose approximately 17%–20% of its oil refining capacity by early 2026 due to the closure of two major plants: Phillips 66’s Wilmington facility (late 2025) and Valero's Benicia refinery (by April 2026). The closing of these two refineries will impact approximately 1,300 employees and contract workers. These closures will reduce California’s energy security and increase the state’s reliance on foreign fuel imports. 2025 gasoline imports into the West Coast (PADD 5) as of October 2025 averaged 118,580 b/d, or a total of about 35.5 million bbl. The proposed amendments do nothing to help prevent additional refinery closures and will likely accelerate the closure of additional facilities as costs associated with C&I and other policies are expected to increase significantly. Refiners will not make large capital investments or continue operating existing facilities if the long-term financial stability of those facilities remains in question. (45d-CUSAI-296.1)

Comment:

We recommend that the Air Resources Board continue to work on the regulatory process for continued implementation of the Cap-and-(Invest) program, including progress towards required targets, cost containment strategies and minimizing leakage.

The proposed rule amendments however, do not go far enough to ensure in-state refining capacity is not adversely impacted by additional program costs. Further loss of in-state refining capacity risks price shocks that will erode public support for our climate goals, generating increased emissions from the production and transport of fuel from the limited number of refineries worldwide who produce CARBOB, exposing the State to new vulnerabilities from impacts of geopolitical events, external markets and regulatory changes in other jurisdictions, and eliminate thousands of high-quality union jobs.

We recommend CARB consider stronger cost-containment and leakage mitigation in this rulemaking to protect in-state refining capacity. (45d-CCEEB-377.3)

Comment:

CARB’s proposed regulation also appears counter to the goals and requirements of the California Environmental Quality Act (CEQA). CEQA requires CARB to consider economic and technical factors as well as long-term and short-term costs, provide an accurate, stable, and finite project description, and analyze and disclose direct and

indirect significant environmental effects. These obligations are not sufficiently met, as the draft Environmental Impact Assessment lacks an adequate analysis of the actual environmental impacts of leakage that will foreseeably result from the proposed regulation and fails to consider appropriate alternatives.

Extensive costs and risks of closure for businesses further raise concerns under the California and federal takings and due-process clauses. Among other issues, the proposed regulation interferes with companies' investment-backed expectations by accelerating the reduction of the allowance supply. This deprivation is arbitrary: the C&I program seeks to reduce emissions, but the proposed changes do not rationally approach that goal.

Meanwhile, in-state refineries bear this burden while out-of-state refineries do not, implicating both state and federal equal-protection protections. This disparate treatment has little rational purpose in light of the resulting leakage. These negative effects could be reduced, as CARB itself has recognized, by adopting a well-designed CBAM. (45d-CUSAI-296.11)

Comment:

Critically, the concern is that the California carbon price will exceed the transportation costs to bring fuels into the state, which will likely further increase the state's reliance on out-of-state production of CARBOB and other finished fuel products. Significant reliance on out-of-state production and refining will ultimately lead to the exporting of carbon emissions to jurisdictions that do not have a price on carbon or advanced greenhouse gas mitigation and control technology in contravention of the statutory mandate of HSC § 38562. (45d-CUSAI-296.14)

Comment:

The proposed regulation fails to ensure C&I minimizes leakage within the petroleum industry and fails to ensure C&I is cost effective for consumers. The draft regulation currently proposed by CARB poses a direct existential threat to not only the oil and gas industry, but to the broader manufacturing industry in the state and beyond given the vital role that many California companies play in American supply chains. And because the proposed regulation risks the transfer of refining supply from California to other states and countries, the costs of the regulation will occur without any "real" and "permanent" "greenhouse gas emission reductions." I urge CARB to consider alternative solutions that do not risk Californians' energy security or livelihood. (45d-CH-348.1)

Comment:

In addition to its direct economic impact, California's in-state refining system plays an important role in supporting California manufacturers and U.S. energy security and national defense, particularly on the West Coast. California refineries supply a broad

range of transportation fuels, including aviation fuels that are critical to commercial and governmental operations, and they operate near major ports, military installations, and strategic aviation hubs serving the Pacific region. Continued erosion of California's refining capacity could increase reliance on imported fuels that are slower to arrive, more exposed to global supply disruptions, and less reliable during emergencies or periods of heightened geopolitical risk.

Refinery closures in California reduce fuel supply resilience on the West Coast, increasing risks to military readiness and national security. Maintaining a stable policy framework that supports continued operation of California refineries is therefore not only an economic and consumer affordability issue, but also a matter of broader energy security and national defense. (45d-CH-348.2)

Comment:

Decades of state policies designed to restrict, rather than encourage, the production of affordable fuels have left California refineries trade exposed to refiners in jurisdictions without a carbon price. The California Energy Commission stated in its 2024 Transportation Fuels Assessment that "Price spike risk is especially concerning, as demand reduction is expected to be on a relatively smooth trajectory, while supply declines from refinery closures or conversions will result in steep, sudden declines in gasoline production capacity." California is set to lose approximately 17%–20% of its oil refining capacity by early 2026 due to the closure of two major plants: Phillips 66's Wilmington facility (late 2025) and Valero's Benicia refinery (by April 2026). The closing of these 2 refineries will impact approximately 1,300 employees and contract workers. These closures will reduce California's energy security and increase the state's reliance on foreign fuel imports. 2025 gasoline imports into the West Coast (PADD 5) as of October 2024 averaged 118,580 b/d, or a total of about 35.5 million bbl. The proposed amendments do nothing to help prevent additional refinery closures and will likely accelerate the closure of additional facilities as costs associated with C&I and other policies are expected to increase significantly. Refiners will not make large capital investments or continue operating existing facilities if the long-term financial stability of those facilities remains in question. (45d-CH-348.3)

Comment:

California's energy future depends on policies that avoid undermining in-state refining and crude production, increasing consumer costs, or accelerating emission and economic leakage. As highlighted throughout this letter, the proposed amendments to the Cap-and-Invest Program do not adequately safeguard against these risks. With refinery closures already reducing California's fuel security and raising dependence on foreign imports, it is essential that CARB strengthen industrial allocation provisions, consider implementation of a CBAM, recognize the cumulative burden of overlapping

state policies, and ensure regulatory stability that encourages continued investment in in-state facilities. (45d-CH-348.8)

Comment:

Consider implementing new or existing regulatory mechanisms to better prevent leakage and stabilize California's petroleum sector.

…. CARB should consider implementing new or existing mechanisms to prevent leakage and stabilize California's petroleum sector.

WSPA is concerned that State-led efforts to stabilize California's refining sector will be substantially undermined unless CARB acts to ensure equivalent carbon pricing for imported transportation fuels. Implementing such a mechanism would minimize leakage risks, consistent with CARB's legislative mandate, by encouraging importers to reduce GHG emissions from other refining areas and to minimize transportation-related emissions associated with imported fuels.

CARB has broad authority under AB 398 and AB 1207 to adopt measures to minimize leakage as part of its Cap-and-Invest program. CARB should consider building upon prior work to transition to other policies that improve industrial assistance such as by exploring longer-term alternative leakage mitigation options for transportation fuels.

To achieve cost equivalency and address leakage risks, CARB would need to ensure that imported transportation fuels are subject to carbon costs equivalent to those imposed on California refineries. CARB should also consider existing mechanisms for addressing leakage, including extending the adjusted CAF to additional impacted industries such as refineries, and lowering the price ceiling to increase allowance availability and affordability. (45d-WSPA-381.6)

Comment:

I have been encouraged by your office's renewed focus on engaging with industry to improve certainty for refiners and the skilled labor that operates them. The draft Cap-and-Invest regulation as currently structured, though, introduces substantial new compliance costs and operational uncertainty for refiners already operating in one of the most tightly regulated environments in the country. At a time when several California refineries have closed or announced conversions away from petroleum refining, additional cost pressures may accelerate further capacity reductions. Even a single additional closure would have outsized effects on regional supply.

Nevada does not have the infrastructure to quickly replace lost California refining capacity. Increased reliance on marine imports would expose our state and residents to international supply disruptions, port congestion, weather events, and geopolitical instability. Such reliance would also increase costs and reduce supply predictability. The

geographic isolation of the West Coast fuel market makes it uniquely vulnerable to shortages and price volatility when refining capacity tightens.

Affordable and reliable fuel is essential to our economy.

... Sudden price spikes or supply disruptions would reverberate immediately through food costs, construction, agriculture, manufacturing, and small businesses.

I am particularly concerned about the cumulative impact of regulatory layering which could potentially impact fuel viability. The Western fuel market has little to no excess capacity. When margins tighten and long-term investment signals deteriorate, companies make decisions that are often irreversible. Once refining capacity is shuttered, it is rarely restored. The loss is permanent, and the region absorbs the consequences in the form of tighter supply and sustained price volatility.

I respectfully urge your Administration to direct CARB to take a similar regional focus as the CEC, and carefully evaluate the regional consequences of the draft Cap-and-Invest regulation before final adoption. Specifically, I ask that you consider the risk of additional refinery closures, the absence of replacement infrastructure in neighboring states, and the strategic importance of maintaining adequate refining capacity in California for the broader Southwest. Given the degree to which Nevada relies on California's refineries, I believe it is essential that our states engage in meaningful regional dialogue on policies that could materially affect our shared fuel system. A coordinated regional discussion would allow us to better assess risks, share data, and explore safeguards to prevent unintended supply disruptions.

My request is straightforward: any major policy change that could alter refinery economics in California must account for the real-world consequences to neighboring states that depend on that infrastructure. Fuel affordability and availability are foundational to economic stability, interstate commerce, and national security across the Southwest. Given additional tension in the Middle East, the situation is particularly pressing. (45d-GJL-410.1)

Comment:

The Cap-and-Invest program can and should be designed to support an orderly transition that centers workers and frontline communities. Program design choices, including allowance allocation, cost containment mechanisms, and treatment of industrial emissions, should reflect the reality that maintaining the safety and reliability of existing infrastructure during the transition is not a concession to the status quo, but a prerequisite for protecting the workers and communities that are most directly affected.

Experienced refinery workers are already leaving California for other markets, and the state's ability to maintain safe, reliable fuel supplies depends on retaining that workforce

through the transition. Proactive job transition support and clear expectations around maintenance investment at legacy facilities will be important complements to the regulatory framework. (45d-AMPetrie-Norris-432.3)

Comment: Form Letter 1 (160 submissions)

I have significant concerns with the California Air Resources Board's (CARB) proposed Cap & Invest (C&I) regulation. Health & Safety Code $ 38562 requires CARB to "seek[] to minimize costs and maximize the total benefits to California," to adopt rules consistent with what is "technologically feasible and cost-effective," to consider "benefits to the economy," and to "minimize leakage." The proposed regulation fails to ensure C&I minimizes leakage within the petroleum industry and fails to ensure C&I is cost effective for consumers. The draft regulation currently proposed by CARB poses a direct existential threat to not only the oil and gas industry, but to the broader manufacturing industry in the state and beyond given the vital role that many California companies play in American supply chains. And because the proposed regulation risks the transfer of refining supply from California to other states and countries, the costs of the regulation will occur without any "real" and "permanent" "greenhouse gas emission reductions.' I urge CARB to consider alternative solutions that do not risk Californians' energy security or livelihood. In addition to its direct economic impact, California's in-state refining system plays an important role in supporting California manufacturers and U.S. energy security and national defense, particularly on the West Coast. California refineries supply a broad range of transportation fuels, including aviation fuels that are critical to commercial and governmental operations, and they operate near major ports, military installations, and strategic aviation hubs serving the Pacific region. Continued erosion of California's refining capacity could increase reliance on imported fuels that are slower to arrive, more exposed to global supply disruptions, and less reliable during emergencies or periods of heightened geopolitical risk. Refinery closures in California reduce fuel supply resilience on the West Coast, increasing risks to military readiness and national security. Maintaining a stable policy framework that supports continued operation of California refineries is therefore not only an economic and consumer affordability issue, but also a matter of broader energy security and national defense. (45d-FL1.1)

Comment: Form Letter 1 (160 submissions)

Decades of state policies designed to restrict, rather than encourage, the production of affordable fuels have left California refineries trade exposed to refiners in jurisdictions without a carbon price. The California Energy Commission stated in its 2024 Transportation Fuels Assessment that "Price spike risk is especially concerning, as demand reduction is expected to be on a relatively smooth trajectory, while supply declines from refinery closures or conversions will result in steep, sudden declines in gasoline production capacity." California is set to lose approximately 17%-20% of its oil refining capacity by early 2026 due to the closure of two major plants: Phillips 66's

Wilmington facility (late 2025) and Valero's Benicia refinery (by April 2026). The closing of these 2 refineries will impact approximately 1,300 employees and contract workers. These closures will reduce California's energy security and increase the state's reliance on foreign fuel imports. 2025 gasoline imports into the West Coast (PADD 5) as of October 2024 averaged 118,580 b/d, or a total of about 35.5 million bbl. The proposed amendments do nothing to help prevent additional refinery closures and will likely accelerate the closure of additional facilities as costs associated with C&I and other policies are expected to increase significantly. Refiners will not make large capital investments or continue operating existing facilities if the long-term financial stability of those facilities remains in question. (45d-FL1.2)

Agency Response:

Changes were made in response to these comments. Table 9-2 is updated to increase cap adjustment factors (CAF) for most industrial sectors, including refineries, relative to the 45-day proposal and to set cap adjustment factors through 2030. See the Agency Response to comment O-5.1a regarding the CAF changes.

See also Master Response 1 of the Response to Comments on the Environmental Impact Analysis. Moreover, CARB is not setting post-2030 CAFs in the Proposed Amendments but retains annual allowance budgets through 2045 to send a long-term market signal for ongoing investment in clean energy and technology. Post-2030 CAFs will be considered as part of a future rulemaking, which provides time to continue to work through varying stakeholder concerns and for current economic uncertainty to stabilize.

To support the deep decarbonization of the in-state fuel supply to support ongoing consumer demand, and consistent with the Legislature’s directive under SB X1-2 and AB X2-1 to ensure that California maintains reliable and affordable fuel supplies, the Manufacturing Decarbonization Incentive (MDI) eligibility was extended to refineries, hydrogen producers, and associated sectors as NACIS codes 324110 (petroleum refineries), 324121 (asphalt manufacturing), 324199 (all other petroleum and coal products manufacturing), 325120 (industrial gas manufacturing, i.e. hydrogen production), and 325199 (all other basic organic chemical manufacturing, i.e. biorefineries)). Moreover, CARB has also provided leakage minimization support for oil and gas sectors by extending MDI eligibility on CCUS projects. See the Agency Response to comment O-8.4a, regarding the MDI. This change makes available additional support for investment in California, near term emissions reductions, and helps make up for the loss of federal incentives. The increased CAFs for 2027-2030 and the expanded MDI allocation in the 15-day Amendments increase emissions leakage protections relative to the 45-day proposal during the near-term economic uncertainty due to changing tariff

conditions and the ongoing global supply chain disruptions, support California businesses and jobs, and align with statutory direction to consider effects on the state's economy. When accounting for the amended CAF and for reduced emissions possible from use of the MDI, refineries and biorefineries will benefit from reduced compliance costs, significantly mitigating emissions leakage risk for the sector and benefiting consumer affordability.

CWB benchmark retirement and replacement by the Liquid Hydrocarbon Fuel (LHF) benchmark is delayed through Vintage 2032. This change matches the intent for the timing of allowance allocation for activities under NAICS code 324110. Allocation through production year 2030 may be based upon the CWB benchmark (e.g., the allocation for production during 2030 can be made final by vintage 2032 true-up allocation that is based on CWB production during 2030). Facilities retain the option to irreversibly opt-in to reporting under this benchmark before the retirement of CWB. This change aligns with changes to product data reporting for refineries in MRR, where beginning with data year 2031, liquid hydrocarbon fuel production data must be reported in lieu of CWB production data. The proposed LHF benchmark is technology-agnostic, aligned with the Program's one-product one-benchmark approach, and provides consistent treatment of fossil and non-fossil transportation fuel producers.

These changes are necessary to increase emissions leakage protection relative to the 45-day proposal during the near-term unprecedented economic uncertainty, to take a conservative approach, to support California businesses and jobs, and to align with the statutory direction to consider effects on the state's economy and affordability. As directed in AB 398 and AB 1207, CARB staff is continuing to evaluate allowance allocation program design and additional and complementary mechanisms after 2030 to address the risk of emissions leakage related to both covered industrial emissions and products that are not currently covered by the Program. Post-2030 allocation will also be informed by updated data relied on for the AB 398 leakage report. See Agency Response to comment O-13.3 regarding the AB 398 Leakage Report.

Table 1 shows that industrial entities covered by the Program received free allowances covering approximately 62% of their total covered emissions in 2023. Under the proposed amendments, the ratio of allocation to covered emissions for 2027-2030 would be approximately 70% (assuming constant emissions).

Table 1. Industrial Allowance Allocation in Other Emissions Trading Systems

Jurisdiction	2023 Industrial Covered Emissions	2023 Industrial Allowance Allocation	2023 Ratio of Allocation to Covered Emissions (%)	Estimated 2027-30 Ratio of Allocation to Covered Emissions (%) under Final Proposal
California	56,172,385	34,935,503	62%	70%
Washington	9,182,283	9,162,037	~100%	
Québec	19,734,923	19,543,087	99%	
European Union	628,571,429	528,000,000	84%	
United Kingdom	50,900,178	36,856,294	72%	

During October 2025 public workshop, staff provided an overview of the updated industrial leakage assessment and concluded that the leakage risks of key covered sectors were largely unchanged from the assessment conducted at the outset of the Program in 2010 (CARB 2010a). The assessment also confirmed that the current output-based allocation approach continues to be effective in addressing leakage risks associated with the implementation of this program for emissions-intensive and trade-exposed industries. Industries in the state have a variety of factors that reflect the cost of doing business in the state. Allowance allocation is responsive to mitigating leakage risk associated with the Program.

Please also refer to Master Response 1 in the Response to Comments on the Environmental Impact Analysis regarding emissions leakage.

Concerning comments regarding additional mechanisms to mitigate emissions leakage risk, Board Resolution 26-7 directs the Executive Officer to evaluate alternative or additional mechanisms for products entering the state to minimize leakage for sectors with imports of high carbon products. Please also refer to Agency Response to comment O-4.1a and Master Response 2 of the Response to Comments on the Environmental Impact Analysis.

With respect to CEQA, see the response to comment 296-3 in the Response to Comments on the Environmental Impact Analysis.

O-1.1b Multiple Comments: Refinery Stationary Source Costs and Fuel Imports

And the final regulations need to put a hard stop on encouraging the import of out-of-state and foreign fuel oil sourced from hostile jurisdictions and refined by untrained, poorly treated workers with no regard for the global environment. Continuing to incentivize this import strategy is not only contrary to California's high-road labor, environmental, and human rights values but also extremely hypocritical. As the fifth-largest economy in the world and a global leader in our response to the climate crisis, we have a responsibility to lead and ensure that the products we use in California are produced cleanly and ethically. (15d-IBB-11.3)

Comment:

California’s supply chain industry has been an environmental success story, reducing criteria pollutant emissions by over 90% while also achieving significant reductions in greenhouse gas (GHG) emissions. According to a recently published analysis by Stillwater Associates, renewable fuels – largely produced by in-state refiners – have reduced the GHGs from diesel fueled equipment by approximately 60% in just the last seven years, beating CARB’s scoping plan forecasts.

However, disruptions in the global energy supply chain have created unprecedented economic shocks to California’s transportation fuel sector. As you know, a third of California’s economy and jobs rely on the goods movement sector which requires a reliable and affordable supply of fuel and electricity. Recent events have exposed California’s vulnerability to geopolitical disruptions to the global energy supply chain.

… Analysts indicate that both diesel and jet fuel are most vulnerable to supply disruptions, which is disastrous for California’s supply chain given it’s heavy reliance on diesel fueled equipment. This is also an issue of national significance as the Ports of Los Angeles and Long Beach, alone, account for 31% of all the United States’ containerized trade.

Accordingly, the SCF joins with many of our colleagues in California’s business community in urging California Air Resources Board (CARB) to do everything it can to avoid further disruptions to California’s in-state refining capacity. CARB must send the sector long-term signals that it intends to take action to mitigate further leakage.

Existing programs have proven to be successful in reducing both criteria and GHG emissions. This success story risks being undone if transportation fuel supply disruptions upset California’s critical goods movement and supply chain industries, which would impact sectors as varied as agriculture/food, medicine, manufacturing, housing, retail and more. (15d-SCF-17.1)

Comment:

CIPA represents nearly 300 crude oil and natural gas producers, royalty owners, and service and supply companies who all operate in California under the toughest regulations on the planet. The Proposed Amendments will not decrease California demand for finished product, but rather encourage foreign imports from jurisdictions' that do not have the same standards for their labor or the environment. This will proposal directly lead to sector leakage....

Transportation fuel feedstocks, such as crude oil, are a global commodity. There is a world market and global infrastructure operating today which is capable of producing and delivering the marginal barrel to California's remaining refiners for any amount of crude not produced in state. The potential leakage of the sector has never been higher. Crude imports are climbing. Imports of both crude and refined products have soared in recent years, with import of finished product only accelerating with the recent additional in-state refinery closures. The proposed amendments will add significant costs to in-state producers that are not required of international producers who import crude. This cost dynamic is already having an impact on in-state producer economic decisions, both in the near-term and over the long-term. If the cost of local production outpaces the world price of oil, in-state production declines and is backfilled. (15d-CIPA-32.1)

Agency Response:

Further changes were not made in response to these comments. Please refer to the Agency Response to comment O-1.1a regarding changes made to minimize leakage while maintaining the integrity of the Program and ensuring the Program is doing its part to meet California's 2030 and 2045 GHG reduction targets.

Please also refer to Master Response 1 in the Response to Comments on the Environmental Impact Analysis regarding emissions leakage.

O-1.1c Multiple Comments: Refinery Stationary Source Costs and Fuel Imports

With the current Cap-and-Invest program and the proposed amendments that will ultimately further disincentive in-state refineries to remain in California, the state will require external supply through out-of-state and international purchases as the largest consumer of jet fuel in the nation and the second-largest consumer of motor gasoline after the state of Texas. Using the most recent data from 2024, the state imported 63.7 percent of its annual oil supply to California refineries and will continue to rely on external supply as trends in energy transition continues. When allocation formulas decline faster than viable decarbonization pathways become available the likely outcome is not clean energy investment. It is facility closure and import substitution, with emission, jobs, and economic benefits relocating outside of California. (BH-AM Rubio-4.2)

Comment:

We urge the Board to reconsider elements of the proposed update that impose disproportionate compliance costs on trade-exposed industries such as fuels, gas, and electricity. At a minimum, any regulatory changes must prevent emissions leakage, avoid sudden cost escalations, and prioritize energy reliability and affordability for California consumers. We are particularly concerned rapid reductions in allocations will accelerate closures without commensurate cost containment and leakage protections being presented in the proposed rulemaking. (BH- AM Rubio-4.4)

Agency Response:

Further changes were not made in response to these comments. Please refer to the Agency Response to comments O-1.1a and O-1.1b.

O-1.2 Multiple Comments: CARB authority and Stationary Source Costs

Modify the Proposed Rule for consistency with other California and federal laws and policies…

LCFS: It is worth noting that LCFS CI scores include the combustion emissions for fuels delivered in California, which also represent a significant portion of fuel suppliers' C&I obligations. This means that these fuels are burdened with additional costs from both programs for the same emissions.

CARB At-Berth: In addition to LCFS and C&I compliance costs, CARB is enforcing the Ocean-Going Vessels At-Berth Regulation on tanker vessels calling at Southern California ports. The rule requires tankers to use shore power or CARB-approved control technologies that have not been demonstrated on tankers at scale and raise significant safety, operational, and cost concerns. Tankers present unique hazards and applying unproven technologies risks disrupting safe vessel and terminal operations The global tanker fleet that calls on California largely is not equipped to use shore power, and port-side electrical infrastructure is insufficient to support tanker operations. Alternative control technologies remain in early testing and are not commercially deployable at scale. Absent a feasible compliance pathway, companies may be forced to limit tanker shipments, reducing the supply of crude oil and refine products needed to meet California's energy demand. This risk is heightened given that California already imports approximately 75 percent of the crude oil it consumes due to restrictions on in-state production. Meanwhile, regulated entities are paying millions of dollars into remediation funds to comply, further increasing the cumulative regulatory burden on fuel supply chains serving California.

AB X2-1 significantly expanded the California Energy Commission's oversight of in-state refineries by authorizing minimum inventory and resupply obligations intended to reduce price volatility. In practice these requirements introduce new operational constraints and

regulatory uncertainty for refiner operating in an already challenging business environment marked by declining capacity, high compliance costs, and sustained periods of negative net margins. Since 2020, multiple California refineries have exited petroleum refining or announced closures, underscoring that continued operation depends on economic viability. AB X2-1's inventory and resupply mandates risk further discouraging investment, reducing refinery utilization, and accelerating the loss of in-state refining capacity by imposing inflexible requirements that do not reflect the complexity of refinery operations or market dynamics. For consumers, the consequences of AB X2-1 are closely tied to its impacts on refining operations. Reduced flexibility and higher compliance costs for refineries are likely to tighten fuel supply, increasing the risk of higher gasoline prices and greater price volatility, particularly during outages or peak demand periods. Increased reliance on imported fuels is not a reliable substitute, as imports are more expensive, slower to respond to supply disruptions, and expose California consumers to greater global market and logistical risks. As a result, A B X 2-1 risks raising transportation fuel costs and disproportionately burdening lower-income households, while failing to deliver durable consumer benefits unless its costs clearly outweigh any avoided price volatility, as required by statute.

Maximum Gross Gasoline Refining Margin and Penalty (SB X1-2) Adopting the maximum gross gasoline refining margin and associated penalty authorized by SB X1-230 would undermine the economic viability of California refineries. A gross margin metric fails to account for the full costs of safely and reliably operating a refinery, including labor, maintenance, regulatory compliance, and capital investment. By mischaracterizing refinery economics, the policy would increase financial uncertainty and discourage investment in an already constrained refining system, raising the risk of reduced utilization, deferred maintenance, and supply disruptions in a geographically isolated market with limited alternatives For consumers, weakened refinery operations would translate into tighter fuel supply, greater price volatility, and higher gasoline prices, particularly during periods of peak demand or unplanned outages. Reduced in-state production would increase reliance on costly and slow-to-arrive imports that are ill-suited to respond to supply shocks and carry higher lifecycle emissions. These impacts would fall most heavily on lower-income households that spend a disproportionate share of income on transportation fuels, increasing costs without addressing the underlying drivers of California's gasoline prices.

Failing to assess the cost and feasibility of the changes as required in the Administrative Procedure Act deprives refiners of important procedural due process safeguards. Compliance with these laws would impose only minimal fiscal and administrative burdens on CARB in contrast to the massive regulatory burden the proposed regulation imposes on refiners and consumers. Separately, the proposed regulation impermissibly

imposes a tax via regulation, as opposed to via statute, in violation of Propositions 13 and 26.39. Relatedly, the proposed regulation is more than a mere fee and thus the proposed regulations—not simply the authorizing law—requires a favorable two-thirds majority legislative vote.

C&I, as proposed, makes California's poverty and affordability challenges worse by driving fuel costs even higher, making the future availability of fuel supplies even less secure, and enriching other countries at the expense of California's own oil production and refining industry. Lower- and middle-income families will bear the brunt of the economic harm caused by C&I, as CARB has already expressly admitted in its Scoping Plan, which would be both a legal and moral mistake. C&I cannot double-down in inflicting even more harms on those least able to absorb higher costs. (45d-CUSAI-296.10)

Comment:

California's Health and Safety Code and the California Administrative Procedure Act require that CARB's proposed emissions limits reflect "technologically feasible and cost-effective" solutions. They also require that CARB seek to minimize costs and maximize the total benefits to California, consider other benefits to the economy, avoid disproportionately impacting low-income communities, and minimize leakage. Yet the expected compliance cost is greater than $3 billion, risks the 536,000 jobs connected to California's oil and gas industry, compromises consumers' energy security, and threatens emissions leakage.

Failing to assess the cost and feasibility of the changes as required in the Administrative Procedure Act deprives refiners of important procedural due-process safeguards. Compliance with these laws would impose only minimal fiscal and administrative burdens on CARB in contrast to the massive regulatory burden the proposed regulation imposes on refiners and consumers.

Separately, the proposed regulation impermissibly imposes a tax via regulation rather than statute, in violation of Propositions 13 and 26. Relatedly, the proposed regulation is more than a mere fee and therefore requires a favorable two-thirds majority legislative vote. (45d-CUSAI-296.15)

Agency Response:

Changes were made in response to these comments. Please refer to the Agency Response to comment O-1.1a regarding changes affecting refinery stationary source costs, fuel imports, and affordability. Please refer to Agency Response to comment O-1.3a for changes made to the Proposed Amendments to address affordability concerns.

The Cap-and-Invest Program is the most cost-effective way to reduce GHG emissions among the covered entities in order for California to achieve its statutorily mandated climate targets. The Program creates a powerful economic incentive for covered entities to invest in cleaner, more efficient technologies to comply with the program. Overall, the net benefit of the Proposed Amendments is positive to California, including low-income communities as described in Table 22 of the ISOR.

CARB disagrees with the commentor's claims that the proposed regulation imposes a tax and that the proposed regulation itself is subject to the two-thirds vote requirement of Propositions 13 and 26. First, the commentor does not explain what portions of or how the proposed regulation impermissibly imposes a tax, instead only offering a conclusory statement to which no further response is required. In any event, California courts have already determined that the Program's revenue generation is not a tax. (*California Chamber of Commerce v. State Air Resources Board* (2017) 10 Cal.App.5th 604, review denied June 28, 2017.) Second, even if the Program were somehow a tax, the authorizing legislation for the proposed regulation passed the Legislature with the requisite two-thirds vote, satisfying that constitutional requirement. In September 2025, the California Legislature passed Assembly Bill (AB) 1207 (Irwin, Stats. 2025, ch. 117) with a two-thirds supermajority, which extends and provides direction to the Cap-and-Invest Program through 2045. The Proposed Amendments are in response to the legislative direction of AB 1207.

CARB similarly disagrees with the commenter's assertion that CARB failed to assess the costs and feasibility of the Proposed Amendments. CARB fully complied with its obligations under the Administrative Procedure Act. Since the commenter did not provide any information on how CARB supposedly failed to do so, no further response is required. Please refer to Agency Response to comment V-5.4 regarding required analysis for the Proposed Amendments.

Comments concerning other regulations and legislation (LCFS, At Berth Regulation, and SBX2-1) are noted but are out of scope of this rulemaking.

O-1.3a Multiple Comments: Economic Impacts on Californians

The regulatory decisions under consideration are being made in an economic environment materially different from the early years of Cap-and-Trade. California faces persistent affordability challenges in electricity, fuels, groceries, and housing, driven by intersecting cost pressures that now rank as the single most important concern for Californians across all demographic groups. Industrial facilities in refining, food processing, manufacturing, glass and cement sectors have reduced output, closed, or announced closures in recent years. Supply chains have become more global, not less,

putting pressure on reducing costs for businesses to stay solvent. The data are unambiguous. In its November 2025 statewide survey, PPIC found that the 36% of Californians (largest share of respondents to that question), identified cost of living, the economy, and inflation as the most important issue facing the state. A PPIC survey conducted in October 2025 found that 69% of Californians expected bad economic times in the next twelve months, and that one in five adults reported it would be very difficult or nearly impossible to cover a $1,000 emergency expense. A March 2025 PPIC economic assessment found that energy prices have risen 28% compared to pre-pandemic levels, and that California already carries the second-highest electricity rates in the nation. These conditions are not abstractions. They are the operating environment into which this rulemaking will land. Support for California's climate leadership remains strong in principle. According to PPIC's July 2025 environment survey, approximately six in ten Californians favor the state making its own policies on climate change, and nearly three in four support U.S. participation in international climate efforts. But that same survey found that fewer than half of Californians are willing to pay more for electricity from renewable sources, and over half identified prices at the pump and energy bills as major problems. As PPIC survey director Mark Baldassare has noted, heightened concerns around the cost of living have dampened enthusiasm for policies perceived as raising energy costs, even among those who support the underlying climate objectives. The implication is not that public support for climate action has collapsed. It has not. Rather, these data confirm that the program's political durability is directly contingent on demonstrable cost discipline in its design. That is the message CARB's own public engagement reflects, and it is the appropriate lens through which the specific mechanisms at issue in this rulemaking, the Cap Adjustment Factor, free allowance allocation, the NGS-to-EDU transition, and offset usability, should be evaluated.

…

California’s cap will continue to tighten. That trajectory is not in dispute. The design question is how compliance costs are distributed and how leakage risk is managed while maintaining public trust. Industrial facilities are facing competitive pressure not only from external producers but from internal corporate capital allocation decisions. Consumers are facing cost-of-living pressures that influence their perception of climate policy. Labor organizations are concerned about job retention and industrial modernization. A carbon market that recognizes these realities and calibrates its mechanisms accordingly will remain durable. One that relies solely on mathematical stringency without economic calibration risks undermining its own longevity. ClimateBuild’s recommendations aim to strengthen, not weaken, California’s climate framework. By embedding affordability and leakage protection into program design, CARB can maintain environmental ambition while preserving economic stability. (45d-CBC-446.1)

Comment:

However, unless the measures are sufficient to mitigate the effect of the proposed increased Program stringency on leakage, CARB's proposal could result in a net increase of global GHG emissions and create significant negative effects on California's economy and communities by driving food production and other manufacturing to jurisdictions with lower regulatory compliance burdens, while harming low-income communities, California businesses, and the state and local economies. This result would clearly conflict with the purpose and intent of California's climate policy. CLFP urges CARB to ensure that any changes it makes to the Program regulations will not cause this adverse result. (45d-CLFP-328.1)

Agency Response:

Changes were made in response to these comments. In recognition of short-term economic uncertainty caused by federal economic policy disruptions, loss of federal incentives, global events, and volatile market conditions, CARB staff proposed 15-day Amendments to the 45-day proposal to balance legislative direction, affordability, jobs, and near-term concerns while also ensuring emissions reductions and providing a long-term signal for the market.

These changes include:

- Increasing the California Climate Credit for electricity bills by increasing allowances and expediting the transfer of gas utility allowances to electric utilities. Revenue from remaining gas allowances will focus on bill credits for low-income customers. This lowers household electricity bills and provides additional relief to customers most vulnerable to rising energy costs.
- Doubles the manufacturing decarbonization incentive fund to support doing business in California. Eligible entities include manufacturers and refiners who make upgrades that reduce emissions at their facilities and reduce future compliance costs. This supports affordability by helping businesses reduce compliance costs for fuel and products produced in state while incentivizing decarbonization in hard to decarbonize sectors aligned with the State's GHG emissions reduction targets.
- Increase assistance for industry by providing additional compliance support through 2030 to minimize emissions leakage risk and lower compliance costs. This helps businesses reduce cost pressures and stabilizes prices for consumers during periods of economic uncertainty.
- Provide post-2030 flexibility by removing post-2030 allowance allocation for consideration as part of a future rulemaking but retains emissions caps through 2045 to send long-term market signal. This provides time to continue to work through stakeholder concerns until economic uncertainty stabilizes.

During October 2025 public workshop, staff provided an overview of key contractor findings on industrial leakage and concluded that the leakage risks of key covered sectors were largely unchanged from the assessment conducted at the outset of the Program in 2010 (CARB 2025j, CARB 2010a). The contractor findings also confirmed that the current output-based allocation approach continues to be effective in addressing leakage risks for emissions-intensive and trade-exposed industries. These findings did not reflect the more recent economic uncertainty and global energy disruptions and their relationship to leakage potential changes. Staff took a conservative approach to minimizing leakage through 2030 by increasing allocation to industry.

Please refer to Master Response 1 in the Response to Comments on the Environmental Impact Analysis to comments regarding emissions leakage.

O-1.3b Comment:

A tightening cap is necessary to achieve California's emissions targets, but it can also create cost pressures that affect both consumers and the broader economy. We appreciate CARB's recognition that this pressure risks driving key industries out of the State, that such industrial relocation would cause serious financial harm to Californians', and that Cap-and-Invest can and should include the careful use of free allowances and other tools to preempt this damage. California's oil refineries are already facing economic headwinds, with 17% of the State's refining capacity expected to shut down by the end of 2026. This is, of course, devastating for the thousands of people whose economic livelihoods are dependent on these facilities. But the damage will reach much further across the State. As a result of these refinery closures, California will increase its reliance on fuel imports, likely making it more vulnerable to supply disruptions and price spikes. Further loss of refining capacity could exacerbate these risks for consumers in a state already dealing with high prices at the pump.

It is also important to note the impact that a sizeable loss of California's emissions-intensive, trade-exposed (EITE) industries could have on consumer savings programs. Despite receiving free allowances, refineries and steel, chemical, and cement manufacturers still have to purchase the remaining allowances needed to cover their emissions. Were this industry demand for allowances to shrink, so too would revenues used for a wide variety of energy and environment-focused investments. This would also affect the revenues that California utilities could secure by auctioning off the free allowances CARB provides them with—revenues that utilities are required to pass along to customers in the form of bill reductions. (15d-TW-184.2)

Agency Response:

No changes were made in response to these comments. Please refer to Agency Response to comment O-1.3a regarding economic impacts on Californians.

O-1.3c Comment:

It is widely recognized that California has entered an unprecedented transition of these sectors placing unique strain not only on industry stakeholders, but also Californian workers and consumers. Mechanisms that protect emissions-intensive, trade exposed industries, including allocations of allowances and the Cap Adjustment Factor, must keep pace with the transition, not recede from it as ambition increases and economic conditions become more difficult. (BH-AM Rubio-4.1)

Agency Response:

No changes were made in response to these comments. The 15-day Amendments are keeping pace with both the ambition needed to support the State's climate targets, mitigation of leakage risk, and consumer affordability in light of difficult economic conditions.

Please refer to Agency Response to comment O-1.3a regarding economic impacts on Californians.

O-1.4 Multiple Comments: Program should prioritize cost containment, leakage prevention, and affordability alongside emissions reductions

Finally, CARB should ensure that the design of the program does not create incentives for excessive revenue generation that are disconnected from emissions-reduction objectives. The emissions cap determines the environmental outcome of the program. Auction revenue is a byproduct of the compliance system rather than its primary purpose. Program design should therefore prioritize cost containment, leakage prevention, and affordability alongside emissions reductions to preserve the long-term durability of California's climate policy framework. (45d-CCoC-374.7)

Comment:

Prioritize energy affordability and reliability over revenue generation. Climate policy that impoverishes the people it claims to protect is not good policy. It is a policy that has lost sight of its purpose. The Board should not be engineering deliberate cost escalation at a time when two major refineries are closing, gasoline imports are surging, and millions of Californians are already struggling with the highest fuel costs in the nation. (45d-Nemeth-228.8)

Agency Response:

Changes were made in response to these comments. Please refer to Agency Response to comments O-1.1a and O-1.3a regarding the specific changes made in response to affordability concerns.

AB 1207 extends the Cap-and-Invest Program through 2045 and requires CARB to determine the maximum technologically feasible and cost-effective GHG

reductions, while considering affordability for consumers and minimizing emissions leakage within California. AB 1207 also mandates that overall emissions from covered source under the Program decline at least in line with State climate targets and that the Program incorporate targeted design changes.

O-1.5 Comment:

Crude producers operate in a globally traded market and have limited ability to pass rising C&I compliance costs on to refiners without losing market share to imported crude that is not subject to comparable carbon costs. As C&I costs increase, refiners can more readily substitute lower-cost imports rather than absorb higher-priced in-state crude. This dynamic heightens leakage risk and undermines the competitiveness and long-term viability of California crude production without delivering proportional emissions reductions. (45d-CUSAI-296.17)

Agency Response:

Changes were made in response to these comments. Please refer to Master Response 1 in the Response to Comments on the Environmental Impact Analysis to comments regarding emissions leakage. Please also refer to Agency Response to comment O-1.1a regarding proposed changes to increase emissions leakage protection.

O-2 Assistance Factor

O-2.1a Multiple Comments: CARB should lower the 100% Assistance Factor

Our core concern lies in the staff's proposal for allowance allocation to covered entities. We do not believe that the proposed amendments reflect the stringency necessary to meet the 2030 and 2045 targets in the law. In 2025, through AB 1207, the Legislature reinstated CARB’s ability to adjust free allowance allocations to reflect actual leakage risk - however staff is proposing to keep 100% free allowances across industries until at least 2035 with no justification to how that aligns with legislative intent. (45d-CRPE-46.1)

Comment:

Align allowance allocations with an updated assessment of leakage risk by 2031. AB 1207 struck the requirement for CARB to treat all emission-intensive, trade exposed facilities (EITE) at 100% risk of leakage, and instead required CARB to distribute these allowances starting in 2031 "in a manner that minimizes emissions leakage risk" to cost-effectively meet the state's greenhouse gas reduction targets. However, the proposed C&I amendments maintain 100% EITE assistance through 2035, citing "uncertain future economic pressures," including tariffs, loss of federal funding, and changes to other emissions trading systems. CARB has stated they have recently analyzed leakage risk for EITE industries, which should serve as a basis to re-assess allowance allocations to

industrial facilities. While we recognize near-term uncertainties, we ask CARB to evaluate opportunities to align allowance allocations with an updated assessment of leakage risks by 2031.

Options for a pathway to reduce industry assistance by 2031 could include:

- Denote intent within the amendments to open a supplemental regulation in the next few years that would establish a decline for post-2031 EITE industry assistance factors based on updated economic analysis (as is done for the intended implementation of carbon capture, utilization and storage integration), in which CARB should identify opportunities for pre-2035 industry assistance factor declines.
- Align the reduction of EITE cap assistance factor for the cement industry in line with SB 596 targets to sector emissions reductions of 40% below baseline by 2035.
- Publicize CARB's leakage analysis for continued public input and review. (45d-NGC-292.3)

Comment:

IV. Updating Industrial Allocation to Reflect Actual Leakage Risk. We urge CARB to undertake a rulemaking by 2031 to evaluate leakage and reconsider the appropriate post-2031 Industrial Assistance Factor to reflect actual leakage risk, and establish a regular process for updating these values to ensure the program reflects real-world economic conditions and responds to the most current economic data.

a. CARB's assumption that all industries face the same, highest level of leakage risk through 2035 requires closer scrutiny...the range of assistance factors and leakage risk classifications from 2013 demonstrate that CARB's own analysis has previously shown that an assumption of 100% leakage risk across the board is not accurate. Furthermore, empirical evidence shows that GHG pollution regulation is not as susceptible to leakage as some may suggest. 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. In this case, protections for EITE industries were instrumental in preventing leakage, which points to the importance of preserving California's output-based allocation method and ensuring it is properly calibrated to real-world economic conditions. A study of the EU ETS also found that the system did not measurably harm European firms' competitiveness or cause leakage. More broadly, emissions mitigation policies can, over the medium and long term, make firms more competitive by aligning their operations with consumer and government standards for clean production. A 2023 study from McKinsey and NielsenIQ found that products making ESG-related claims have average sales growth 8% higher than products without such claims. In fact, CARB's own leakage analysis found that the program has been successful at preventing leakage through output-based allocation. California's current approach of

100% leakage assistance across the board makes it an outlier among similar subnational programs. California could look to its current linked partner, Quebec, for an example of how to successfully reduce industry assistance over time; Quebec started differentiating their assistance factors between 90-100% in 2021 based on risk classification. Washington, California and Quebec's potential future linked partner, offers another example: Washington's approach will have the benchmark adjustment factor for EITEs decline to 97% in starting in 2027. Beyond North America, the European Union's multi-national emissions trading system currently has leakage assistance factors set at 97.5% which will scale down to 51.5% in 2030. Rather than continue with an approach that is out of step with similar partners and inconsistent with CARB's past findings, CARB should recalibrate industrial assistance according to actual leakage risk.

b. Longer investment horizons for heavy industry necessitate early incentive to decarbonize 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. Covered entities in heavy industry typically make investment decisions over long capital planning cycles. If meaningful emissions reductions are not made in the early 2030s, we risk locking in higher-emitting, less efficient infrastructure and missing the opportunity to align major capital investments with California's long-term decarbonization pathway. By updating these arbitrarily set industrial assistance factors before 2035, CARB can redirect allowance value where it is most needed while increasing the economic incentive of covered industries to abate their emissions in the near-term. 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.

c. Over-allocation to industry based on artificially high leakage risk has real opportunity cost. 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. If, in each of those years, the industrial assistance factor was set to 95% instead of 100%, industry would have still received over 156 million allowances – a difference of 8 million allowances. 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.

d. CARB should publish updated leakage risk data and adjust assistance factors to avoid 'lock-in'. (45d-EDF-424.4)

Comment:

Additionally, per AB 1207 (Irwin, Chapter 117, Statutes of 2025), CARB was granted authority to adjust the assistance factors for emissions intensive, trade-exposed industrial sector allowances beginning in 2031, which has historically been frozen to prevent against leakage. The Proposed Amendments would keep the assistance factors at 100% until 2035. We are concerned that preserving the industry assistance factors at 100% until 2035 would not adequately deliver on climate goals or curate ideal program conditions. We understand that external economic factors that could influence leakage were considered, however, similar to the allowance budget proposed in the ISOR, we urge reconsideration with greater program stringency in mind. (45d-CEV-429.2)

Comment:

Align allowance allocations with an updated assessment of leakage risk by 2031. (45d-CE-383.7)

Comment:

CARB's proposal does not meaningfully adjust industry assistance in order to address ongoing harms to environmental justice communities from GHG and co-pollutant emissions. In fact, the proposal retains an unwarranted 100% leakage adjustment factor until 2035 without justification.

AB 32 requires CARB to feasibly ensure that Cap and Invest compliance does not disproportionately impact low-income communities. CARB's own environmental assessment correctly acknowledges that there is a wide gap in emissions reductions in disadvantaged communities. CalEPA's definition and CalEnviroScreen mapping of disadvantaged communities considers socioeconomic factors and indicates that industrial activities, refining, and extraction are overrepresented in disadvantaged communities. As CARB's own SRIA analysis acknowledges the cost of health impacts from pollution is significant. Yet CARB fails to adopt measures needed to address the emissions reductions gap. Leakage assistance is one of the significant CARB decisions that supports the reductions gap. CARB should reduce leakage assistance and use the tools of the program to pursue real emissions reductions as intended by AB 32. (45d-CBE-449.2)

Agency Response:

Changes were made in response to these comments. CARB is no longer setting post-2030 allocation in the Proposed Amendments. The initial Program design was to adjust the level of free allowance allocation based on each industrial sector's leakage risk over time using assistance factors, which were developed to calibrate allocation based on subsector leakage risk. At the start of the Program, assistance factors were set at 100% for all subsectors through the first

compliance period (2013-2014) and were set to decline in the second compliance period (2015-2017) and third compliance period (2018-2020) based on leakage risk. AB 398 directed assistance factors for all industrial subsectors to be 100% starting in 2021 through 2030. AB 1207 maintains that direction but allows CARB to adjust the assistance factors after 2030. As directed by AB 1207, the Proposed Amendments sustain the 100% assistance factor through 2030. CARB will analyze emissions leakage risk for covered facilities, including any updated data and information available, before proposing post-2030 assistance factors in a future rulemaking and will share any updated date and information as part of that public process.

Regarding the overallocation, the commenter does not specify why or on what basis industry was overallocated. It should be noted that industrial entities covered by the Program received free allowances covering approximately 62% of their total covered emissions in 2023. Under the Proposed Amendments, the ratio of allocation to covered emissions for 2027-2030 would be approximately 70% (assuming constant emissions). As shown in Table 1 in the Agency Response to comment O-1.1a, the ratio of allocation to covered emissions in other jurisdictions range from 72% to 100%.

In response to the potential impacts on vulnerable and overburdened communities, the suite of Proposed Amendments, led by the more stringent allowance budgets, will further incentivize reductions in the combustion of fossil fuels at covered stationary sources, many of which are located in low-income communities that also face the highest levels of air pollution in the State from both mobile and stationary sources (see the SRIA in Appendix C to the Initial Statement of Reasons). Aligned with findings of recent studies, while the Program is designed to reduce statewide GHG emissions, the greatest co-benefits of decreased air pollution emissions owing to facility level abatement measures are expected to accrue to the communities currently most impacted by air pollution (OEHHA 2022). See also Agency Response to comment V-3.8a.

Please also refer to Master Response 1 in the Response to Comments on the Environmental Impact Analysis to comments regarding emissions leakage.

O-2.1b Multiple Comments: CARB should lower the 100% Assistance Factor

(2) Reduce leakage assistance to the oil and gas industry... CARB must reduce overly generous leakage assistance. In SB 1207 (2025), the California Legislature returned the power to set leakage rates to reflect actual leakage. No analysis has been provided to justify why CARB is retaining 100% leakage assistance across the board until 2030 and increasing allowances for refineries on top of the new MDI. This is particularly unsettling for oil and gas assistance, because setting leakage rates at 100% has not solved the

problem it sought to address in the first place - preventing refinery closures. Despite leakage assistance being set at 100% by the Legislature in 2017, refineries have elected to close, due in large part to global market factors in a trend that predates California's climate programs.2 Despite windfall profits from increased gas prices, the oil and gas industry continues to receive lavish Cap-and-Invest benefits. Leakage assistance for oil and gas infrastructure, including refineries, has never resulted in a tangible benefit to Californians. As raised in our prior comments, CARB's ISOR analysis fails to account for these significant concerns. CARB must reevaluate leakage assistance to prioritize achieving the state's climate goals and reducing emissions. (15d-EJC-124.2)

Comment:

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. 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. (15d-EDF-175.10)

> **Agency Response:**
> No changes were made in response to these comments. Please refer to Agency Response to comment O-2.1a.

O-2.2a Multiple Comments: Support of 100% Assistance Factor

NAIMA notes that in the Plan, CARB is not proposing any changes to this 100 percent AFs for fiber glass manufacturing. NAIMA endorses keeping assistance factors at 100 percent. CARB's 2016 decision was based on sufficient fiber glass insulation production capacity in other state jurisdictions that could adequately supply any production decreases from the California manufacturing plants, which would increase emissions in those other state jurisdictions while decreasing production and employment in California. These same facts continue to be equally relevant today. (45d-NAIMa-275.1)

Comment:

We strongly support the proposal to extend the 100% assistance factor through 2035 as proposed in revised Table 8-1 of §95871. It is clear from recent events, including

ongoing and announced refinery shutdowns, that the refining industry is trade exposed, resulting in a shift of production and increased imports to the state. (45d-AP-351.1)

Comment:

Kern is encouraged by Staff's proposal to revise Section 95871, Table 8-1, confirming an extension of a 100% Assistance Factor for the petroleum refining sector through budget year 2035. Maintaining this maximum assistance is an important and appropriate recognition of the leakage risk facing California refiners. Kern supports CARB's action to extend the Assistance Factor in recognition of current and future economic pressures that will continue to affect emissions leakage, and as further means to close the identified gap on a historically stringent approach to industrial allocations. (45d-KE-392.3)

Comment:

We appreciate CARB maintaining the 100% assistance factor for all industry activities through 2035. This is one way to assist in mitigating some of the costs of this regulation. (45d-ACC-433.4)

Comment:

Given that one of the main tenants of the Cap-and-Invest Program is to minimize emissions leakage, CIPA appreciates CARB following through on the statutory intent of both AB 398 and AB 1207 in retaining a 100% Assistance Factor for industrial allocation through 2035. (45d-CIPA-369.6)

Comment:

The Cap-and-Invest workshop highlighted the need to maintain adequate industrial allocations through 2030 and beyond to minimize emissions leakage and preserve California's manufacturing base. Propane users, including households, food processors, metal fabricators, agriculture operations, warehousing, and rural industrial sites, are directly affected by changes in allowance allocations, as propane is often their sole fuel for process heat and backup power. WPGA supports CARB's intent to keep 100% assistance factors through 2030, as mandated by AB 1207, and to design a post-2030 allocation methodology that minimizes leakage risk and maintains affordability. (45d-WPGA-401.6)

Comment:

Phillips 66 appreciates CARB's proposal to set the assistance factor at 100% through 2035 for all EITEs irrespective of the leakage risk classification (High, Medium, Low). (45d-PC-416.6)

Comment:

For the reasons set forth above, CSCME respectfully urges CARB to: Maintain assistance factors at 100% while acknowledging that the program's failure to differentiate leakage protection across risk categories must be addressed through complementary mechanisms, particularly the CAF, a BCA, and the MDI. (45d-CSCME-352.7)

Agency Response:

No change was made in response to these comments. Staff appreciates the commenters' support for sustaining the 100% Assistance Factor. However, as explained in Agency Response to comment O-2.1a, CARB removed the proposed assistance factors for 2031-2035, since CARB is also no longer setting post-2030 allocation.

Please also refer to Agency Response to comment O-1.1a regarding proposed changes to increase emissions leakage protection.

Pursuant to AB 1207, "commencing January 1, 2031, the state board shall distribute industrial sector allowances in a manner that minimizes emissions leakage risk to cost-effectively achieve the requirements of Sections 38562.2 and 38566 and the purposes of this division." CARB plans to assess emissions leakage risk for covered facilities, including any updated data and information available before proposing post-2030 assistance factors for industrial allowance allocation in a future rulemaking.

O-2.2b Multiple Comments: Support of 100% Assistance Factor

Under the April 14, 2026 modified text, the mineral wool industry (specifically the manufacturing of mineral wool, industry code 327993) is proposed to maintain a 100 percent industry assistance factor. As established by AB 398, all industrial sectors, including mineral wool and fiber glass, continue to receive a 100 percent assistance factor through 2030. Under the new Senate Bill 840 extension, CARB has the authority to adjust these AFs after 2030 based on updated leakage risk studies. NAIMA supports these provisions that retain 100 percent assistance factors. In addition, NAIMA also strongly endorses the critical role that energy efficiency will continue to play in meeting CARB's goals and related goals concerning climate, energy, health, equity, and the environment. Energy efficiency such as achieved through insulation is at the heart of the CARB program. (15d-NAIMA-90.5)

Comment:

While we had supported the extension of the 100% assistance factor through 2035 as originally proposed in the 45-Day changes in revised Table 8-1 of §95871, we

understand the rationale in the 15-day package of reverting to 2030 based on the leakage study that CARB is progressing. Still, C&I is an important cost driver, and potential decarbonization incentive, for covered facilities, and providing long-term visibility regarding allowance allocation is important to maintaining market certainty and supporting planning and investments. Accordingly, we request that if changes are made in the future to industry assistance factors – and especially if they were to be lowered based on the study – that as much advance notice be given so that the changes and related costs can be accommodated in company operating plans. Most companies operate with at least a 5-year planning horizon, so we would ask for at least that much advance notice prior to any changes in assistance factors. (15d-AP-83.1)

Comment:

Kern was encouraged by Staff's initial 45-day rulemaking proposal to extend the 100% Assistance Factor for the petroleum refining sector. Maintaining this maximum assistance is an important and appropriate recognition of the leakage risk facing California refiners. (15d-KE-109.8)

Comment:

PSG supports CARB's proposal to maintain the 100% assistance factor for all covered industrial sectors through 2035. This reflects the Legislature's direction under SB 1207 and is well-calibrated to the current economic environment, in which leakage risks — including tariff-related supply chain disruptions, loss of federal industrial decarbonization funding, and developments in other jurisdictions' carbon pricing regimes — remain significant and in some respects are growing.

However, PSG urges the Board to recognize that the 100% assistance factor is a uniform instrument that does not distinguish among sectors by their actual leakage risk exposure. CARB's own analytical framework — which classifies sectors as having high, medium, or low leakage risk based on emissions intensity and trade exposure, as established in the 2010 Appendix K leakage analysis and reflected in Table 8-1 of the current regulation — provides the appropriate basis for providing differentiated leakage protection beyond the 100% assistance factor for the highest-risk sectors.15 PSG encourages CARB to identify mechanisms, including the MDI discussed below, to provide additional leakage mitigation to sectors classified as High risk in Table 8-1. (15d-PSG-107.8)

Comment:

We support CARB's removal of the post-2031 industry assistance factors from the proposed rules and appreciate CARB's intention to determine post-2031 assistance factors and allowances budgets in a future rulemaking based on analysis of leakage risk, in line with AB 1207's intent. (15d-CEEJTPHAG-132.8)

Agency response:

No changes were made in response to these comments. Staff appreciates the commenters' support for sustaining the 100% Assistance Factor through 2030.

See also Agency Response to comment O-2.2a regarding assessment of assistance factors in a future rulemaking.

O-2.3a Comment:

While Ag Council and Dairy Institute appreciate CARB maintaining the 100% assistance factor for all industry activities through 2030, we are concerned that CARB shortened the life of the allowances by five years in these proposed amendments. The previous draft extended 100% free allowances through 2035 and this amended version shortens the timeframe to 2030. This is only four years away -- creating substantial uncertainty within the sector. We are opposed to this change and request the assistance factors be reinstated through 2035, as in the previous draft. Maintaining the assistance factors is one of the most critical ways to mitigate some of the costs of this regulation. Ag Council and Dairy Institute disagree with CARB's shortening of the length of the timeframe and also the designation of various types of food and beverage processing as "medium," risk factor and we believe the industry belongs in a "high," leakage risk category. California's food processing sector operates on thin margins while facing volatile input prices. Recent inflationary pressures have increased costs of various inputs including (but not limited to) packaging, transportation, energy and raw products. California also pays some of the highest wages in the country, to the benefit of the workforce, but further eroding any funds that might be utilized to make climate-friendly capital investments. Simply put, California is at a disadvantage when competing with other states and countries in the business environment. We urge CARB to move all segments of the food processing industry to "high," leakage status. We will work with CARB to provide additional data in the coming months to assist with changing this determination. (15d-ACC-102.5)

Agency response:

No change was made in response to this comment. Replacing "2035" with "2030" as the final year in which assistance factors are established in the Proposed Amendments aligns with the proposed changes to the updated cap adjustment factors in Table 9-2 and the removal of post-2030 allocation. The aim of the Proposed Amendments is to is to provide flexibility to set leakage protection post-2030 in a future rulemaking while retaining emissions caps through 2045 to send long-term market signal. Pursuant to AB 398 and AB 1207, CARB staff is continuing to evaluate potential complementary mechanisms after 2030 to address the risk of emissions leakage for covered industrial emissions. Post-2030 allocation will also be informed by updated data on leakage as available.

Recommendations from the AB 398 evaluation for any new or revised leakage risk assessments or additional measures from that evaluation may inform future rulemakings.

Please also refer to Agency Response to comment O-2.1a.

Please refer to O-13.1 for Agency Response regarding reclassifying leakage risk for refining sectors and food sectors from “medium” to “high".

O-2.3b Comment:

Good afternoon Chair and Board members. My name is Elise Lanman. Apologize for my spelling. And I'm here representing Dairy Institute of California. Dairy Institute of California represents milk processors and dairy product manufacturers based in California. We recognize and support California's climate goals and the importance of reducing greenhouse gas emissions. Our industry has invested significantly in efficiency, cleaner technologies and emissions reductions. Our members are dedicated to building a lower carbon future, but we believe the future must also be economically workable for the businesses that process and manufacture food in California. The proposed allowance budget through 2045 combined with reduced certainty or assistance factors through 2030 raises serious concerns about affordability -- affordability competitiveness and leakage. California food processors already face some of the highest operating costs in the country including labor, energy, transportation, packaging and compliance costs. Many operate on thin Margins while competing with imports and facilities located in lower cost states. This year Leprino Foods announced the closure of its Lemore East Plant Mozzarella manufacturing facility in California citing high operating costs, while opening a new facility in Texas. We've also seen companies reduce operations, expand elsewhere, or leave the state entirely. We urge CARB to restore certainty by reinstating assistance factors through 2035 recognizing food processing as a high leakage sector and expanding affordable compliance pathways through incentives, such as the Manufacturing Decarbonization Incentives. Those incentives should complement, not replace, cost containment measures. (BH-DIC-203.1)

Agency response:

No change was made in response to this comment. Please refer to Agency Response to comments O-2.1a and O-2.3a.

O-3 General Industrial Emissions Leakage

O-3.1 Comment:

SVM recommends that CARB update its policy for process emissions and adopt a more liberal definition for process emissions. In particular, processes such as SVM that

require thermal energy in order to extract brine from the lakebed should be classified as process emissions because there are no substitutes for thermal energy. The process cannot be electrified and the application of a stringent cap-adjustment factor will not encourage lower carbon options, such as electrification. (45d-SVM-386.2)

Agency Response:

No change was made in response to this comment. The definition of process emissions is used to identify non-combustion emissions derived from the processing of raw materials and was not opened in this rulemaking. Thus, this request is out of scope of this rulemaking. However, emissions associated with thermal energy derived from fossil fuels can be reduced by switching fuels to lower carbon alternatives. The Proposed Amendments include a Manufacturing Incentive Allocation (MDI) to incentivize the use of eligible low-carbon fuels by covered industrial facilities.

O-3.2a Multiple Comments: Align the regulation with requirements to minimize leakage risks

Structure the new regulation appropriately and consistent with governing law.....CARB should carefully structure the proposed changes to C&I in a way that accounts for existing legal frameworks and governing statutes. Many of the suggestions in this letter will help CARB do so.

Specifically, CARB should be mindful that the severe effects of diminishing the cap allowances could violate federal protections for economic and property interests given the extensive compliance costs, which diminish in-state producers' market competitiveness and have forced many refineries to close. (45d-CH-348.7)

Comment:

CARB is legally required to consider domestic leakage (often called "interstate leakage") under the California Global Warming Solutions Act (AB 32). The statute mandates that CARB design regulations to minimize leakage to the "maximum extent feasible" to ensure California's climate progress isn't canceled out by a simple shift in production to neighboring states like Arizona or Nevada, or even transport from locations further away. Section 38562(b)(8) of the Health and Safety Code specifically highlights this obligation. It is especially important to consider leakage in this rulemaking, as California confronts an affordability crisis. Additionally, California will need all the building products it can get to assist in rebuilding from the fires of early 2025 and to address the housing shortage generally.

Many industry groups argue that CARB's current "benchmarks" for free allocation are too stringent and don't fully account for the rising cost of electricity and natural gas in

California compared to the rest of the U.S., which they claim is a form of “cost-driven” domestic leakage. (45d-NAIMa-275.3)

Comment: Form Letter 1 (160 Submissions)

CARB should carefully structure the proposed changes to C&I in a way that accounts for existing legal frameworks and governing statutes. Many of the suggestions in this letter will help CARB do so. Specifically, CARB should be mindful that the severe effects of diminishing the cap allowances could violate federal protections for economic and property interests given the extensive compliance costs, which dimmish in-state producers' market competitiveness and have forced many refineries to close. (45d-FL1.6)

Agency Response:

Changes were made in response to these comments. Emissions leakage protection was increased in the 15-day Amendments by increasing the cap adjustment factor in the allowance allocation formula through 2030. See Agency Response to comment O-5.1a. Please also refer to Agency Response to comment O-1.1a regarding changes affecting refinery stationary source costs, fuel imports, affordability, and how the proposed change help mitigate emission leakage. Please refer to Master Response 1 in the Response to Comments on the Environmental Impact Analysis regarding emissions leakage.

The Program calculates the amount of free allocation by multiplying production, cap adjustment factor, assistance factor, and sector-specific product benchmark. Benchmarks are set based on existing covered facilities’ historical data on energy use and GHG emissions to set benchmarks that account for GHG emissions at the facility and GHG emissions associated with use of purchased electricity. The purpose of product benchmarks is to provide allowance allocation to mitigate GHG emissions leakage based on production and reward efficient facilities. Product benchmarks are designed to address GHG emissions leakage not all energy costs faced by a facility.

As stated in the ISOR, staff are in the process of evaluating leakage risk and potential measures to reduce leakage risk for covered industrial sectors. During the October 2025 public workshop, staff provided an overview of the key contractor findings for industrial leakage and concluded that the leakage risks of key covered sectors were largely unchanged from the assessment conducted at the outset of the Program in 2010 (CARB 2025j,CARB 2010a). The assessment also confirmed that the current output-based allocation approach continues to be effective in addressing leakage risks for emissions-intensive and trade-exposed industries. Furthermore, there is no evidence that the Program has caused California refineries to close. There are many factors that impact business

decisions and environmental program compliance costs are not major drivers of costs to operate in state. The Cap-and-Invest Program is specifically designed to minimize leakage that may result from the implementation of this program through free allowance allocation.

Recommendations from the AB 398 evaluation for any new or revised leakage risk assessments or additional measures from that evaluation may inform future rulemakings, including post-2030 allocation.

Lastly, CARB has carefully structured the Proposed Amendments to meet all legal requirements and governing statutes. The Program also has several cost-containment and compliance assistance measures to support covered entities' compliance. Since the commenter has not provided any further information and the comment lacks specificity, no further response is required or able to be provided.

O-3.2b Multiple Comments: Align the regulation with requirements to minimize leakage risks.

Minimize emissions leakage while preserving allowance supply, market stability, and affordability for covered entities. (15d-BAC-61.5)

Comment:

Consider implementing new or existing regulatory mechanisms to better prevent leakage based on the latest leakage studies and sector information. (15d-BAC-61.8)

Comment:

The 15-day amendments introduce additional complexity into an already highly technical program. As CARB finalizes these changes, it is critical to ensure implementation remains administratively feasible and does not create unintended compliance burdens. CMTA encourages CARB to: Provide sufficient lead time and clear guidance for regulated entities to adapt to new requirements; Ensure that any new definitions, compliance mechanisms, or administrative processes are transparent and consistently applied; and Continue robust stakeholder engagement prior to finalizing significant structural changes. CMTA appreciates CARB's ongoing work to strengthen the Cap-and-Invest Program. However, the proposed 15-Day Amendments should be further refined to ensure they do not undermine leakage mitigation, increase cost volatility, reduce transparency, or discourage industrial investment in California. (15d-CMTA-204.6)

Comment:

It is especially important to consider leakage in this rulemaking, as California confronts an affordability crisis. Additionally, California will need all the building products it can get

to assist in rebuilding from the fires of early 2025 and to address the housing shortage generally. Many industry groups argue that CARB's current "benchmarks" for free allocation are too stringent and don't fully account for the rising cost of electricity and natural gas in California compared to the rest of the U.S., which they claim is a form of "cost-driven" domestic leakage. (15d-NAIMA-90.4)

Comment:

Leakage as a structural design problem. California's industrial allocation ratio remains the most stringent among major comparable carbon programs, in an economic environment where leakage is no longer hypothetical, increasing the number of industrial assistance allowances will directly reduce costs for businesses and consumers. The 15-Day improvements help. They do not resolve the underlying structural asymmetry between in-state production facing a binding compliance cost and imports that do not. The next rulemaking cycle is the right moment to evaluate these issues. (15d-CBC-201.21)

Comment:

We ask CARB to articulate that the post-2030 CAF and Assistance Factor values will be addressed in the next Cap-and-Invest rulemaking, that the analysis informing those values will include the formal AB 398 leakage report that Health and Safety Code § 38562(c)(2)(I) required by December 31, 2025, information collected during this rulemaking, and that the post-2030 design will preserve protective allocation at levels consistent with the documented leakage conditions in covered sectors. The commitment does not require resolving the methodology now but is a commitment to preserve well-paying jobs in California that deliver critical energy supplies to people within and outside of California. Second, we ask CARB to consider, in the next rulemaking and through the Scoping Plan update, whether the post-2030 leakage-risk safeguard should be responsive to objective indicators of in-state production decline, rather than as a set function of the allowance budget trajectory. Several letters in the 45-day record, including ours, made the case for that design. We continue to believe it is the more durable approach. (15d-CBC-201.10)

Agency Response:

No changes were made in response to these comments. Please refer to the Agency Response to O-3.2a on emissions leakage. Regarding additional complexity and feasibility, the commenter was not specific about what elements in the Proposed Amendments specifically concern them. CARB staff is confident the Proposed Amendments are clear and implementable and given the absence of specific recommendations no changes were made and no further response is required.

Also see Agency Response to comment O-5.4a regarding addressing post-2030 allowance allocation.

O-3.3 Comment:

While the new Incentive Allocation and updated cement definition provide a strong step in the correct direction for industrial decarbonization, the proposed amendments fail to adopt a long-term strategy for right-sizing the price signal for EITE facilities and dealing with leakage risk. This creates market uncertainty about whether California will provide policy tools that protect against leakage as the state moves to achieve 85 percent emissions reductions by 2045...The proposed amendments delay potential reductions until after 2035, and CARB has not provided certainty about the timing of a future rulemaking that would address EITE allowances if conditions change... The lack of direction of enacting a price signal on EITE facilities creates market limbo and uncertainty about the presence of long-term solutions that would protect instate support for industry decarbonization as California transitions to reduce its emission by 85 percent through 2045. (45d-NRDC-376.13)

Agency Response:

No changes were made in response to this comment. Please refer to Master Response 1 in the Response to Comments on the Environmental Impact Analysis regarding emissions leakage.

Please also refer to the Agency Response to comment O-1.1a regarding changes affecting emissions leakage, refinery stationary source costs, fuel Imports, and affordability. It should be noted that CARB is not setting post-2030 CAFs in the Proposed Amendments but sets annual allowance budgets through 2045 to send a long-term market signal. Post-2030 CAFs will be considered as part of a future rulemaking, which provides time to continue to work through stakeholder concerns and for economic circumstances to stabilize.

CARB plans to further assess emissions leakage risk for covered facilities, including any updated data and information available before post-2030 assistance factors for industrial allowance allocation in a future rulemaking.

O-3.4 Multiple Comments: GHG Emissions Leakage Concerns

Environmental Leakage and Global Emissions Climate policy is most effective when it reduces global greenhouse gas emissions, rather than simply shifting emissions geographically. When regulatory costs diverge significantly between jurisdictions, economic activity may sometimes relocate rather than disappear. In energy markets, this dynamic can result in increased reliance on imported fuels produced under different environmental and regulatory frameworks. California currently imports a substantial portion of the crude oil processed in its refineries and the gasoline used every day by

Californians. Production practices and environmental safeguards in some exporting regions differ meaningfully from those enforced in California. In certain regions of the world, routine flaring and venting of associated gas releases methane and other pollutants that contribute significantly to climate change and local air quality degradation. Methane emissions are particularly relevant given methane's high global warming potential, approximately 84 times greater than carbon dioxide over a 20-year time horizon. As a result, upstream methane releases from oil and gas production can significantly affect the overall lifecycle greenhouse gas intensity of fuels, as is the case in Iraq – California's largest source of foreign oil imports. Another aspect worth considering is the structure of regulatory coverage across global supply chains. While fuels consumed in California ultimately fall under the state's Cap-and-Invest compliance framework, fuel production occurring outside California is not subject to California's carbon pricing system or environmental regulatory standards. As a result, upstream emissions associated with foreign crude extraction and fuel production occur largely outside the regulatory scope of California's program.

The broader point is that global supply dynamics and lifecycle emissions matter when evaluating the net climate impacts of policy changes. Policies that significantly alter the balance between in-state production and imported fuels could influence global emissions outcomes depending on the environmental standards governing those sources. For this reason, it may be useful for policymakers to consider the possibility that emissions reductions observed within California's regulatory boundaries could, under certain circumstances, be offset by increases in emissions occurring elsewhere in global supply chains, especially considering California is already importing substantial amounts of foreign crude oil and gasoline which have high levels of associated emissions and pollution due to the lack of regulations in their respective areas of production and refining abroad. (45d-Silvi-444.1)

Comment:

Another consideration relates to environmental justice and how climate policy decisions can influence the geographic distribution of environmental impacts. California's environmental justice framework recognizes that environmental benefits and burdens should be shared fairly and that pollution should not simply be shifted from one community to another. Because petroleum demand remains strong in California and will continue to for the foreseeable future, reductions in in-state oil production or refining capacity do not necessarily reduce California's demand for fuels used in transportation, goods movement, agriculture, and other essential activities. Instead, reduced local supply can lead to increased reliance on imported crude oil and refined fuels from other regions of the world. In many cases, oil production in exporting regions occurs under environmental and regulatory standards that differ significantly from those enforced in California. Practices such as routine gas flaring, methane venting, and weaker

environmental protections can result in higher upstream greenhouse gas emissions as well as localized air pollution, negative ecosystem impacts, and severe ecological destruction. As a result, when in-state production declines and imports increase, a portion of the environmental burden associated with fuel production is effectively shifted to communities outside California, including communities that already face environmental, economic, or governance challenges such as those in Iraq, where air pollution from oil field flaring is leading to high cancer rates, and Ecuador, where tribal lands have been stolen and polluted by oil companies recklessly developing oil reserves in the Amazon Rainforest – often clearcutting millions of acres of the rainforest to do so while spilling oil constantly. From an environmental justice perspective, this raises the question of whether emissions reductions achieved within California's regulatory boundaries may cause increased pollution and emissions impacts elsewhere as a result of making California oil production and refining prohibitively expensive, compared to imported oil and fuel, by means of emissions programs that only impact oil production and refining which occur within California. Considering these global supply chain dynamics may therefore help ensure that climate policies reduce pollution overall rather than unintentionally exporting emissions and environmental burdens to other populations. (45d-Silvi-444.2)

Agency Response:

No changes have been made in response to this comment. Please refer to Master Response 1 in the Response to Comments on the Environmental Impact Analysis to comments regarding emissions leakage. Please also refer to O-1.4 Agency Response regarding proposed changes to increase emissions leakage protection.

O-3.5 Comment:

Also, these regulations need to adequately recognize the leakage risk, a risk we are already actively seeing play out. (15d-IBB-11.2)

Agency Response:

No change has been made in response to this comment. Please refer to Master Response 1 in the Response to Comments on the Environmental Impact Analysis and Agency Response to comment O-1.4 emissions leakage protection.

O-3.6a Multiple Comments: Merchant Refineries and Stationary Source Costs

The C&I program places meaningful carbon compliance costs on in-state petroleum refiners. When fuels refined out of state are imported into the California market without facing comparable carbon-related costs, the program risks emissions and economic leakage, disadvantages in-state facilities, and undermines California’s environmental objectives. CARB should ensure that in-state and out-of-state refiners face equivalent

carbon costs when supplying the California market, using a durable set of leakage-mitigation measures before 2030 to provide long-term protection for in-state petroleum refining. CARB should also ensure that all in-state refiners face equivalent carbon costs. Under the current proposal, CARB is providing a two-year delay in compliance only for Independent Merchant Refineries. There is no basis in the program for treating Independent Merchant Refineries differently, and it exacerbates competitive differences, rather than promotes parity, between refiners.

Maintaining parity requires a policy design that complements, rather than replaces, existing leakage-mitigation tools (including industrial allowance allocation) and works alongside the carbon price so that suppliers, whether in-state or out-of-state, face comparable carbon costs when serving California. CARB reached a similar conclusion in the findings of its industrial leakage study that it was required to perform under HSC § 38562.2 In the October 2025 Workshop, CARB concluded that “Border carbon adjustments can mitigate leakage and reduce non-California EITE emissions. Unfortunately, the proposed regulation does not include measures to put in-state and out-of-state refiners on a level playing field to mitigate leakage long term. (15d-CUSAI-62.2)

Comment:

CARB should broaden its proposed definition of “Independent Merchant Refinery” (IMR) to include products beyond gasoline and to include broader corporate structures. The current definition of an IMR is designed to apply to facilities that produce more than one million barrels of motor gasoline blendstock annually and are owned by non-integrated standalone companies. However, this definition would not apply to various corporate structures, given that a standalone company, by definition, has no subsidiaries or parent entities. Further, many refineries produce additional products other than gasoline that also incur Cap-and-Invest compliance obligations. Given these limitations, in the interest of fairness, the applicability criteria should be broadened to include other products and to remove the “standalone” requirement.

The IMR designation is currently referenced in only one proposed provision: permitting a two-year deferral of the triennial compliance surrender for the 2024-2026 compliance period, thereby extending the deadline from 2027 to 2029. However, this provision fails to account for the fact that the Cap-and-Invest regulation precludes the use of future vintage allowances for current-year compliance obligations. Specifically, other than the use of true-up allowances, no 2027, 2028, or 2029 allowances may be applied toward the triennial compliance surrender for the 2024-2026 compliance period. Consequently, an entity would still be required to purchase 2026 allowances at auction or on the secondary market; therefore, this provision would not reduce current costs but would merely delay the actual surrender of compliance instruments. To render this provision

workable for all of the refining industry, CARB should temporarily suspend until 2031 the restriction against using future vintage allowances for past or current compliance obligations. (15d-WSPA-164.12)

Comment:

Kern has assessed the potential short-term relief offered by this provision and recommends that Staff incorporate additional considerations to fully and more effectively achieve the intended flexibility and protections for in-state gasoline production.

Kern proposes that Staff extend the option to delay annual compliance beyond a single compliance period obligation, allowing an Independent Merchant Refinery to exercise a delay for future compliance obligation periods beyond 2027. Creating this option as a permanent feature would provide CARB flexibility in addressing unpredictable market volatility or disruptions without the need for future rulemakings. Kern urges CARB to also incorporate an option whereby the Executive Officer may grant optional hardship relief for an Independent Merchant Refinery that has utilized the delay and demonstrates disproportionate economic hardship. This inclusion further provides flexibility currently absent from the program and gives discretion to the Executive Officer to act in situations threatening California's critical transportation fuel infrastructure and supply. (15d-KE-190.2)

Agency Response:

No changes were made in response to these comments. Please refer to the Agency Response to Comment O-1.1a regarding changes made to address emissions leakage and stationary source costs, and Agency Response to comment O-4.1a regarding a border carbon adjustment and the potential for future additional measures to reduce leakage risk for covered industrial sectors. Regarding the optional delay in the deadline to meet the full compliance period compliance obligation for covered emissions associated with a facility that is an Independent Merchant Refinery, this provision ensures that all covered emissions from an Independent Merchant Refinery have a compliance obligation under the Program while providing additional near-term flexibility to help manage compliance costs. This provision reflects unique circumstances of entities that are not vertically integrated. As described in the 2010 FSOR (CARB 2011), the restriction on use of future vintage allowances to satisfy past compliance obligations is a fundamental aspect of the program to ensure the environmental integrity of the cap.

The commenters also request that the option to delay the full compliance period compliance deadline be extended beyond a single compliance period. The one-time delayed full compliance period compliance obligation provides additional, but limited, flexibility in managing near-term compliance costs, in recognition of

the extraordinary circumstances of the current global energy disruptions. Extending this delay in satisfying compliance obligations beyond November 2029 at this time would be overly speculative about the persistence of these circumstances and would deviate from the purpose of addressing current circumstances by providing near-term flexibility.

O-3.6b Comment:

Madam Chair, members of the Board, my name is Melinda Palmer. I'm here on behalf of Kern Energy as their Vice President of Regulatory and Public Affairs. Kern Energy is a 27,000 barrel a day refinery located in southern San Joaquin Valley. We've been in operation for more than 90 years. We're family owned, employ about 200 people, and play a vital role in our region by supplying the critical transportation fuels needed for agriculture, major transportation corridors, local industry and the public. We're the only refinery located between the Bay Area and Los Angeles and we're the only small refiner remaining in California producing both gasoline and diesel.

In response to the 15-day package, Kern provided broad support for the inclusion of the independent merchant refiner provision, the option to delay a full compliance period. And we appreciate staff's critical recognition of the unique market positions these refineries hold, the immense financial pressures associated with the global crude and gasoline markets, and the need for flexibility and simultaneously navigating operations, compliance costs and investments.

We assessed the short-term relief this provision would offer and recommend that staff incorporate additional considerations to fully and more effectively give the flexibility and achieve the intended protections for in-state gasoline production. I urge you today to direct staff to move quickly in bringing these additional flexibilities forward and incorporating them into the regulation as soon as possible.

Specifically, we ask to extend the option to delay beyond the single compliance period. This would create a permanent future that would give CARB flexibility in addressing unpredictable market volatility or disruptions without the need for future rulemakings. We believe that giving discretion to the Executive Officer to act in situations that threaten California's critical transportation fuel infrastructure is necessary. I believe the language in the implementing Board resolution provides a helpful— (BH-KE-152.1)

Agency Response:

No changes were made in response to this comment. Please refer to the Agency Response to comment O-3.6a.

O-3.7 Multiple Comments: General support

In addition to avoiding economic damages, CARB's attempt to prevent the relocation of California's manufacturing facilities would maintain the integrity of the State's primary

objective for its Cap-and-Invest program: fighting climate change. The proposed amendments acknowledge that, to achieve California's climate goals, emissions reductions must be real and not simply offset by increases elsewhere. Given the rigorous environmental standards in the US (and in California in particular), there is a high likelihood that displacement of industrial activity from California to most likely destinations would result in an increase in global GHGs and other pollutants, not simply a one to one trade. Therefore, pairing a tightening emissions cap with provisions to avoid emissions leakage advances both the letter and spirit of the State's climate mandate. (15d-TW-184.3)

Comment:

RFG recognizes and appreciates that CARB included several modifications in the Proposal responsive to concerns raised during the 45-day comment period, including increased cap adjustment factors (“CAFs”) for industrial sectors, expansion of the Manufacturing Decarbonization Incentive (“MDI”) allocation to petroleum refineries, and a 30% set-aside of natural gas supplier allowances for low-income ratepayers. RFG expressly supports these changes and urges CARB to retain them if any further modifications are made to the rulemaking. (15d-RFG-189.1)

Comment:

Ag Council and Dairy Institute support CARB’s efforts to minimize leakage through a robust assistance factor, allowance allocation and various incentive programs. We also support CARB’s inclusion of additional allowances for those who can move to electrification and for those who can utilize the Manufacturing Decarbonization Incentive Allocation, however, many in the food processing sector have already achieved as much as possible and any additional projects will have minimal ROI when compared to the upfront investment costs. Ag Council and Dairy Institute support the overall concept of expansion of MDI as a way for CARB to incentivize covered entities to create additional GHG reductions in a way that ensures long-term adoption of these projects. While the underlying goals of MDI are innovative and creative, clear and predictable implementation will need to be worked through with the business community in order to maximize engagement and success of the program. We support the Chamber’s comments regarding the need to provide more clarity regarding implementation, and we look forward to working with CARB to create mutually beneficial outcomes through MDI. (15d--ACC-102.7)

Agency response:

No changes were made in response to these comments. Staff appreciate the support for the Proposed Amendments.

Please refer to Agency Response O-3.2a and Master Response 1 in the Response to Comments on the Environmental Impact Analysis to comments regarding emissions leakage.

Please refer to Master Response 4 in the Response to Comments on the Environmental Impact Analysis to comments regarding impacts of MDI allocation and guardrails to provide accountability and transparency.

O-3.8 Comment:

Kern provides broad support for the inclusion of new paragraph 95856(f)(3)(A), which provides an Independent Merchant Refinery the option to delay its full compliance period obligation. This new provision is a critical recognition by Staff of the unique market positions these refineries hold, the immense financial pressures associated with global crude oil and gasoline markets, and the need for flexibility in simultaneously navigating operations, compliance costs, and investments. (15d-KE-190.1)

Agency response:

No changes were made in response to this comment. Staff appreciate the support for the Proposed Amendments.

O-4 Additional mechanisms to minimize emissions leakage for products entering the state

O-4.1a Multiple Comments on additional mechanisms to minimize emissions leakage for products entering the state:

Implement an incremental BCA framework for imported cement without further delay, consistent with the mandates of SB 596, AB 32, and AB 398.

- Adopt a two-phase approach that establishes a practical, defensible interim framework immediately, while expanding and refining the program over time as needed.
- Use conservative default emissions factors where facility-specific data is unavailable, while providing importers with an incentive to report product- and plant-specific data.
- Recognize that the BCA and the allowance allocation framework are complementary tools that must work in concert to effectively minimize leakage risk.
- Most importantly, CARB should avoid making the perfect the enemy of the good — the risks of further delays are mounting, and California has the statutory authority, the legal precedent, and the technical tools needed to act now. (45d-CSCME-352.2)

Comment:

Commit to implementation of a Border Carbon Adjustment for the cement sector, with a specific timeline. Fundamentally, each year moving forward under Cap-and-Invest without an incremental BCA makes NCC and the California industry even less competitive against imports. It is unfair that our Cap Adjustment Factor (CAF) continues to decline while this fairness gap continues to widen. It is impossible for NCC and the California industry to commit to meaningful step-change investments without protection against imports via a BCA. We urge CARB to commit to specific timelines to implement a BCA for the cement sector. For extensive supporting detail and rationale, please see the CSCME comment letter. (45d-NCCC-418.1)

Comment:

In combination with a leakage-triggered CAF safeguard, a deployable MDI structure, continued free allocation calibrated to objective indicators, and administrative clarity on offsets and CCUS, a CBAM can form part of an integrated leakage-protection architecture. No single mechanism is sufficient. Together, they can maintain environmental ambition while preserving industrial competitiveness and consumer affordability. California must continue to reduce emissions. It must also remain an attractive jurisdiction for industrial investment. A carefully sequenced CBAM, designed to complement rather than replace existing tools and coupled with broad revenue recycling, can contribute to that balance. (45d-CBC-446.20)

Comment:

As CARB considers these amendments, we encourage the Board to carefully re-evaluate the treatment of emissions -intensive, trade -exposed (EITE) sectors and the implications for actual emissions reduction and the long -term competitiveness of domestic West Coast refining that serves California’s energy needs. bp is concerned that tightening EITE obligations without proportionate safeguards could increase greenhouse gas (GHG) emissions leakage risk and erode the competitiveness of domestic facilities supplying California’s energy markets.

Imported products from refineries in Asia compete with West Coast refineries yet face little or no carbon obligations, materially less stringent regulatory obligations, and in many cases access to discounted feedstocks. These structural cost advantages make it increasingly difficult for West Coast production to remain competitive as compliance costs rise. Similar dynamics have contributed to erosion of competitiveness and displacement of production in Europe. Without safeguards to account for the role of foreign imports, tightening EITE obligations will widen cost differentials between California -serving facilities and global competitors over time, resulting in GHG emissions leakage. As domestic production is displaced by higher-carbon imports, California’s energy supply reliability will be jeopardized.

We recommend strengthening GHG leakage safeguards for EITE sectors and ensuring that adjustments to industrial allocation account for global competitive dynamics and the risk of shifting supply toward less-regulated imports. Doing so will help mitigate GHG leakage risk and preserve the competitiveness of California -serving facilities while promoting an affordable, stable, and resilient energy supply as program stringency increases. (45d-BPA-241.1)

Comment:

In the October 2025 Workshop, CARB concluded that “Border carbon adjustments can mitigate leakage and reduce non-California EITE emissions. And yet the proposed regulation does not include a CBAM nor other measures to satisfactorily mitigate leakage. CARB has studied this issue and concluded that it can address leakage via a CBAM, and it should do so. By addressing competitive distortion associated with imports, a CBAM would reinforce emissions reductions within California while helping to preserve in-state refining and associated energy security...

Chevron believes any CBAM should be market-based and grounded in transparent, lifecycle-based carbon intensity methodologies. CARB should implement a CBAM for imported refined petroleum products within C&I similar to how CARB regulates electricity imports. The CBAM would place reporting and compliance obligations on the fuel importer and extend MRR reporting and missing data requirements that are currently used for in-state petroleum refineries to these importers. Covered importers would incur compliance obligations within C&I for each metric ton of process emissions, stationary combustion emissions, and vented emissions. A CBAM should complement, rather than replace, existing leakage-mitigation tools such as industrial allowance allocation, which remain essential to sustaining in-state production during the energy transition...

As California becomes increasingly reliant on imported fuels, additional safeguards are needed to ensure emissions reductions are not simply shifted out of state. A thoughtfully designed CBAM can help achieve California’s climate goals while maintaining affordability, competitiveness, and reliable fuel supplies. (45d-CUSAI-296.3)

Comment:

In the October 2025 Workshop, CARB concluded that “Border carbon adjustments can mitigate leakage and reduce non- California EITE emissions.” CARB has studied this issue and concluded that it can address leakage via a CBAM, and it should do so. By addressing competitive distortions associated with imports, a CBAM would reinforce emissions reductions within California while helping to preserve in-state refining and maintain energy security.

As California becomes increasingly reliant on imported fuels, additional safeguards are needed to ensure emissions reductions are not simply shifted out of state. A thoughtfully

designed CBAM can help achieve California's climate goals while maintaining affordability, competitiveness, and reliable fuel supplies. (45d-CH-348.5)

Comment:

Additionally, the proposed amendments did not analyze options for long-term leakage solutions beyond 2035, such as the adoption of a Carbon Boarder Adjustment Mechanism (CBAM) or reporting on import emissions.

The proposed amendments punt analyzing key tools that are necessary to avoid long-term leakage risk among EITE facilities... This means that the policy signal necessary to encourage early investment, support early market transformation, or begin to construct the infrastructure necessary for industrial decarbonization is delayed through at a minimum 2035, seeding an opportunity for California markets and supply chains to mature. (45d-NRDC-376.16)

Comment:

To round out a strategy and price signal for industrial decarbonization, we recommend CARB open a supplemental rulemaking as soon as possible to develop a long-term pathway to avoiding leakage and achieve industrial decarbonization. A CBAM for cement would ensure that all cement used in California is subject to the same emissions requirements and provide certainty that there will be a market for ultra-low-greenhouse gas emission cement that may be more expensive to produce. (45d-NRDC-376.14)

Comment:

Commit to implementation of a Border Carbon Adjustment for the cement sector, with a specific timeline.

Fundamentally, each year moving forward under Cap-and-Invest without an incremental BCA makes NCC and the California industry even less competitive against imports. It is unfair that our Cap Adjustment Factor (CAF) continues to decline while this fairness gap continues to widen. It is impossible for NCC and the California industry to commit to meaningful step-change investments without protection against imports via a BCA. We urge CARB to commit to specific timelines to implement a BCA for the cement sector. For extensive supporting detail and rationale, please see the CSCME comment letter. (45d-NCCC-418.1)

Comment:

A border carbon adjustment mechanism is therefore conceptually appropriate as a leakage-protection tool. By aligning the carbon cost of imported products with that of in-state production, a CBAM levels the playing field between producers competing in the California market. However, a CBAM does not eliminate the need for free allocation or other leakage-protection measures. Nor does it insulate consumers from carbon price

impacts. These distinctions are critical. Free allocation and CAF-based assistance address internal capital allocation pressures. They influence whether a firm chooses to modernize an existing California facility or redirect capital elsewhere. A CBAM addresses competitive pressure at the product boundary. These mechanisms serve different functions and should not be treated as substitutes. ClimateBuild therefore supports the initiation of a phased rulemaking to develop a CBAM, beginning with a mandatory reporting period. Under such a framework, importers of defined emissions-intensive, trade-exposed goods would report embedded emissions using standardized methodologies. CARB would analyze import penetration, emissions differentials, impacts on in-state production, and potential consumer cost effects over a defined period before considering the imposition of a compliance obligation. A reporting-first structure reduces implementation risk and allows CARB to develop a credible evidentiary basis before imposing new compliance requirements. Other jurisdictions have adopted transitional reporting phases for similar reasons. Sequencing matters when designing instruments with trade and supply-chain implications. (45d-CBC-446.17)

Comment:

At the same time, any future CBAM proposal must explicitly evaluate its interaction with existing leakage-protection mechanisms. A CBAM should not automatically displace or diminish free allocation absent clear, evidence-based findings that such changes will not increase leakage risk or undermine consumer affordability. Industrial facilities in California face competitive pressure not only from external producers but also from internal corporate capital allocation decisions. Removing free allocation prematurely, even in the presence of a CBAM, could exacerbate capital flight and reduce in-state production. Accordingly, ClimateBuild recommends that any regulatory language authorizing a future CBAM include a non-preemption principle requiring the Board to evaluate interactions with existing leakage-protection tools and to make specific findings before reducing those tools. (45d-CBC-446.18)

Comment:

Equally important is the treatment of revenues. A CBAM, if structured as a compliance obligation, will generate revenue. Carbon pricing impacts extend broadly across the economy, influencing electricity rates, fuel prices, transportation costs, and the price of emissions-intensive goods. If CBAM revenues are directed narrowly into programmatic expenditures rather than returned broadly to the public, the policy risks reinforcing cost-of-living pressures. ClimateBuild therefore urges that any CBAM revenue be returned broadly and transparently to Californians through mechanisms such as ratepayer bill credits or tax relief, rather than through narrowly targeted spending programs. Broad-based recycling strengthens public confidence in the fairness of the system and

preserves the affordability-through-design principle that underlies these comments. (45d-CBC-446.19)

Comment: Form Letter 1 (160 Submissions)

While C&I places a costly carbon price on in-state producers, imported fuels are not subject to equivalent costs, increasing emissions and economic leakage and undermining the program's environmental goals. The way that CARB has structured the proposed regulation necessitates a well-designed CBAM to be paired with the existing carbon price to help ensure that in-state and out-of-state suppliers face comparable carbon costs when serving the California market. CARB agreed with this assessment in the findings of its industrial leakage study that it was required to perform under HSC S 38562.[9] In the October 2025 Workshop, CARB concluded that "Border carbon adjustments can mitigate leakage and reduce non-California EITE emissions.' CARB has studied this issue and concluded that it can address leakage via a CBAM, and it should do so. By addressing competitive distortions associated with imports, a CBAM would reinforce emissions reductions within California while helping to preserve in-state refining and maintain energy security. As California becomes increasingly reliant on imported fuels, additional safeguards are needed to ensure emissions reductions are not simply shifted out of state. A thoughtfully designed CBAM can help achieve California's climate goals while maintaining affordability, competitiveness, and reliable fuel supplies. (45d-FL1.4)

Agency response:

No changes were made in response to these comments. During the October 2025 public workshop, staff provided an overview of the key contractor findings for industrial leakage that concluded that the leakage risks of key covered sectors were largely unchanged from the assessment conducted at the outset of the Program in 2010 (CARB 2025j, CARB 2010a). The assessment also concluded that the current output-based allocation approach as well as future border carbon adjustments could be effective in addressing leakage risks for emissions-intensive and trade-exposed industries. Although border carbon adjustment was not included in the Proposed Amendments, and is thus outside the scope of this rulemaking, Board Resolution 26-7 directs the Executive Officer to evaluate alternative or additional mechanisms for products entering the state to minimize leakage for sectors with imports of high carbon products. Staff is continuing to evaluate leakage risk and potential additional measures to reduce leakage risk for covered industrial sectors.

Recommendations from the AB 398 evaluation for any new or revised leakage risk assessments or additional measures from that evaluation may inform future rulemakings. In addition, in recognition of short-term economic uncertainty

caused by federal policy disruption, loss of federal incentives, global events, and volatile market conditions, CARB staff proposed additional changes in the 15-day Amendments to balance legislative direction, affordability, jobs, and near-term concerns while also ensuring emissions reductions and providing a long-term signal for the market. These changes include increased CAFs for 2027-2030 industrial allocation, which directly reduces near-term emissions leakage risk, and an enhanced MDI allocation proposal that provides increased near-term support for industrial decarbonization projects that lower facility compliance costs and reduce near-term emissions.

Please refer to Master Responses 1 and 2 in the Response to Comments on the Environmental Impact Analysis to comments regarding emissions leakage.

O-4.1b Multiple Comments on additional mechanisms to minimize emissions leakage for products entering the state:

PSG strongly supports the development and implementation of a border carbon adjustment ("BCA") mechanism applicable to steel and other highly trade-exposed industrial products. A BCA would require that steel products imported into California bear a carbon compliance obligation comparable to that imposed on in-state producers. By leveling the playing field at the point of market entry, a BCA would allow industrial allocation levels to decline over time without causing leakage, because the competitive cost differential between in-state and out-of-state production would be reduced or eliminated.

The European Union has demonstrated that this sequencing is feasible. The EU's Carbon Border Adjustment Mechanism entered its transitional phase in October 2023 and will impose full financial obligations beginning in 2026, specifically covering steel and iron products. Importantly, the EU is phasing down free industrial allocation under the EU ETS in coordination with the CBAM phase-in, ensuring that reductions in free allocation do not create leakage vulnerabilities before the BCA is in place to provide equivalent protection. California has not yet implemented a comparable mechanism. In the absence of a BCA, reducing industrial allocation for trade-exposed sectors creates direct and unmitigated leakage risk. California should adopt the same sequencing principle applied by the EU: allocation reductions should follow, not precede, the implementation of adequate leakage protection mechanisms. PSG therefore recommends that CARB develop and implement a BCA applicable to steel and other EITE sectors, and that further industrial allocation reductions be conditioned on the existence of an effective BCA or comparable mechanism. (15d-PSG-107.3)

Comment:

We also recognize other regulatory and political initiatives could negatively impact our in-state refining operations up to and past 2030. Longer-term viability will require any

remaining in-state refiner to successfully compete with fuel importers that are exempt from Cap-and-Invest stationary source obligations, which gives importers a distinct competitive advantage.

Providing in-state refiners an equal footing with importers will require statutory changes to the Cap-and-Invest program that can only be achieved through close collaboration between in-state refiners, legislators, CARB and the California Energy Commission. There are also potential risks from unforeseen market, economic, and geopolitical factors which, when coupled with the entirety of the state's regulatory requirements on in-state refiners, could independently and collectively affect the viability of our refining operations in California. (15d-PBF-160.2)

Comment:

We urge CARB to commit to specific timelines to implement a BCA for the cement sector. For extensive supporting detail and rationale, please see the initial NCC and CSCME comment letters submitted in response to the 45-Day Amendments. (15d-NCCC-182.1)

Comment:

PSG recommends that CARB freeze the standard CAF for all sectors pending the availability of an effective BCA. This sequencing approach — maintaining industry assistance before substantially reducing it — is a practical method to minimize emissions leakage and is consistent with how comparable carbon compliance regimes have approached the same challenge. Freezing the CAF would not reverse the declines that have already occurred, but it would prevent further erosion of the Program's leakage protection before a genuine alternative mechanism is available. It would also create a policy foundation consistent with the EU's CBAM sequencing model: maintaining free allocation at a protective level until the BCA is available to provide equivalent protection, then allowing a managed transition once the competitive playing field is leveled. (15d-PSG-107.4)

Comment:

As part of a future rulemaking, CSCME urges CARB to pause alternative CAFs for the cement industry until it is able to level the playing field with imports. The rationale behind such an approach has only been strengthened by CARB's proposal to only specify CAFs out to 2030, which provides little long-term clarity regarding the industry's allowance allocation rate and, therefore, the financial and competitive impacts associated with investing in decarbonization projects. A contingent pause in alternative CAFs will provide cement and other hard-to-decarbonize industries with assurances that any such investments will not simply be undermined and devalued by imports that do not bear similar costs. (15d-CSCME-174.5)

Comment:

As the cap-and-invest program moves toward increased stringency, CARB should begin evaluating whether additional approaches are needed to preserve affordability and competitiveness over the life of the extended program. The issues raised in these comments demonstrate the importance of refining the program's existing safeguards. But with the program now extended through 2045, CARB should also consider whether new tools will be needed to address cost and leakage risks that may not be fully managed through the current market architecture alone. This is especially important because the next phase of cap-and-invest will unfold alongside major changes in California's energy, industrial, transportation, and infrastructure systems. Compliance costs will increasingly be shaped not only by allowance supply, but by whether covered entities have access to commercially viable technologies, timely permitting, affordable energy, adequate infrastructure, and realistic capital deployment timelines. If those conditions do not develop at the pace assumed by the cap trajectory, the program may face cost and leakage pressures that cannot be solved solely through incremental adjustments to existing mechanisms. CalChamber therefore encourages CARB to use future rulemakings not only to adjust existing program parameters, but to assess whether additional tools are needed for the 2030-to-2045 period. As the cap becomes more stringent, long-term success will depend on whether California can pair declining emissions limits with practical pathways for covered sectors to reduce emissions here. Cost containment and leakage protection should be understood not only as carbon market safeguards, but as broader design principles necessary to sustain investment, preserve affordability, and achieve durable in-state emissions reductions. (15d-CCoC-158.11)

Comment:

One such alternative advocated in Chevron's comment letter (and also recommended by NRDC) is a Carbon Border Adjustment Mechanism (CBAM). CARB was required by statute to deliver an AB 398 report by December 31, 2025 (per HSC 38562(c)(2)(J)) addressing leakage risk and including recommendations on the potential for a border carbon adjustment. That report, which is still forthcoming, could lay the groundwork for a CBAM in the petroleum products sector. Fuel refineries are, in effect, already subject to a border adjustment under the LCFS, which applies to upstream emissions (extraction, transport, and refining) for both in-state and imported petroleum products, as well as downstream emissions from combustion. A Cap-and-Invest CBAM for refined petroleum products could perhaps be implemented by adapting to the existing LCFS regulatory framework. (15d-CRPSVC-172.2)

Agency response:

No changes were made in response to these comments. Please refer to Agency Response to comment O-4.1a.

O-4.1c Multiple Comments on additional mechanisms to minimize emissions leakage for products entering the state:

As long as California's carbon price applies only to in-state production, every ton reduced domestically risks being replaced by an unpriced ton embedded in an import. The Legislature wants to work with CARB and relevant state agencies to assess mechanisms that would apply an equivalent carbon cost adjustment to imported fuels and covered goods from jurisdictions without comparable programs. Such a mechanism would make leakage protection structural rather than perpetual, allowing CAF floors to be phased down over time as competitive parity is achieved. (BH-MCAA-1.13)

Comment:

The industry didn't lobbying for this new reserve; its primary objection was that CARB's proposed Cap-and-Invest regulation could make in-state refineries economically noncompetitive against unregulated and more highly-polluting imports. A straightforward solution to that problem would be a Carbon Border Adjustment Mechanism (CBAM), which is advocated by the likes of Chevorn and NRDC. CARB was required by statute to deliver an AB 398 report by December 31, 2025 (per HSC 38562(c)(2)(J)) addressing leakage risk and including recommendations on the potential for a border carbon adjustment. A CBAM would address industry concerns about competitiveness and leakage by strengthening, not weakening, the regulation. (BH-CRPSVC-89.2)

> **Agency response:**
>
> No changes were made in response to these comments. Staff appreciates the interest, direction, and continued engagement of the Legislature. Please refer to Agency Response to comment O-4.1a regarding alternative mechanisms for leakage protection. Please refer to Agency Response to comment O-13.3 regarding the AB 398 leakage report.

O-5 Cap Adjustment Factor

O-5.1a Multiple Comments: Increase CAFs for Refinery Allocation [45-day]

Establish stable, long-term cap adjustment factors for the petroleum sector...

Petroleum refineries and crude production require stable and predictable allowance allocation methodologies to sustain operations and support the long-term capital investments necessary to meet C&I goals and reliably supply transportation fuels. These facilities require large capital investments and long development timelines that are incompatible with frequent or uncertain changes to allocations.

… Accordingly, Chevron urges CARB to finalize Cap Adjustment Factors (CAFs) beyond 2035 to give needed regulatory certainty and raise CAFs for petroleum refining (NAICS

Code 324110), liquid hydrocarbon fuel production (NAICS Code 325199), and crude petroleum and natural gas extraction (NAICS Code 211111).

... At least until CARB effects a CBAM to protect these industries from out-of-state competition that does not have to comply with emissions standards, CARB should maintain a flat 0.85 CAF for petroleum refineries (NAICS 324110) and crude petroleum and natural gas extraction (NAICS Code 211111), as well as a 1.00 CAF for biorefineries (NAICS 325199). Establishing fixed baseline CAFs would provide long term regulatory certainty, and support continued instate fuel production, while helping to maintain affordable and reliable fuel supplies for Californians. Establishing a fixed CAF of 0.85 and pairing it with a CBAM would provide the needed leakage protection and economic certainty under C&I that refinery operators need.

California refineries already face higher costs and declining competitiveness relative to global peers due to the cumulative impact of state regulatory requirements, including C&I. These conditions have increased emissions and economic leakage risks, contributed to recent refinery closures, and increased California's reliance on imported fuels that are often produced under less stringent environmental standards and transported over long distances.

The CAFs in the proposed regulation will rapidly reduce the number of allowances allocated to petroleum refining (NAICS Code 324110), liquid hydrocarbon fuel production (NAICS Code 325199), and crude petroleum and natural gas extraction (NAICS Code 211111) sectors. Allowance allocations for industrial activities, including refineries, that fall under the Standard Activities column of Table 1 below will be reduced by approximately 59% between 2025 and 2035 (see Table 1). This reduction in allocations, coupled with the possible rapid increase in allowance prices, will result in a significant increase in compliance costs for in-state refineries. The lack of finalized CAFs beyond 2035 is unacceptable and increases the long-term uncertainty for industries that must comply with the program. Long-term operation and upgrading of these facilities are incompatible with uncertainty around allowance allocations. Without long term certainty, more refineries will likely close. (45d-CUSAI-296.2)

Comment: Form Letter 1 (160 submissions)

Petroleum refineries and crude production require stable and predictable allowance allocation methodologies to sustain operations and support the long-term capital investments necessary to meet C&I goals and reliably supply transportation fuels. These facilities require large capital investments and long development timelines that are incompatible with frequent or uncertain changes to allocations. Accordingly, I urge CARB to finalize CAFs beyond 2035 to give needed regulatory certainty and raise CAFs for petroleum refining (NAICS Code 324110), liquid hydrocarbon fuel production (NAICS Code 325199), and crude petroleum and natural gas extraction (NAICS Code 211111).

Establishing fixed baseline CAFs would provide long term regulatory certainty, and support continued instate fuel production, while helping to maintain affordable and reliable fuel supplies for Californians. Establishing a fixed CAF of 0.85 and pairing it with a CBAM would provide the needed leakage protection and economic certainty under C&I that refinery operators need. (45d-FL1.3)

Comment:

Increase the Cap Adjustment Factor (CAF) in Table 9-2 to 0.85 for the petroleum refining sector including the Hydrogen and Cogeneration facilities supporting petroleum refining, beginning with compliance year 2026 and maintain the CAF at 0.85 through 2045.

… California refineries face production costs approximately 8% above the global average, 3% above Asia-Pacific imports (including freight), and 14% above the average U.S. refinery outside of California. If CARB finalizes the Proposed Amendments, the cost gap between California, and the rest of the world will widen further.

... Contrary to AB 1207 (Irwin, 2025) CARB's Proposed Amendments would sharply increase in-state refineries' cost to produce transportation fuel, increasing the risk of leakage. Without targeted adjustments, the amendments would deepen California refineries' competitive disadvantage to those that do not face comparable stationary source compliance costs, shifting fuel production—and emissions—out of the state. Simply maintaining a status-quo approach through 2031 is not a viable option given the significant changes to California's refining outlook since the passage of AB 398 (Garcia, 2017) and subsequent 2018 Cap and Trade amendments. The need to address the status quo was recognized in the passage of AB 1207, which removed the AB 398 requirement that industrial allocations align with the overall cap. Near-term targeted adjustments are necessary because of the increased leakage risk associated with California's refining sector.

… CARB's C&I Program is built with statutory obligations in AB 32, AB 398, and AB 1207, which mandate that CARB consider "cost-effectiveness," "affordability," and "leakage" impacts of these regulations.2 CARB issues an allocation of allowances to industrial entities as the mechanism to ensure both cost-containment and leakage-prevention for emissions-intensive, trade-exposed (EITE) sectors such as refining.

CARB's proposal to tighten the cap while simultaneously reducing the number of allowances allocated to industrial entities would substantially increase compliance costs by requiring regulated entities to purchase a greater share of their required allowances on the market. Third-party data shows that the projected outcome of the Proposed Amendments will, in fact, accelerate the rate of leakage as the Proposed Amendments are likely to result in the following:

• Drive more refining production capacity out of the state and increase reliance on imports, which in turn will negatively impact California's economy (economic leakage); and

• Shift refining capacity to out-of-state and international refineries in jurisdictions that have not adopted any, or as stringent, GHG emission regulations (environmental leakage).

Marathon recommends that CARB revise its Proposed Amendments to be consistent with the Legislature's directive to implement a C&I Program that is cost-effective, affordable and minimizes leakage. Such changes will provide stability and encourage further investments in California refineries. The projected costs to comply with CARB's Proposed Amendments will place California refineries at a pronounced competitive disadvantage, lead to curtailed operations, and drive refining production capacity out of the state.

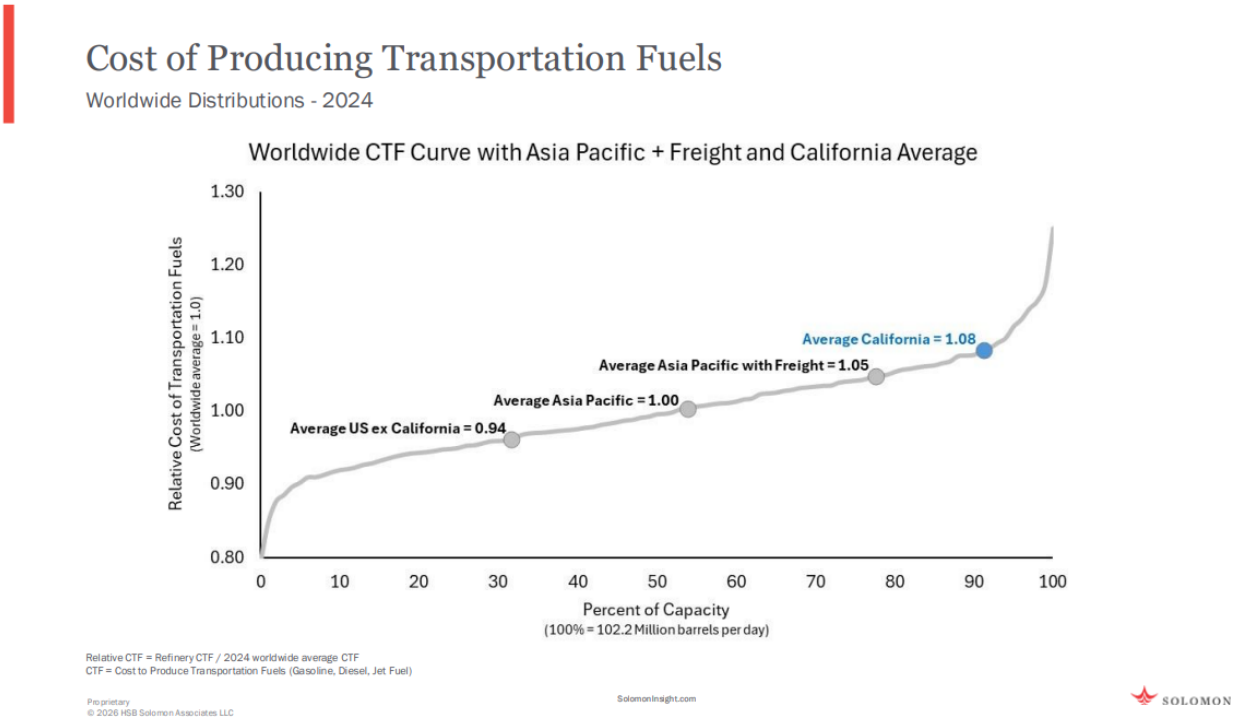
California refineries are vital to California's economy. California's refining industry plays a critical role in the state's economy, supplying essential transportation fuels and chemical feedstock that underpin nearly every sector of economic activity. Beyond fuel production, refineries support thousands of high-quality jobs, generate substantial state and local tax revenues, and anchor complex supply chains that serve manufacturing, agriculture, logistics, and consumer markets throughout California.

Today, California refineries incur greater costs to produce transportation fuel than out-of-state and international refineries. Solomon benchmarking confirms that California refineries already sit well to the right of the global cost curve, leaving them disproportionately exposed to incremental policy-driven costs. This point was underscored when two in-state refineries announced closures based, in part, on California market dynamics: Phillips 66's Los Angeles refinery ceased operations in 20258, and Valero's intent to cease operations at its Benecia refinery in 2026.

Solomon conducts an analysis of refinery performance worldwide every two years, comparing more than 300 refineries (approximately 85% of global refining capacity) across various parameters, including operational expenses, reliability and maintenance, energy efficiency, and emissions performance. A key benchmarking metric for all study participants is the cost to produce transportation fuels.

As shown in Figure 1, costs to produce transportation fuels in California are already among the highest in the world, leaving California refineries comparatively less resilient to any incremental cost increases associated with the C&I Program. On average, the cost to produce transportation fuels at California refineries is approximately 8% higher than the global average, 3% higher than Asian imports including freight, and 14% higher than the average U.S. refinery, excluding California.

Figure 1: Cost to produce transportation fuels[11], Solomon 2024 Fuels Study



… To illustrate the potential impacts of CARB's Proposed Amendments to California refineries' competitiveness, Solomon developed Figure 2 showing the impact to the cost of transportation fuel in year 2030 and year 2035 using the following assumptions: California refineries will need to purchase more allowances as the industrial allowance allocation decreases; and using the floor price of $38/MT for year 2030 and the price ceiling of $205/MT for year 2035.12 In addition, Solomon shows the impact to the cost of transportation fuel for these two years at the same floor price ($38/MT in 2030 and price ceiling ($205/MT in 2035) if Marathon's proposed 0.85 CAF is adopted. As shown in Solomon's figure, if California's actual GHG emissions exceed the number of budgeted allowances causing price-ceiling conditions, California refineries move into the top 1-2% of refineries with the highest production costs.

Figure 2: California Scenarios: Cost to produce transportation fuels, Solomon 2024 Fuels Study

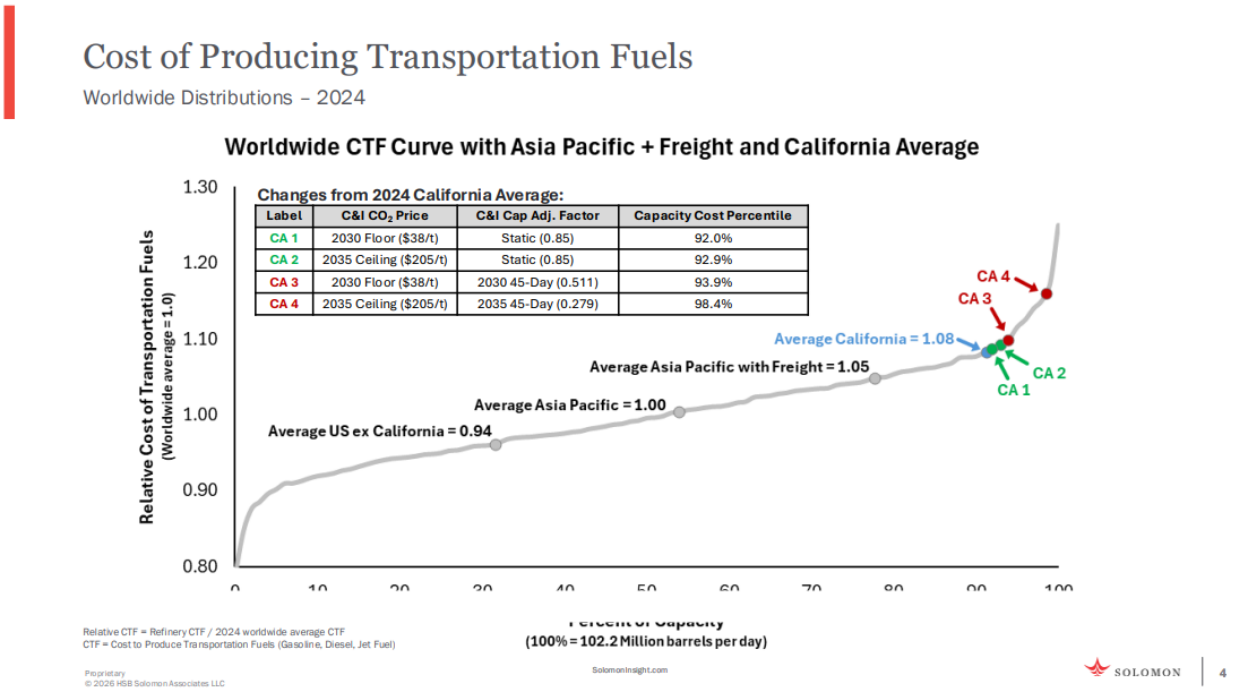
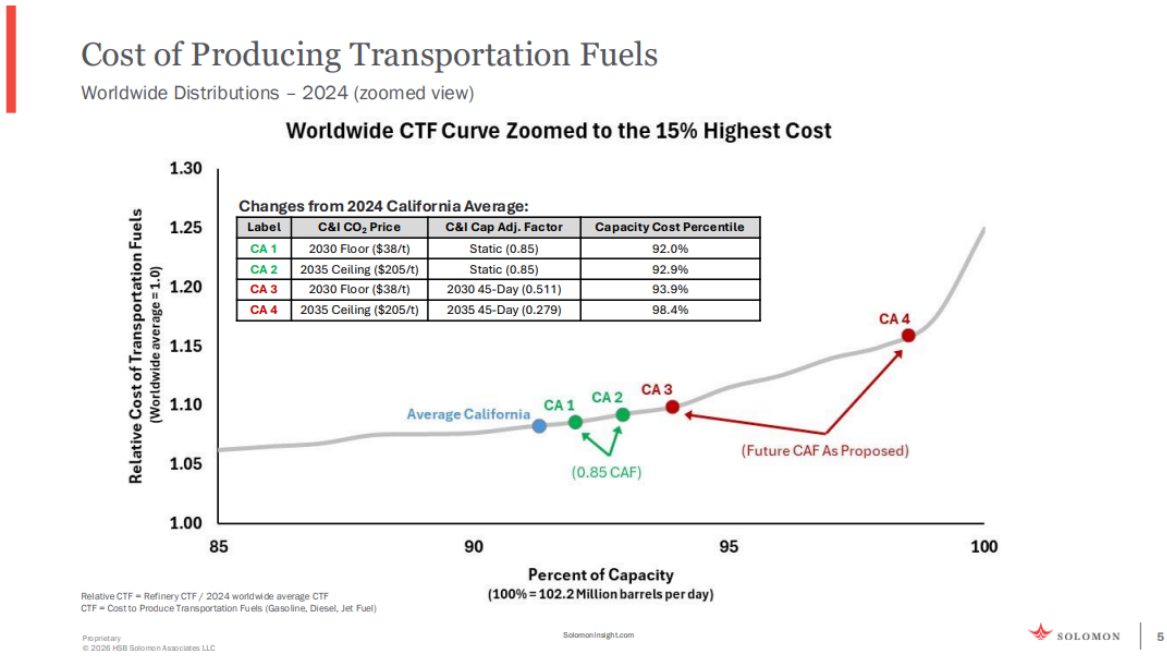


Figure 3: Zoomed-In California Scenarios: Cost to produce transportation fuels, Solomon 2024 Fuels Study



… CARB characterizes the Proposed Amendments as preserving cost containment by maintaining the Program's existing price ceiling and allowance price containment reserves prices, but as shown in Figure 3, the current cost-containment mechanism does little to mitigate compliance costs for refineries if allowances allocated to refineries

are simultaneously reduced. The price ceiling is intended to limit the maximum price of allowances each year, but refineries will need to buy more as the allowance allocation decreases when no feasible and economical technology exists to further reduce GHG emissions. CARB acknowledges the C&I Program has the lowest “Ratio of Industrial Allocation to Industrial Covered Emissions”13 amongst the listed peers. Any further reduction of allowances allocated to industrial entities in the C&I Program will only increase the absolute cost of the program, widening the competitive gap between California refineries and facilities outside of the state.

By increasing the CAF to 0.85 for petroleum refineries including the Hydrogen and Cogeneration facilities supporting petroleum refining, starting in 2026 and maintaining the 0.85 through 2045, CARB will minimize the risk of economic leakage associated with the C&I program.

CARB’s Proposed Amendments will result in increased environmental leakage as California’s transportation fuel supply shifts to out-of-state and international refineries. AB 1207 re-affirmed CARB’s obligation to minimize environmental leakage, but CARB’s Proposed Amendments risk doing the opposite. Demand for gasoline within California is already outpacing in-state production capacity.

Imposing such drastic reductions in industrial assistance allowances will not reduce demand for transportation fuels – it will simply increase the costs to produce transportation fuel in-state, creating a heightened risk of further refinery operations curtailment and of emissions leakage as fuel production shifts to refineries in other states or countries with less stringent regulations and lower regulatory costs. The net effect of decreased transportation fuel production in California will be an increase in global GHG emissions. Such an outcome would undermine California's environmental objectives while increasing costs and supply risks for consumers.

A benchmark Solomon uses to demonstrate refinery performance is the Carbon Emissions Index (CEI). This is a complexity-based metric that measures a facility’s Scope 1 and Scope 2 carbon emissions considering the manufacturing complexity of the facility. Much like the Complexity Weighted Barrel (CWB), the CEI considers the more carbon-intensive process units in a refinery (e.g., cokers, hydrocrackers, fluid catalytic crackers) to measure the differences in refining performance. As shown in Figure 3, California refiners have a lower CEI relative to peers in the U.S. and Asia, and when shipping emissions are included, the difference becomes even more significant.

CARB C&I Workshop, October 2025. Slide 38 [California 60% in 2023, Washington ~ 100% in 2023, Quebec 99% in 2023, European Union 84% in 2023, United Kingdom 72% in 2023.

… California refineries are among the lowest emitting refineries. Other decarbonization tools, such as CCUS, are not viable options in the near or medium term.

Opportunities to reduce GHG emissions from refineries while maintaining reliable production of transportation fuels have largely been exhausted. Refiners must operate efficiently to remain cost-competitive, making the minimization of natural gas and internally produced fuel use for process heat a key focus.

Marathon's Los Angeles Refinery has implemented several notable energy-efficiency projects to reduce emissions, including shutting down one of two fluid catalytic crackers, shutting down its coke calciner, installing electric motors on multiple large pieces of machinery and replacing aging boilers with modern, more efficient units. At this time, Marathon does not see additional opportunities to further reduce GHG emissions at the Los Angeles Refinery.

Most of the Los Angeles Refinery's GHG emissions originate from combustion sources, for which there are few scalable alternatives to reduce the amount of heat required for fuel production. To address this, for refining operations, CARB identified CCUS as a strategy that could be deployed as soon as 2027.

However, while CCUS has been demonstrated in limited narrowly defined applications, implementation at a large, complex facility such as the Los Angeles Refinery is infeasible.

CCUS is most effective where carbon dioxide (CO2) emissions originate from a single, high-concentration, high-pressure point source. Refineries present precisely opposite conditions. Refinery CO_2 emissions are distributed across dozens of units, including heaters, boilers, hydrogen plants, and utility systems. Marathon's Los Angelese Refinery average 2020 through 2024 Mandatory Reporting Regulation covered emissions was 5,967,476 metric tonnes of GHG, primarily consisting of low-concentration flue gas (approximately 3–8% CO_2) at near-atmospheric pressure. Capturing these emissions would require either individual capture systems for each unit or an extensive ducting network to aggregate exhaust streams, making CCUS deployment far more complex and costly than at facilities with high-purity CO_2 streams such as ethanol or ammonia plants.

In addition, CCUS operations require material inputs of steam for solvent regeneration, electricity for compression, and additional fuel to offset energy losses. For refineries, this translates into higher operating costs, increased fuel consumption, and elevated emissions of non-CO_2 pollutants such as nitrogen oxides (NO_x) and particulate matter - impacts that are particularly acute for California refineries already facing escalating regulatory costs. These are only the technical feasibility issues with capturing the CO_2. Once captured, the CO_2 must be liquefied, transported and disposed of through

underground injection well systems into geologic formations deep underground. To date, only one such site has been permitted in California and has yet to begin operation.

Further, the well site is only being designed to sequester up to 1.5 million metric tons of CO_2 per year, less than 1% of California's total GHG emissions inventory. The Legislature intended the C&I Program to function as a market-based mechanism to reduce GHG emissions, not as a punitive regime targeting individual sources. California refineries are among the most highly regulated and tightly controlled industrial facilities in the nation, leaving few remaining, technically feasible control measures capable of delivering additional emissions reductions. Refinery operators have invested for decades in emissions controls and efficiency improvements and have consistently contributed to California's environmental objectives.

Companies such as Marathon have pursued emissions reductions through electrification, transitions to alternative fuels and the installation of more modern, efficient equipment. Under CARB's current proposal, however, the remaining practical options for refineries to materially reduce GHG emissions are to curtail operations - thereby reducing fuel production - or to shift refining activity out of state. Either outcome would undermine the C&I Program's objectives by increasing costs, threatening fuel supply reliability, and heightening the risk of emissions leakage and an overall increase in GHGs. (45d-M-324.1)

Comment:

Increase the CAF to 1.0 in Table 9-2 for the biorefining sector, including the Hydrogen and Cogeneration facilities supporting biorefining, beginning with compliance year 2026 and maintain the CAF at 1.0 through 2045.

… For biorefineries, policy incentives are the greatest driver to capture value in the sector. Absent sufficient, reliable, and durable incentives, capital intensive renewable projects such as the Martinez facility would not be economically feasible. To this end, Marathon agrees with CARB's proposal to designate renewable diesel production as a high leakage risk and develop an allocation benchmark.

... To ensure biorefineries remain viable, CARB must do more by increasing the CAF to 1.0 for biorefineries including the Hydrogen production facilities that support a biorefineries operations, while adding a mechanism to provide allocations for Cogeneration facilities that support biorefining, starting in 2026 and maintaining the CAF at 1.0 through 2045. (45d-M-324.2)

Comment:

Establish stable, long-term cap adjustment factors for the petroleum sector...Petroleum refineries and crude production require stable and predictable allowance allocation methodologies to sustain operations and support the long-term capital investments

necessary to meet C&I goals and reliably supply transportation fuels. These facilities require large capital investments and long development timelines that are incompatible with frequent or uncertain changes to allocations.

Accordingly, I urge CARB to finalize CAFs beyond 2035 to give needed regulatory certainty and raise CAFs for petroleum refining (NAICS Code 324110), liquid hydrocarbon fuel production (NAICS Code 325199), and crude petroleum and natural gas extraction (NAICS Code 211111). Establishing fixed baseline CAFs would provide long term regulatory certainty, and support continued instate fuel production, while helping to maintain affordable and reliable fuel supplies for Californians. Establishing a fixed CAF of 0.85 and pairing it with a CBAM would provide the needed leakage protection and economic certainty under C&I that refinery operators need. (45d-CH-348.4)

Comment:

Establish stable, long-term Cap Adjustment Factors (CAFs) for the petroleum sector to support in-state fuel production and the investments necessary to meet California's ongoing fuels demand.

… CARB should at minimum adopt fixed CAFs that are protective for refineries through 2045.

Certain emissions-intensive, trade-exposed (EITE) sectors require stable and predictable baseline allocation methodologies to sustain operations and make the long-term capital investments necessary to meet Cap-and-Invest program goals and reliably provide for regional fuel demand. CARB has acknowledged the importance of providing additional protections to these industry sectors by applying an adjusted CAF to facilities "with over 50% of total emissions from process emissions and operating in a sector with both high emissions intensity and a high leakage risk classification." However, limiting CAF adjustments to these particular facilities fails to account for increased leakage risks across additional industry sectors, including petroleum and biofuel refineries.

WSPA urges CARB to adopt stable, long-term CAFs for these sectors to prevent California refining from becoming even more cost-disadvantaged and uncompetitive as explained above. AB 1207 provided CARB with additional flexibility to address leakage by removing the requirement that CAFs be set proportionally to the overall allowance budgets. Consistent with this flexibility, CARB should, at minimum,set baseline CAFs that would provide the regulatory certainty needed to support continued in-state fuel production and investment in GHG emissions-reduction technologies while avoiding unnecessary market disruption and helping to maintain a reliable and affordable fuel supply for Californians.

Specifically, from 2026 through 2045, CARB should, at minimum, adopt a flat 0.85 CAF for petroleum refineries (North American Industry Classification System (NAICS) 324110) and a 1.00 CAF for biorefineries (a subset of NAICS 325199) (Table 1) and associated hydrogen plants. Maintaining a 1.00 CAF for biofuel refineries within NAICS 325199 is equally critical to support the in-state production of low-carbon fuels that are essential to California's energy transition and have already achieved a large portion of California's GHG emissions reduction goals, as has been incentivized through various California policies.

Table 1. WSPA Proposed Table 9-2 Cap Adjustment Factors for Selected Sectors

Budget Year	Cap Adjustment Factor, c	
	Industrial Activities with NAICS code 324110*	Industrial Activities with NAICS code 325199*
2025	0.85	1.0
2026	0.85	1.0
2027	0.85	1.0
2028	0.85	1.0
2029	0.85	1.0
2030	0.85	1.0
2031	0.85	1.0
2032	0.85	1.0
2033	0.85	1.0
2034	0.85	1.0
2035	0.85	1.0
2036	0.85	1.0
2037	0.85	1.0
2038	0.85	1.0
2039	0.85	1.0
2040	0.85	1.0
2041	0.85	1.0
2042	0.85	1.0
2043	0.85	1.0
2044	0.85	1.0
2045	0.85	1.0

*Activities would include onsite hydrogen plants that support NAICS code 324110 and 325199 activities. This would include onsite hydrogen plants owned/operated by a third party that may report as a separate entity under a different NAICS code.

Adopting a flat 0.85 CAF for petroleum refineries from 2026 through 2045 represents the minimum action necessary to halt the decline of cap-related assistance for this sector, improve affordability under the Cap-and-Invest program, contribute to leveling the playing field with out-of-state and international competitors, and provide additional stability to help sustain long-term decarbonization investments. Maintaining stable CAFs for these EITE sectors directly addresses both economic and emissions leakage concerns, consistent with longstanding legislative directives. By providing predictable, long-term allocation treatment, CARB can better ensure that emissions reductions occur within California rather than being shifted out-of-state, thereby preserving environmental

integrity while supporting California's economy and workforce. Stabilizing CAFs for the refining sectors would also reduce the risk of supply disruptions, moderate compliance costs, and protect consumers from price volatility while still preserving incentives for GHG emissions reductions within the Cap-and-Invest program framework. This approach is also consistent with the Legislature's directive under SB X1-2 and AB X2-1 to ensure that California maintains reliable, affordable, and safe fuel supplies for its residents.

WSPA urges CARB to adopt the proposed baseline CAFs as a minimum near-term measure while retaining maximum flexibility to evaluate and implement additional or alternative approaches that may further mitigate leakage and competitiveness risks. However, WSPA emphasizes that this proposal should not preclude CARB from considering additional measures or alternative approaches that may more effectively address leakage risks and competitive pressures facing the petroleum sector. Additional measures may be needed to address increased leakage risks due to the continuing rise in allowance prices. At a minimum, prices are expected to double in the next 10 years, and have the potential to increase at an even higher rate when considering that the ceiling price could be more than six times higher in 10 years compared to the current allowance price (assuming an average inflation rate of 2.5%).

Comparable cap-and-invest programs provide assistance to EITE industries beyond a fixed CAF – for example, Washington's Cap-and-Invest program provides for EITE industries to obtain no-cost allowances equal to 94% or more of a facility's baseline emissions between now and 2034. CARB should evaluate additional measures in line with these other programs to adequately address rising compliance costs and increasing leakage risks for refineries. (45d-WSPA-381.3)

Comment:

We also request that CARB consider fixing the cap adjustment factor through 2045 for refining and associated hydrogen manufacturing at a level that is protective and encourages retention of in-state refining to prevent both emissions and economic leakage. (45d-AP-351.2)

Comment:

We recommend CARB continue to work with affected stakeholders on the CAF schedule to avoid further tightening industrial allocations in the context of reduced overall budgets. A proportional reduction would shift additional cost burdens to propane end-users and create competitive disadvantages for California businesses already facing high energy costs. (45d-WPGA-401.4)

Comment:

California's Cap-and-Invest program has always attempted to balance declining allowance budgets with protection for emissions-intensive, trade-exposed sectors. The Cap Adjustment Factor (CAF) is the mechanism that determines annual free allowance allocation to covered industrial entities. The proposed amendments maintain current CAF values through 2031 and then align post-2031 values with the declining allowance budget, with the alternate CAF declining at half the annual rate to provide enhanced leakage protection.

Table 9-2 of Appendix A-1 illustrates the magnitude of the post-2031 shift. In 2025, the Standard CAF is 0.681 and the Alternate CAF for high leakage sectors is 0.841. By 2032, the Standard CAF drops to 0.348 and the Alternate CAF drops to 0.610. By 2035, the Standard CAF falls to 0.279. That decline is mathematically consistent with a tightening cap. The question is whether it is economically consistent with California's present leakage conditions. ClimateBuild would say it is not. The statute requires CARB to minimize leakage and ensure cost-effective reductions. The ISOR explicitly recognizes that CAF values must be considered "in the context of decreasing overall Program allowance budgets through 2045, the need to protect against emissions leakage risk and support affordability for California consumers."

The leakage risk environment California faces today is materially different from the one in which early CAF glide paths were conceived. The state has experienced refinery closures and cement capacity shutdowns. Industrial operators face higher electricity prices relative to competing jurisdictions. Imports of fuels and building materials continue to meet California demand. When domestic production declines while consumption remains steady, leakage is no longer hypothetical. If the CAF declines mechanically at the same time the cap steepens, compliance costs for exposed sectors can increase sharply. Those costs may not appear immediately in allowance price charts. They appear instead as curtailed production, deferred investment, reduced workforce hours, or facility closure. The downstream impact is felt by consumers through higher prices and by workers through job loss. For these reasons, ClimateBuild recommends that the Cap Adjustment Factor operate as a leakage-risk safeguard that is held constant rather than as an automatic function of budget decline. This structure accomplishes several important objectives. First, it preserves the integrity of the declining cap. The emissions limit remains binding. The safeguard does not relax environmental ambition. It simply moderates cost distribution during periods of elevated leakage risk. Second, it aligns with CARB's own stated rationale in the ISOR that leakage protection and affordability must be evaluated in light of declining allowance budgets. Third, it strengthens political durability. A program that adapts to measurable economic stress signals is more defensible to legislators, labor organizations, and the public than one that relies solely on formulaic declines. Some may argue that aligning CAF directly with cap stringency ensures maximum incentive to decarbonize. That

argument assumes that facilities respond to declining free allocation by investing in cleaner technology rather than exiting the jurisdiction. The evidence from recent industrial closures suggests that assumption may not always hold. In short, the CAF should not be treated as a purely mathematical derivative of the allowance budget. It should function as a calibrated leakage-risk instrument embedded within the broader objective of cost-effective emissions reduction. (45d-CBC-446.8)

Agency Response:

Changes were made in response to these comments. In recognition of the emissions leakage risk faced by California manufacturing sectors during the current economic uncertainty with federal policies, global energy disruptions, increased Program stringency to an 11% overall annual cap decline through 2030, and slower pace of adoption for carbon pricing by other jurisdictions than anticipated when the first regulation was adopted in 2011, the cap adjustment factors for most industrial sectors were increased relative to the 45-day proposal and to set through 2030, which meets the requirements of Health and Safety Code section 38562. The Proposed Amendments increase CAF for Standard Activities in 2027 to 0.807, which matches the CAF for sectors with a high proportion of process emissions for that year. From 2028-2030, the standard and alternate CAFs in the 15-day Amendments decline at approximately one percent less, relative to the annual allowance budget declines in the current Regulation, than in the 45-day proposal. This support goes beyond the status quo initially proposed in January and provides increased compliance support through 2030.

The commenters request that the CAF for refineries and bio-refineries be set to flat values, instead of declining year over year. The 2022 Scoping Plan Update recognized the role of California’s full suite of GHG emissions reduction programs, including the carbon price signal from Cap-and-Invest, in achieving the 2030 and 2045 GHG reduction targets. A declining CAF is a critical feature to support an increasing carbon price signal, particularly in light of increasingly stringent allowance budgets. MDI allocation is designed to mitigate emissions leakage by deploying transformative investments in industrial decarbonization technologies needed to achieve the 2030 and 2045 GHG targets while keeping clean production in-state. Importantly, there are many factors that influence the cost of doing business in the state, allowance allocation is designed to minimize leakage from the implementation of this Program.

Please also refer to Agency Response to comments O-1.1a regarding comments on refinery stationary source costs and fuel imports.

When accounting for the amended CAF and for reduced emissions possible for use of the MDI, refineries and biorefineries will benefit from reduced compliance

costs, significantly mitigating emissions leakage risk. These changes increase emissions leakage protection relative to the 45-day proposal during the near-term unprecedented economic uncertainty, to take a conservative approach, to support California businesses and jobs, and to align with the statutory direction to consider effects on the state's economy. As directed in AB 398 and AB 1207, CARB staff is continuing to evaluate cap adjustment factors and additional and complementary mechanisms after 2030 to address the risk of emissions leakage related to both covered industrial emissions and products that are not currently covered by the Program. Post-2030 allocation will also be informed by updated data on leakage as available. Please refer to Agency Response O-13.3 for comments regarding the AB 398 Leakage Report.

Staff appreciate commenters' support of the LHF benchmark. However, staff note that the commenter's suggestion that renewable diesel production was classified as high risk is incorrect. Table 8-1 classifies liquid hydrocarbon fuel production as medium risk. This was not changed in the Proposed Amendments. Please refer to the Agency Response to comment O-13.1a concerning reclassification of the leakage risk of sectors.

Concerning GHG reduction options at refineries including CCS, the 2022 Scoping Plan Update acknowledged that the refineries in California are large and complex, and that the actual deployment of reduction projects can be affected by multiple factors. As discussed in Master Response 1 in the Response to Comments on the Environmental Impact Analysis, CARB identified multiple GHG reduction options which could be implemented based on each refinery's characteristics and needs, potentially leveraging MDI. CARB will continue working with interested parties to support implementation of decarbonization projects at refineries.

Concerning emissions leakage, see Agency Response to comment O-3.2a and Master Response 1 in the Response to Comments on the Environmental Impact Analysis regarding emissions leakage. See also Agency Response to comment O-8.51 regarding California's historic covered and total emissions reductions.

O-5.1b Multiple Comments: Increase CAFs for Refinery Allocation

Marathon Petroleum Corporation (Marathon) appreciates California Air Resources Board's (CARB) efforts to modify the 45-day package to provide short term relief, but Marathon believes the 15-day Cap-and-Invest proposed amendments fall significantly short of providing the clarity needed for business planning. While the proposal provides much needed short term cost reduction between 2027 and 2030, the absence of a defined plan for 2031 and beyond introduces significant uncertainty and material economic risk to our California operations. Surprisingly, CARB's proposal directly

conflicts with the California Energy Commission's June 27, 2025 letter to Governor Newsom in which the Commission emphasized that sustaining a safe, affordable, and reliable transportation fuels supply requires a robust investment framework anchored in regulatory certainty, so that refiners continue to see long-term value in operating in the California market. The decisions to invest in long-term projects at our refineries are being made today and cannot wait for the next round of rulemaking. Without clear assurance that the state will provide regulatory certainty for in-state production of transportation fuels in these future years, long-term operation of our Los Angeles refinery is not anticipated – placing jobs, in-state fuel production, and, critically, economic stability in California at risk.

Marathon stands by our March 6 and March 9 letters, strongly urging CARB to adopt measures that achieve an equivalent cap adjustment factor of 0.85 for petroleum refineries and 1.0 for biorefineries, and increase the assistance factor for both to 100 percent from 2026 through 2045. (15d-MPC-8.1)

Comment:

Third, absent corrective action, limitations on industrial assistance through declining CAFs will likely only serve to further accelerate refinery closures and exacerbate emissions and economic leakage, potentially leading to the elimination of additional in-state refining capacity.

CARB must therefore take immediate steps to prevent further erosion of the economic viability of California's petroleum and biofuel refineries. Such an approach would be consistent with the Legislature's directive under SB X1-2 and AB X2-1 to ensure that California maintains reliable, affordable, and safe fuel supplies for its residents.

... Since the inception of the Cap-and-Invest program, CARB has utilized direct allocation of no-cost allowances to covered industrial sectors as its primary mechanism for mitigating emissions leakage. Nevertheless, as the available allowance supply diminishes in accordance with California's 2045 carbon neutrality target, CARB's current leakage protection mechanism has proven increasingly inadequate in addressing the growing competitive disadvantage confronting California's transportation fuels producers, particularly as the price floor and allowance price containment reserves continue to increase annually without adequate consideration of economic challenges or technology feasibility.

WSPA emphasizes the importance of maintaining robust in-state refining capacity while ensuring access to both domestic and international supplies to meet ongoing consumer demand, particularly in light of current geopolitical challenges. In light of these issues, WSPA urges CARB to establish a 0.85 CAF for petroleum refining and a 1.0 CAF for biorefining through 2045 to provide long-term program stability while reducing program-

related costs for California industries and consumers. Providing regulatory certainty is essential for establishing a stable framework that supports long-term investment, operational planning, and a competitive transportation fuels market in which refiners, importers, and distributors operate on a level playing field. WSPA urges CARB to consider policy approaches that address the external challenges facing California's petroleum refining sector – particularly as Cap-and-Invest program-related production costs continue to increase – in order to mitigate future production and emissions leakage resulting from competitiveness pressures from out-of-state refineries. In its current form, the Cap-and-Invest program fails to address the substantial and widening disparities affecting California's remaining refineries, which continue to bear stationary source compliance obligations while an increasing volume of imported fuel does not. WSPA recommends that CARB conduct a comprehensive evaluation of the emissions, cost, and workforce implications, as well as the underlying legal authorities, and collaborate with industry stakeholders to develop durable solutions within this or an alternative regulatory framework.

WSPA looks forward to engaging in discussions regarding policy approaches that are both economically viable and provide long-term environmental and regulatory certainty. (15d-WSPA-164.6)

Comment:

The 15-Day Amendments increase CAFs for 2027–2030 relative to the 45-day proposal—notably raising the standard CAF for 2027 to 0.807 (matching the alternate CAF) and reducing the annualized decline rate from 4% to 3%—and RFG supports these modifications as meaningful progress that reflects CARB's responsiveness to stakeholder concerns. However, the 15-Day Amendments fundamentally fail to address leakage because sufficient post-2030 CAFs have not been provided. This creates substantial regulatory uncertainty for industries that must make long-term capital investment decisions now. This omission is particularly problematic given that AB 1207 extended the Program to 2045. Without established, sufficient CAFs through 2045 to cover the same period, covered entities—particularly petroleum refineries with long investment horizons—cannot plan compliance strategies or commit to the multi-year decarbonization investments that CARB's own Scoping Plan envisions.

The passage of Assembly Bill 1207 fundamentally altered CARB's authority with respect to industrial allowance allocations. Prior to AB 1207, CARB was constrained to set the CAF in direct proportion to the overall emissions budget. The Legislature eliminated this proportionality requirement, thereby granting CARB expanded flexibility to establish CAF values that more properly reflect leakage risks and the economic realities facing critical state industries. CARB should exercise this discretion to provide the protection from leakage commensurate with the threats faced by sectors demonstrating high

leakage vulnerability. Specifically, we propose: Petroleum Refining Sector (CAF of 0.85): Increase the CAF in Table 9-2 to 0.85 for the petroleum refining sector, including hydrogen and cogeneration facilities supporting petroleum refining, beginning with compliance year 2030 and maintain the CAF at 0.85 through 2045. (15d-RFG-189.4)

Comment:

CARB has a clear statutory mandate under the Health and Safety Code to "[m]inimize leakage." As discussed in Section II, leakage is occurring now, and without regulatory certainty on industrial assistance post-2030, it will almost certainly increase. The lower pre-2031 CAFs in the 45-day proposal created significant deficiencies in CARB's CEQA analysis given the ultra-high leakage risk associated with that framework. While the 15-Day Amendments represent a meaningful reduction in near-term impacts on in-state refining as compared to the 45-day proposal, the Proposal—even as modified—will foreseeably accelerate refinery closures and increase California's reliance on imported fuels. Although the 15-Day Amendments increase near-term CAFs, they do not provide certainty that post-2030 CAFs will adequately address these concerns. As discussed above, CARB can address this by amending the rule as follows: Establish a CAF of 0.85 for the petroleum refining sector, including hydrogen and cogeneration facilities supporting petroleum refining, beginning with compliance year 2030 and maintain the CAF at 0.85 through 2045. Increase the CAF to 1.0 in Table 9-2 for the biorefining sector, including hydrogen and cogeneration facilities supporting biorefining, beginning with compliance year 2030 and maintain the CAF at 1.0 through 2045. (15d-RFG-189.7)

> **Agency Response:**
>
> No changes were made in response to these comments. Please refer to the Agency Response to comment O-5.1a.

O-5.1c Comment:

My name is Brian McDonald. I'm with Marathon Petroleum Corporation. Thank you for this opportunity to speak today.

Marathon Petroleum Corporation has made significant investments in its California assets to produce reliable, clean and affordable transportation fuels. Many of these investments support California's emission reduction goals, including projects at our Los Angeles refinery that have reduced NOx emissions and greenhouse gas emissions, as well as the conversion of our Martinez refinery to produce renewable fuels. Each of our facilities carries a significant Cap-and-Invest obligation and Marathon is deeply concerned that the current proposal does not go far enough to provide the regulatory certainty needed to sustain in-state fuel production. While the proposed amendments offer short-term relief, the leave uncertainty beyond 2030, which carries real consequences. Marathon's post-2030 investment decisions are being made today.

Without a clear and durable regulatory framework, Marathon cannot forecast expected Cap-and-Invest costs or make informed decisions about further modern -- modernizing refinery operations. This uncertainty places the continued long-term operation of our facilities at risk. California refineries operate at a cost disadvantage compared to the rest of the world. Marathon continues to recommend that CARB establish a flat cap adjustment factor of 0.85 for refining and 1.0 for biorefining through 2045. Adjustment factors below these levels will increase costs, risk curtailing operations, and ultimately shift production, emissions, and revenue out of the state. It is not an environmental win. It is leakage, which CARB is statutorily directed to minimize.

Thank you. (BH-MP-114.1)

Agency Response:

No Changes were made in response to this comment. Please refer to the Agency Response to comment O-5.1a.

O-5.2a Comment:

PBF Energy disagrees with the position taken by the Western States Petroleum Association advocating for a flat 0.85 Cap Adjustment Factor for petroleum refineries. Rather, PBF Energy continues to urge CARB to revise the Proposed Amendments to put in-state refiners on equal regulatory footing with fuel importers as we wrote to you in our letter dated February 25, 2026 (attached). (45d-PBF-394.1)

Agency Response:

No changes were made in response to this comment. Staff appreciate the clarification of the commentor’s position. Please refer to the Agency Response to comment O-1.1a regarding changes that were made that affect refinery stationary source costs, fuel imports, and affordability. When accounting for the amended CAF and for reduced emissions possible from use of the MDI, refineries and biorefineries will benefit from reduced compliance costs, significantly mitigating emissions leakage risk for the sector.

O-5.2b Comment:

Chevron’s and Marathon’s comment letters advocated for a higher Cap Adjustment Factor (CAF) for petroleum refining. This would increase the sector’s free allowance allocation and diminish GGRF revenue from allowance auctions. However, the leakage issue could be remedied without reducing GGRF revenue by balancing a higher CAF (e.g. 0.85) for upstream refinery emissions with a lower CAF for refined petroleum products’ downstream emissions. The former would apply to in-state refinery emissions, while the latter would apply to petroleum products from both in-state refineries and imports. This CAF variant would create a more efficient decarbonization incentive

because expedited phasing out of fossil fuel consumption will concomitantly draw down upstream emissions. (15d-CRPSVC-172.3)

Agency Response:

No changes were made in response to this comment. Under the Regulation, industrial allowance allocation is provided to petroleum refineries for the production of finished products, but no allocation is provided to transportation fuel suppliers. All transportation fuel suppliers, imported or in-state, have equivalent exposure to compliance obligation requirements under the Program (i.e., there is no CAF to determine allocation for “downstream” emissions associated with transportation fuel combustion). As such, the recommended change would not address the issue the commenter raises and no changes were made. Please also see Agency Response on alternate mechanisms to address emissions leakage O-4.1a

O-5.3a Multiple Comments: Maintain or Increase Near-term CAFs and Avoid Steep CAF Drop After 2030

Reductions Associated with Cap Adjustment Factor After 2030 are too Significant. In our previous comments, GPI noted that in order to avoid pushing container glass manufacturers out of California, it may be necessary to eliminate the Cap Adjustment Factor (CAF) entirely. Doing so is consistent with statutory changes made to Health & Safety Code §38562(c)(2) made in AB 1207 (Irwin). These changes eliminate the statutory requirement that CARB apply a declining cap adjustment factor to industry allocations equivalent to the overall statewide emissions declining cap. While we appreciate that the draft does not reduce the CAF through 2031, the proposed reductions between 2032 and 2035 are too significant for the container glass industry to withstand. The CAF falls by 30% between 2031 and 2032 alone. The reduction in allowance allocations and corresponding increase in compliance cost risks rendering operations in California unviable. To minimize leakage, CAFs should be set at the highest level necessary to preserve cost competitiveness between California facilities and unregulated competitors operating outside of California. If CARB does not, there is significant potential that container glass facilities will close. (45d-GPI-238.1)

Comment:

The proposed 30 percent reduction in the Cap Adjustment Factor between 2031 and 2032 represents an unprecedented policy shock. Historically, annual reductions averaged about 4 percent per year. The proposal accelerates reductions to roughly 7 percent annually thereafter. This dramatic shift raises significant concerns. Emission-intensive, trade-exposed industries are already facing refinery closures, volatile crude markets, potential federal policy shifts, and increased global competition. CARB’s own Staff Report acknowledges heightened economic pressures and leakage risks. A

sudden and substantial reduction in free allowance allocation will: - Increase compliance costs across the petroleum supply chain, - Reduce capital available for decarbonization and CCUS investment, - Increase the risk of in-state production curtailment, and - Potentially increase imports of higher-lifecycle-emission crude and refined products. Such outcomes would undermine statutory directives to minimize leakage and preserve affordability. CRC respectfully requests that CARB moderate the decline in the Cap Adjustment Factor and return to a more gradual reduction trajectory consistent with historical practice (approximately 4-5 percent annually). (45d-CRC-379.6)

Comment:

CMTA does not agree with the proposed amendments to the Cap Adjustment Factor. Rather than minimizing leakage as intended, the proposed 30 percent reduction in CAFs would have the opposite effect, significantly increasing compliance costs for EITE facilities and potentially rendering certain California operations economically unviable. The CAF is a central component of the allocation formula designed to mitigate leakage risk as the cap declines. A substantial downward adjustment, layered on top of tightening allowance budgets, would sharply increase uncovered emissions obligations for manufacturers already competing against out-of-state and international firms that face little or no comparable carbon costs. To genuinely minimize leakage, CAFs must be set at the highest level necessary to maintain cost parity between California facilities and their unregulated competitors. Any adjustment to CAFs should be grounded in updated, sector-specific leakage analysis and a transparent assessment of cumulative cost impacts. Without these adjustments, the proposed reduction risks driving production, and the associated emissions, out of state, ultimately undermining both California’s economic base and global climate objectives. (45d-CMTA-337.1)

Comment:

Assembly Bill (AB) 1207 (Irwin) expressly directs CARB to design industrial allocation in a manner that minimizes emissions leakage and preserves the competitiveness of California industries subject to carbon pricing.2 Consistent with this statutory direction, adjustments to allocation parameters, including the Cap Adjustment Factor (CAF), should ensure that the level of assistance provided to EITE sectors remains aligned with the economic pressures these industries face. Assistance Factors (AFs) proposed to remain at 100 percent for all EITE sectors through 2035 is consistent with the mandate and reflects the current broad state of emissions leakage risk. However, CARB’s proposed CAFs include an allocation “cliff” for budget year 2032 with substantially reduced allowance allocation coverage through 2035. The CAF is the primary driver of declining industrial allocation coverage during this period. This trajectory materially reduces the share of emissions covered by free allocation, thereby increasing uncovered compliance costs for EITE facilities. Industrial activities with the standard

CAF would decline to only 27.9% coverage of compliance costs by 2035.3 As allocation coverage declines, the relative cost of operating in California rises compared to jurisdictions without comparable carbon constraints. This dynamic contributes to a well-established leakage pathway. (45d-CLECA-417.1)

Comment:

However, those acknowledgements are completely wiped away by the other allocation variables. A significant cost driver for the industry, in addition to the incorrect combining of benchmarks, will be the dramatic step-down of the Cap Decline Factor in Table 9-2 between 2031 and 2032. The ISOR does not explain the rationale for such a step function in general, and there is no staff analysis with respect to having BOTH the benchmark change and the Cap Decline Factor occurring almost simultaneously, and how it will impact in-state producers. CIPA recommends CARB amend the proposal to remove one-time non-linear allocation step function in 2032. (45d-CIPA-369.5)

Comment:

CCEEB appreciates staff's proposal to maintain the current cap adjustment factors (CAF) through 2031, as well as, maintaining the 100% industry assistance factors (AF) for the industrial sector through 2035. However, CARB may want to consider revising the CAF for these critical sectors upwards starting in 2026. The proposed 2026-2035 CAF represents a steep decline, especially acute in 2032 with a 14.6% reduction, an approximately 4-5x greater drop in a single year than the historical trajectory of the CAF. We appreciate that CARB recognizes how the proposed CAF could impact leakage and consumer impact as the initial statement of reasons states: "future changes…may be needed to reflect shifts in the economy, worldwide carbon pricing, and corresponding leakage risks." (45d-CCEEB-377.1)

Comment:

To support the nascent stage of in-state SAF production and the need for its continued ramp-up, Phillips 66 recommends CARB adopt a more gradual Cap Adjustment Factor (CAF) reduction trajectory for SAF production facilities – one that holds at 0.494 in 2031 and declines steadily to 0.279 in 2035, avoiding a steep single-year drop. Phillips 66 supports CARB's proposal to keep CAFs unchanged for budget years 2027 to 2031, which will provide much needed clarity for EITEs with respect to expected allowance allocation. However, the precipitous drop in CAF from 0.494 in 2031 to 0.348 in 2032 will create a significant near-term compliance cost burden for in-state EITEs, and especially for SAF production facilities, originating from a combination of higher priced allowances that are in lower supply and a lower CAF. As per the data shared by CARB staff during the October 2025 workshop, the ratio of industrial allocation to industrial covered emissions is the lowest for California EITEs vs. EITEs in other jurisdictions, as shown in Figure 1, indicating existing compliance cost burden. Over the last few years,

through a combination of plant conversion, fuel switching, implementing energy efficiency projects, and idling operations, EITEs have lowered covered emissions. However, with the proposed changes in CAF in 2032, this burden is expected to escalate, disadvantaging California EITEs. For comparison, this ratio will be 93% in 2032 for Washington EITEs. To ensure SAF production continues to thrive in California, Phillips 66 is urging CARB to adopt a gradual decline in CAF trajectory for SAF production facilities that start at 0.494 in 2031 and ends at 0.279 in 2035 but does not contain a precipitous drop during intermediate years. We are proposing an option for revised CAF in Table 1 obtained by adopting a straight-line decline between 2031 and 2035 CAF values that results in CAF decline rate of ~10.9% per year. This will provide a necessary planning horizon and not undermine California's interest in ramping up the production and use of SAF. (45d-P66C-416.3)

Comment:

The proposed reduction in the CAF also intensifies the cost pressures already confronting California's industrial sector. As CLECA has previously commented, industrial electricity rates in California have risen to more than two-and-a-half times the U.S. average. California's high electricity rates reflect embedded carbon compliance as well as broader state environmental policy, such as resource procurement planning and renewable portfolio standard (RPS) mandates. For energy and emissions-intensive industries, the impact of elevated electricity rates on EITE competitiveness is compounded by Cap-and-Invest compliance costs. Together, these cost pressures directly impact the ability of these industries to compete with out-of-state production and drive the economic feasibility of electrification, carbon capture, and other technology investments needed to decarbonize California's Figure 15 industrial sectors. (45d-CLECA-417.2)

Comment:

The post-2031 steepening is substantial. Under the proposed Regulation (Table 9-2 of Appendix A-1 to the Proposed Regulation Order), the Standard Cap Adjustment Factor holds at 0.494 in 2031 then falls to 0.348 in 2032. That is a reduction of approximately 30% in a single budget year. The Alternate CAF for high-leakage sectors follows a parallel step: from 0.747 in 2031 to 0.610 in 2032. These values then continue declining to 0.279 (Standard) and 0.547 (Alt-CAF) by 2035. For covered industrial facilities, this trajectory represents not a gradual glide path but an abrupt recalibration. CARB's Initial Statement of Reasons acknowledges that Cap Adjustment Factors and other assistance mechanisms must be evaluated considering decreasing allowance budgets, leakage risk, and consumer affordability. That acknowledgment is correct. What is needed is a regulatory framework that converts that acknowledgment into structural design choices, not merely qualitative balance. (45d-CBC-446.4)

Comment:

Comparative leakage data reinforces this urgency. As shown in Table 6 of the ISOR and slide 38 of CARB's October 2025 workshop presentation, California's ratio of industrial free allowance allocation to industrial covered emissions stands at approximately 60–62%. This compares to approximately 100% in Washington, 99% in Québec, 84% in the European Union, and 72% in the United Kingdom. California is already the most stringent of all major comparable emissions trading systems in its treatment of industrial allocation. In the context of a budget removal that accelerates 2027–2030 compliance pressure, and a post-2031 CAF step-down of approximately 30%, that comparative disadvantage is not a theoretical concern. It is a quantifiable and documented structural risk factor that should anchor CARB's leakage analysis. Leakage is no longer theoretical. When in-state production capacity declines and imports increase to meet unchanged demand, emissions will only shift and potentially increase globally. Consumers will face higher prices from supply constraints, transportation costs, and market volatility. Workers face the risk of losing high-quality industrial jobs, and California's manufacturing base, the in-state supply chain that keeps costs lower and emissions accountable, erodes in ways that are difficult to reverse.

In this environment, it is not sufficient to focus solely on the mathematical trajectory of allowance budgets. The distribution of compliance costs and the structure of transitional mechanisms matter at minimum equally, and in the near-term political environment, perhaps more decisively for the program's durability. The amendments under consideration provide an opportunity to recalibrate the program's internal mechanisms so that environmental ambition and economic durability move together. (45d-CBC-446.5)

Comment:

It is widely recognized that California has entered an unprecedented transition of these sectors placing unique strain not only on industry stakeholders, but also Californian workers and consumers. Mechanisms that protect emissions-intensive, trade exposed industries, including allocations of allowances and the Cap Adjustment Factor, must keep pace with the transition, not recede from it as ambition increases and economic conditions become more difficult. (45d-AMRubio-353.1)

Comment:

The tightening allowance trajectory proposed in the rulemaking increases the importance of maintaining a robust industrial allocation framework. Even if the underlying allocation formulas remain unchanged, reductions in the overall allowance budget reduce the absolute number of allowances available for industrial allocation over time. As allocation declines relative to compliance obligations, the share of emissions that facilities must cover through purchased allowances increases. For sectors facing

global competition and limited near-term decarbonization options, this dynamic can increase leakage risk and weaken the business case for maintaining or expanding production in California. AB 1207 reaffirmed that the cap-and-invest program must be implemented in a manner that minimizes emissions leakage while considering affordability and cost-effectiveness. Maintaining an effective industrial allocation framework is one of the most direct ways to implement this statutory direction. Industrial allocation helps maintain production in California, which means the associated emissions remain within the capped system rather than shifting to regions with less stringent climate policies. To preserve the environmental integrity of the program, CARB should consider revising the Proposed Amendments to ensure that industrial allocation continues to function as an effective leakage-mitigation tool under the more stringent cap trajectory. CARB should review the trajectory of the Cap Adjustment Factor (CAF) applied to industrial allocation formulas to ensure that allocation reductions do not outpace the availability of viable decarbonization technologies. CARB should also ensure that allocation methodologies continue to account for production variability and facility growth so that efficient California facilities are not penalized for maintaining or expanding in-state production. In addition, CARB should periodically evaluate sector-specific leakage exposure to ensure that EITE industries continue to receive sufficient allocation to remain economically competitive as the cap tightens. (45d-CCoC-374.2)

Comment:

Compared to California's neighboring states with no carbon compliance mandates in place, California's uncovered compliance costs are dramatically higher still. In this context, further CAF-driven reductions would continue to widen the gap between California and other competing jurisdictions with or without carbon programs in place, increasing the likelihood of emissions leakage. CLECA therefore urges CARB to revise the proposed CAF trajectory to ensure that leakage protection remains commensurate with EITE risk and aligned with the statutory mandate of AB 1207. While CLECA supports CARB's proposal to maintain the current AFs at 100 percent through 2035, we also urge the Board to strengthen the emissions leakage protections provided by the CAFs to better reflect the economic realities facing EITE industries. (45d-CLECA-417.3)

Comment:

Food processing facilities are already closing due to increasing regulatory and economic pressures. For example, since 2020, four of the state's tomato processing facilities have closed. The proposed removal of 118 million allowances from the Program through 2030 will increase the cost of allowances and, in turn, place additional pressures on in-state food producers and increase the risk that additional facilities will close and that production (and associated emissions) will move out of state. To reduce the impact of the increased Program stringency on emissions leakage risk, CLFP strongly supports CARB's proposal to maintain a 100 percent assistance factor for all

manufacturing through 2035, and to reduce the cap decline rate for manufacturers through 2031. (45d-CLFP-328.2)

Agency Response:

Changes were made in response to these comments. In response to concerns about emissions leakage risk and potential impacts to consumers, the 15-day Amendments increased CAFs through 2030 and remove CAFs after 2030, providing additional time for CARB to analyze leakage risk and consider additional data and complementary leakage protection mechanisms before setting allowance allocation for the post-2030 Program, including assessing the trajectory of decline for the CAF. Further, assistance factors are maintained at 100% through 2030, and the product-based industrial allocation methodology continues to reward, not penalize, efficient production by in-state facilities.

The 45-day proposal proposed maintaining the standard and alternate CAFs in the current Regulation through 2030, which are derived from allowance budgets that decline 4% per year on average from 2021 to 2030 (to support the 2030 GHG emissions reduction target, which is 40% below the 2020 target). The alternate CAFs were set to decline at half that rate (2%). To increase leakage protection relative to the 45-day proposal, the 15-day Amendments set the standard CAF at the same level as the alternate CAF in 2027 (0.807), and then drop the annualized cap decline rate from 4% to 3% for the standard CAF, and from 2% to 1% for the alternate CAF.

Please refer to Master Response 1 in the Response to Comments on the Environmental Impact Analysis to comments regarding emissions leakage. Please also refer to Agency Response to comment O-1.1a regarding proposed changes to increase emissions leakage protection.

O-5.3b Multiple Comments: Maintain or Increase Near-term CAFs and Avoid Steep CAF Drop After 2030

A 0.858 Floor for High-Leakage Sectors

The current Standard CAF reaches 0.348 by 2032. The Alternate CAF for designated high-leakage sectors declines at half the annual rate, reaching 0.610 by 2032. We believe that trajectory, for all sectors experiencing documented leakage, should be replaced with a floor anchored at 0.858, the 2024 Alt-CAF level in CARB's own Table 9-2.

This recommendation is grounded in CARB's own methodology. It represents the protection level currently available to CARB's highest-risk industrial sectors. Functionally, it extends that protection to all EITE sectors facing documented leakage

conditions and holds it there while the leakage analysis the Legislature actually required gets completed.

The 2031-to-2032 step-down is particularly severe because several pressures converge simultaneously. First, the Standard CAF drops 29.6 percent in a single year. CARB's own ISOR projects a weighted average allowance price of $68 per tonne under the Proposed Amendments, meaning each reduction in free allocation costs more to replace at auction in 2032 than it would have in 2027. Second, the California refinery sector would see an additional $67 million in costs from the 2031-to-2032 CAF drop.

Table 3 shows the proposed CAF schedule alongside the recommended 0.858 floor. Table 4 shows the per-unit value retained for each affected sector at the 2032 cliff year.

Table 3: Cap Adjustment Factor Schedule, 2027-2045 — Standard CAF, Alt-CAF, and 0.858 Floor

Year	Standard CAF (CARB)	Alt-CAF (CARB)	0.858 Floor	Std. CAF Year-on-Year Change	Alt-CAF Year-on-Year Change
2027	0.613	0.807	0.858	-5.3%	-2.1%
2028	0.579	0.790	0.858	-5.5%	-2.1%
2029	0.545	0.773	0.858	-5.9%	-2.2%
2030	0.511	0.756	0.858	-6.2%	-2.2%
2031	0.494	0.747	0.858	-3.3%	-1.2%
2032	**0.348 (-29.6%)**	**0.610 (-18.3%)**	**0.858**	**-29.6%**	**-18.3%**
2033	0.324	0.588	0.858	-6.9%	-3.6%
2034	0.301	0.567	0.858	-7.1%	-3.6%
2035	0.279	0.547	0.858	-7.3%	-3.5%
2036-2045	Not established	Not established	0.858	N/A (CARB void)	N/A (CARB void)

Note: *Source: CARB Proposed Regulation Order (Appendix A-1, January 2026), Table 9-2, pp. 218-219. CARB has established no CAF or Assistance Factor values beyond 2035. PSC 0.858 floor shown for 2036-2045 to illustrate the planning signal that would result from adoption of Recommendation 3b. 2032 row highlighted: year of maximum CAF cliff.*

Table 4: Per-Unit Impact of PSC 0.858 Floor by Sector, 2032 (Year of Maximum Cliff)

Sector (NAICS)	Current Risk Class.	CAF Type	CARB 2032 CAF	Floor	Value Retained Per Unit (at $70/tonne)
Petroleum Refining (324110) [reclassify]	**Medium**	**Standard**	**0.348**	**0.858**	**+$1.12/barrel (+$0.027/gallon)**
Cement Mfg. (327310)	High	Alt-CAF	0.610	0.858	+$12.47/short ton
Flat Glass Mfg. (327211)	High	Alt-CAF	0.610	0.858	+$8.32/short ton
Container Glass (327213)	High	Alt-CAF	0.610	0.858	+$4.54/short ton
Steel EAF (331111)	High	Alt-CAF	0.610	0.858	+$2.86/short ton

Note: *Source: CARB Proposed Regulation Order, Tables 8-1, 9-1, and 9-2. Dollar values at $70/tonne (near ISOR Table 21 weighted average). "Value retained per unit" represents additional free allocation value per unit of production under the floor vs. CARB proposed CAF. Petroleum row currently Medium classified; this letter recommends reclassification to High.*

The cumulative additional allocation value retained by the California refinery sector under a 0.858 floor versus CARB's proposed Standard CAF trajectory totals approximately $1.72 billion over 2027-2035, at CARB's own projected allowance price levels. That is $1.72 billion in compliance cost exposure that erodes refinery margins toward closure. The CEC's June 2025 findings document what happens when refiner margins compress below import parity: facilities close, imports surge, and fuel prices spike. (BH-MCAA-1.8)

Comment:

The proposed removal of approximately 118 million allowances from the 2027-2030 budgets is significant in its own right. CARB's ISOR is explicit on the near-term stringency this produces: the average annual cap decline under the proposed amendments is approximately 11 percent per year from 2027-2030, compared to roughly 4.6 percent under the current regulation. That is a near-doubling of the annual budget reduction rate. Layered on top is a post-2031 step-down in the Cap Adjustment Factor that CARB's own analysis acknowledges could produce material volatility and leakage risk if not managed carefully. (BH-MCAA-1.14)

Agency Response:

No changes were made in response to these comments. Note that, in response to stakeholder concerns, the 15-day Amendments do not set CAFs for industrial allocation after 2030. This means that the steep cap decline in 2032 that was present in the 45-day proposal is not included in the Proposed Amendments. Post-2030 industrial allowance allocation will be considered in a future rulemaking, as discussed further in Agency Response to comment O-5.3a. See also Agency Response to comment O-5.1a regarding increased CAFs for industrial allocation to mitigate emissions leakage risk in light of increased Program stringency through 2030.

O-5.4a Multiple Comments: Post-2030 CAFs for Refineries and Other Sectors

Establish stable, long-term Cap Adjustment Factors (CAFs) to support the investments necessary to meet California's ongoing energy demands. (15d-BAC-61.6)

Comment:

We understand the desire to adopt a rule by May 28th but call on CARB to initiate a subsequent rulemaking within calendar year 2026 to address the post-2030 allocation void, deliver the overdue leakage report, publish the household bill impact analysis, establish additional leakage protections, and implement a workable CCUS compliance pathway. California's climate program has achieved something real. Protecting it means ensuring the Legislature's statutory mandate for cost-effective, affordable, leakage-minimizing reductions is treated as the program's purpose, not a constraint on its revenue potential. (15d-CPSC-101.5)

Comment:

bp appreciates CARB's efforts to refine the proposed Cap-and-Invest amendments and provide near-term relief to emissions-intensive, trade-exposed (EITE) sectors. However, bp's core concerns from our March 9, 2026 comment letter remain. While the 15-day package improves near-term industrial assistance, the lack of defined post-2030 cap adjustment factor (CAF) parameters creates significant uncertainty regarding long-term carbon cost exposure. Taken together, these elements do not stabilize carbon cost exposure for California-serving facilities relative to global competitors.

As a result, the risk of greenhouse gas (GHG) emissions leakage and erosion of competitiveness for domestic West Coast fuels supplied into California persists, particularly given the structural cost advantages of imported products and other less-regulated supply. bp encourages CARB to adopt more effective approaches to address GHG leakage risk and safeguard global competitiveness, including establishing a defined and durable post-2030 CAF framework that reflects leakage risk, strengthening

industrial assistance for the most exposed sectors, and accounting for the role of imports and other less -regulated competing supply.

Absent such measures, tightening program stringency is likely to shift supply to higher-carbon sources and undermine the reliability and affordability of California's fuel supply. (15d-BPAm-82.1)

Comment:

Phillips 66 recommends CARB define post-2030 CAF and AF trajectories that decline gradually and predictably to provide long-term compliance certainty and minimize leakage risk for in-state EITE facilities, including SAF producers.

... However, the lack of defined CAFs beyond 2030 creates substantial regulatory and investment uncertainty originating from unknown allowance allocation in future compliance periods. A precipitous reduction in the CAF, such as that contemplated in the Initial Statement of Reasons, would impose significant and sudden compliance burdens. Regulatory certainty beyond 2030 is essential for long-term operational planning, including capital investment and facility turnaround decisions. To support the continued viability of SAF production in California, Phillips 66 urges CARB to adopt CAFs for post-2030 budget years that decline at a predictable rate consistent with the 2027-2030 trajectory. (15d-P66-78.3)

Comment:

We also note that the removal of cap adjustment factors (CAFs) beyond 2030, while an improvement over earlier proposals, continues to create uncertainty for long-term investment planning. Refinery upgrades and modernization projects require multi-year planning horizons and significant capital commitments. A four-year window of regulatory clarity is insufficient given these realities. This uncertainty is particularly concerning in the context of ongoing disparities between in-state and out-of-state refining operations, which continue to drive leakage risk. Without clear, long-term signals, there is a heightened risk that investment, and ultimately production, will shift outside of California, undermining both economic and environmental objectives. Given current market conditions, California can no longer afford to lose additional in-state refining capacity. The current geopolitical landscape underscores that disruptions in regions such as Asia, where California relies on imports of finished fuel, can have direct impacts on the state's fuel market. (15d-CFCA-76.7)

Comment:

Chevron objects to the removal of all post-2030 CAFs from the proposed 15-day amendments. Petroleum refineries and crude production require stable and predictable allowance allocation methodologies to sustain operations and support long-term capital investments. These facilities require large capital investments and long development

timelines that are incompatible with frequent, short-term, or uncertain changes to allocations. CARB's 15-day proposal imposes an overall program cap post-2030 but does not provide any clarity on to what extent, or even whether, industrial allocation will be available in that timeframe. If present trends continue, this lack of clarity will predictably lead to increased leakage in contravention of the Legislature's direction.

California law directs that CARB shall "Minimize leakage" in adopting cap-and-invest regulations, a mandatory obligation that, if left unaddressed for the post-2030 compliance period, renders the regulation inconsistent with the authorizing statute within the meaning of Government Code section 11342.2. CARB's proposal to omit post-2030 CAFs fails to recognize that leakage in the refining and crude production sectors is happening now and continues to escalate. This omission would accelerate leakage rather than minimize it due to the long-term planning (i.e., post-2030) that petroleum refineries must conduct today. CARB's representation that it will set post-2030 CAFs in a future rulemaking does not satisfy CARB's present statutory obligation to minimize leakage. Informal assurances of future corrective action do not cure a regulation's failure to comply with a mandatory legislative command at the time of adoption Further, by removing post-2030 CAFs, CARB has rendered its Environmental Impact Analysis incapable of adequately analyzing the actual environmental impacts of emissions leakage that will foreseeably result from the regulation because a key mechanism designed to mitigate that leakage remains undefined CARB's informal representation that it will address leakage risk in a future rulemaking does not cure this deficiency; under CEQA, deferring the analysis and mitigation of a known, foreseeable environmental impact to an open-ended future proceeding while putting the regulation into effect constitutes an impermissible deferral of mandatory environmental review. Accordingly, Chevron urges CARB to, at a minimum, finalize CAFs through at least 2035 to give needed regulatory certainty for petroleum refining (NAICS Code 324110), liquid hydrocarbon fuel production (NAICS Code 325199), and crude petroleum and natural gas extraction (NAICS Code 211111). Chevron also urges CARB to assign petroleum refineries high leakage risk and move crude and natural gas production to the Standard Activities CAF in Table 9-2 Cap Adjustment Factors for Allowance Allocation. Establishing CAFs through at least 2035 would provide longer term regulatory certainty, and support continued in-state fuel production, while helping to maintain affordable and reliable fuel supplies for Californians. (15d-CUSAI-62.1)

Comment:

While the 15-day changes to CARB's proposal for the Cap-and-Invest Program make important improvements relative to the 45-day version, especially with respect to near-term cost impacts on energy and consumer goods, the Bay Area Council remains concerned that these Proposed Amendments have decreased, rather than increased, regulatory certainty for the post-2030 period. Removing 2031-2035 allocation decisions

makes it more difficult for companies subject to the Program to evaluate future costs to inform long-lead time capital investments. This appears to represent a stark contrast to the petroleum stabilization efforts directed by Governor Newsom (15d-BAC-61.1)

Comment:

The substantive concern with the 15-Day Amendments is the deletion of post-2030 CAF values from Appendix A-1. CARB's stated rationale is that additional time is needed to evaluate emissions leakage risk before setting post-2030 trajectories. We understand the analytical caution. We also think the practical effect of the deletion runs counter to AB 1207's extension of the program through 2045, and counter to the leakage-minimization directive that AB 398 and AB 1207 jointly impose on CARB. Capital investment projects like modernization investments, or even continued operation of existing facilities require a forward view of compliance cost exposure that meaningfully exceeds the current regulatory horizon. A regulation that goes dark at 2030, in the middle of a multi-decade transition, does not provide that view. The deletion also produces a particular kind of policy paradox. The longer the post-2030 trajectory remains undefined, the more weight CAF values for 2027 through 2030 carry as a forward signal. Industrial firms reading the regulation today will reasonably extrapolate the 2027 through 2030 trajectory linearly and they will reach values consistent with the prior Standard CAF schedule or worse. As the 45-day record demonstrated these values are insufficient to prevent leakage in trade-exposed sectors. Either reading produces an investment chill in the period between this rulemaking and the next, which is precisely the period in which capital decisions about hydrogen production, CCUS deployment, refinery modernization, and electrified industrial heat will determine whether California's 2045 carbon-neutrality goal remains achievable. (15d-CBC-201.9)

Comment:

Post-2030 visibility. Closing the post-2030 gap on the Cap Adjustment Factor, the NGS-to-EDU transition percentages, and the EDU allocation methodology is the single most consequential piece of work in front of CARB after this rulemaking concludes. Investment decisions for assets coming online in 2035 and beyond cannot be evaluated against a regulatory page that ends in 2030. We urge CARB to commit, on the record, to addressing post-2030 design choices in the next Cap-and-Invest rulemaking, informed by the AB 398 leakage report, and information CARB has been provided in this current rulemaking, that Health and Safety Code § 38562(c)(2)(I) required by the end of 2025, and to extending CAF and Assistance Factor visibility through at least 2045 so that capital planning can match the program horizon AB 1207 established. (15d-CBC-201.20)

Comment:

The 15-Day Amendments are best understood as a starting point, not a complete answer to each program issue. As such, the amendments allow the program time to work through difficult issues. For example, they do not fully deliver the affordability and leakage-protection architecture the statutes require, and the public and economic costs of falling short of that architecture are already being absorbed by Californians and by California facilities in ways that compound between now and 2030. Continued engagement, additional rulemaking, and a willingness to revisit design choices that prove insufficient under real-world conditions will be necessary to avoid further facility closures, manufacturing contractions, and household cost shocks during the period this regulation is in force.

AB 32, SB 32, AB 398, and AB 1207 establish affordability and leakage minimization as binding program design CARB must meet. The most direct expression of those obligations sits in Health and Safety Code § 38562(b). The statute, originating in AB 32, has long instructed CARB to "minimize leakage" (§ 38562(b)(9)) and to "ensure that activities undertaken to comply with the regulations do not disproportionately impact low-income communities" (§ 38562(b)(2)). AB 1207 sharpens that framework in two specific ways. In § 38562(b)(7), the Legislature directs CARB to "consider the effect of these regulations on affordability, cost effectiveness, minimization of leakage in California, and achieving the requirements of Sections 38562.2 and 38566 and the purposes of this division" elevating affordability into an explicit, co-equal design factor alongside leakage minimization and cost-effectiveness. The statutory trajectory is one-directional: each successive amendment has tightened, not loosened, the affordability, leakage, and ratepayer-protection obligations binding on CARB. AB 1207 is the most recent and most explicit articulation of that direction.

Auction revenue is a co-benefit of the program, not a primary statutory objective. We raise this because as allowance budgets tighten on the path to 2030 and 2045 with no feasible technology being implemented today to achieve these targets, the tension between what every allowance is worth at auction and what the program is statutorily required to do with that allowance is becoming visible in design choices. The honest read of where things stand is that the statutes settle that tension in favor of affordability, leakage protection, and equitable distribution of compliance costs. The 15-Day package narrows the gap between the statutory direction and the design. It does not yet close it.

Our concern about long-term signal is tied to that point. Industrial decarbonization, hydrogen and CCUS infrastructure, refinery modernization, and electrification investments at scale operate on planning horizons that routinely extend to 2040 and beyond. The 15-Day Amendments retract post-2030 Cap Adjustment Factor values and do not provide clarity on post-2031 NGS-to-EDU transition percentages, deferring both

to a future rulemaking. The practical effect is that compliance entities evaluating capital allocation for potential California projects no longer have a regulatory cost-of-compliance trajectory to model against. AB 1207 extended the program through 2045. Investors are being asked to commit to that horizon against a regulation that is opaque post-2030. The mid-transition risk in which incumbent infrastructure deteriorates faster than replacement infrastructure scales becomes considerably harder to manage when the carbon-pricing signal itself is the variable least visible to the people making capital decisions. (15d-CBC-201.1)

Comment:

Proposed Changes to Industrial Allowance Allocation: Cap Adjustment Factors and Near-Term Price-Containment. CCEEB acknowledges staff's proposal to modify the cap adjustment factor (CAF) for standard activities from 2027-2030. As noted in the modified statement of reasons (MSOR), the proposed changes are consistent with legislative direction to minimize leakage and consider the economic impacts of Cap-and-Invest on the State's manufacturing sector. However, by deferring setting of 2031-2035 CAFs to a future rulemaking, we believe some of that leakage minimization may be undercut... While the proposed 15-day language sends a short-term signal that CARB understands industrial sector economic uncertainty, it defers further long-term action on price containment... In our 45-day comment period letter, CCEEB encouraged CARB (consistent with legislative direction in AB 1207) to further analyze whether the current structure of the price containment reserve and price ceiling "adequately protect California consumers" and minimize leakage or if additional actions are warranted beyond the proposed addition of 1% of post-2030 allowances to the Tier 1 Reserve. We continue to strongly recommend that CARB complete its analysis of emissions leakage risk for covered facilities and set reasonable post-2030 CAFs paired with stronger price containment mechanisms with the most accurate and up-to-date information possible. Without longer-term certainty, emissions leakage may occur regardless of future changes CARB might make to the program as the industrial sector cannot adequately plan for such changes. (15d-CCEEB-165.3)

Comment:

First, CARB's failure to address post-2030 program requirements creates regulatory uncertainty that undermines long-term, multi-year investment cycles in California's petroleum sector. These long-term investments are essential for achieving emissions reductions for petroleum and biofuel refineries due to substantial capital outlays, lengthy permitting timelines, and extended project development horizons that are incompatible with frequent or uncertain changes to allocation methodologies. Long-term program protections help align investment risks with what investors are willing to accept for energy infrastructure improvements. Providing investor confidence is critical to

stabilizing California's petroleum supply and protecting California's industrial competitiveness, consistent with the Governor's directive to the CEC that in-state "refiners continue to see the value in serving that California market." (15d-WSPA-164.4)

Comment:

At the same time, the limited time horizon over which cap allocation factors are specified creates a material gap in regulatory predictability. Many covered facilities make investment decisions today for assets expected to operate well into future decades. Decisions involving process redesign, fuel switching, carbon capture, equipment replacement, and major facility modernization depend on assumptions about long-term compliance obligations and regulatory conditions. Providing certainty only through 2030 does not align well with how these investment decisions are made and can make it more difficult for covered entities to evaluate and commit to long-lived in-state investments. These concerns are not hypothetical. Leakage risk is already shaping investment and operational decisions in emissions-intensive sectors through deferred reinvestment, constrained growth, and future production occurring outside California. California has seen examples of industrial contraction, including refinery capacity reductions and closures, food processing facility relocations, and other pressures on trade-exposed manufacturing that underscore how cost pressures and regulatory uncertainty can influence where production occurs. That reality reinforces why long-term allocation certainty is not only a safeguard against leakage, but also a precondition for the industrial decarbonization investments the program seeks to induce. When post-2030 allocation treatment remains uncertain even as the cap becomes significantly more stringent, covered entities may delay or redirect long-lived capital investments, creating risks not only for competitiveness and leakage protection, but also for achieving the deeper emissions reductions the program is intended to drive. For these reasons, CalChamber encourages CARB to provide greater visibility regarding the post-2030 industrial allocation trajectory to give covered entities increased confidence that leakage protection will remain durable as program stringency increases. Long-term clarity around those signals would help support the in-state investments needed to achieve emissions reductions while minimizing leakage, consistent with the objectives reflected in AB 1207. (15d-CCoC-158.2)

Comment:

These Draft Regulations create an opportunity to create a continued path for California's refineries, but to do that, they need significant changes, including creating certainty well beyond 2031, such that it would incentivize the type of capital and maintenance investments that put our skilled and trained members to work, including, important to both the Boilermakers and CARB's scoping plan, carbon capture and storage. (15d-IBB-11.1)

Comment:

In addition, CARB has not proposed CAF values and Assistance Factors beyond 2030. Manufacturers making long-term capital and operational decisions need greater certainty regarding future allocation assistance levels. CMTA encourages CARB to provide an early roadmap for post-2030 CAF and Assistance Factor treatment. CMTA urges CARB to:

- Maintain robust assistance factors through 2030 and beyond unless updated sector-specific leakage risk analysis demonstrates otherwise;
- Preserve the output-based allocation structure, which incentivizes efficiency and aligns compliance obligations with actual production levels; and Avoid policy changes that weaken leakage protections through accelerated allowance reductions or structural market changes.
- Absent strong and durable leakage mitigation, California risks shifting production, and associated emissions, to jurisdictions with less stringent environmental standards. (15d-CMTA-204.2)

Comment:

California's industrial employers evaluate and finance major capital investments on 10- to 30-year time horizons. Decisions regarding new production capacity, facility modernization, and decarbonization retrofits will require reasonable visibility into future compliance costs and allocation treatment over the full useful life of the assets. When the regulatory signal is ambiguous beyond 2030, capital flows elsewhere, regardless of whether a facility's California operations are otherwise competitive. In an environment where other U.S. states have actively positioned themselves as alternatives to California’s regulatory environment, that ambiguity carries real consequences. The proposed amendments extend the Cap-and-Invest program through 2045, with annual allowance budgets defined for each year of the program's duration, declining from 254 million allowances in 2026 to 158.8 million in 2030 and to 30.3 million by 2045. Yet the Cap Adjustment Factor (CAF), the core mechanism through which CARB calibrates leakage protection for energy-intensive, trade-exposed industrial activity, is defined only through budget year 2030. For the 15 years from 2031 through 2045, during which the annual allowance budget declines by more than 80 percent, the proposed 15-day amendments now provides no defined CAF values and no published methodology for establishing them a mere four years from now. This structure creates several concrete problems for California employers: First, capital allocation decisions are being made today for assets that will operate well into the 2040s. Without reasonable confidence regarding post-2030 compliance treatment, investment committees at multi-state and multinational firms will apply risk premiums to California opportunities or redirect capital to jurisdictions with clearer regulatory horizons. The cost of that uncertainty is paid in

deferred investment, reduced workforce hours, and in some cases facility closure – also known as leakage, which CARB is statutorily obligated to minimize. (15d-LACBF-15.1)

Comment:

California's broader regulatory environment compounds the line-of-sight problem. Employers evaluating California investments are simultaneously navigating numerous other regulatory mandates from CARB, other State agencies, and the regional air pollution control districts. No single agency accounts for the cumulative compliance burden. When Cap-and-Invest adds long-term uncertainty on top of a regulatory stack that already imposes near-term compliance costs from multiple directions, the effect on investment decisions is not additive, it is multiplicative. A facility that might absorb any one of these programs may decline to absorb all of them simultaneously without a clearer long-term signal. A credible long-term signal does not require CARB to lock in today's numbers forever. It would, however, allow employers to understand, with reasonable confidence, how the program will treat energy-intensive, trade-exposed activity over the life of their investments. Without that signal, the program will continue to accelerate the very outcome it is intended to avoid – the relocation (or “leakage”) of production, jobs, and emissions outside California. (15d-LACBF-15.3)

Agency Response:

No changes were made in response to these comments. The Proposed Amendments do not set allowance allocation, and therefore also did not set CAFs, after 2030, however, they contain several mechanisms to increase near-term support for industry and support affordability for consumers during a near-term period of significant economic uncertainty and volatility in global markets. These changes include increased CAFs for most industrial sectors through 2030 and a strengthened MDI proposal that provides additional allowance allocation to support demonstrable facility investments in low-carbon production methods and fuels, for which eligibility was extended to refineries in the 15-day Amendments. These changes maintain the carbon price signal that supports emissions reductions and encourages long-term decarbonization investments in covered sectors, while strengthening near-term incentives for facility GHG reductions that further lower compliance costs and support progress toward the 2030 and 2045 GHG reduction targets.

CARB disagrees with commenters’ assertions that removing the 2031-2035 CAFs is contrary to statutory direction to minimize leakage. While CARB appreciates the desire and importance of regulatory certainty further out, CARB agrees with other public comments that more time is needed to adequately and appropriately evaluate and establish post-2030 allocation, CAFs, and leakage risk, particularly given this near-term period of significant economic uncertainty.

See, for example, Agency Response to comments H-2.2 and O-13.3. Recognizing that, CARB has made adjustments to minimize leakage during this period, in line with its statutory obligations. See also Agence Response to comments O-1.1a and O-1.3a. Further delays to assess post-2030 CAFs in this rulemaking would jeopardize CARB's ability to achieve a September 1, 2026, effective date, as discussed further in Agency Response to comment V-1.2b.

The CAF for standard industrial activities in Table 9-2 was increased to 0.807 in 2027 and is set to decline more gradually through 2030, which is estimated to cover around 70% of facilities' compliance obligations[1] while continuing to signal the need to reduce emissions in line with the State's GHG targets. See Agency Response to comment O-5.3a. The Proposed Amendments also maintain the product-based allocation methodology and the 100% assistance factor through 2030 as established in AB 398.

Given the significant near-term economic uncertainty, the Proposed Amendments do not set allowance allocation for any sector after 2030. Some commenters urged expediency in setting post-2030 industrial allocation in a subsequent rulemaking. CARB staff is continuing to evaluate cap adjustment factors and additional and complementary mechanisms for after 2030 to address the risk of emissions leakage related to both covered industrial emissions and products that are not currently covered by the Program. Post-2030 allowance allocation will also be informed by updated data on in-state production and emissions leakage risk as available. As stated in the ISOR, staff are in the process of evaluating leakage risk and potential additional measures to reduce leakage risk for covered industrial sectors. As directed by Board Resolution 26-7, staff will begin a public process no later than July 1, 2028, to evaluate and proposed future amendments, as appropriate, for industrial allocation for post-2030 including consideration of MDI investments and alternative, or additional, mechanisms to integrate into the program emissions related to manufacturing of products entering the state to minimize leakage for sectors with imports of high carbon products.

For additional discussion on mitigating emissions leakage risk in the Program, see Master Response 2 of the Response to Comments on the Environmental Impact Analysis.

Concerning CCUS in the Program, refer to the Agency Response to comment S-4.2a.

[1] It should be noted that 70% is still lower than most other ETS programs around the world. See Table 1 in Agency Response to comments O-1.1a.

O-5.4b Multiple Comments: Post-2030 CAFs for Refineries and Other Sectors

Three gaps require action this year. We cannot afford more job loss or another facility closure.

• The post-2030 regulatory void is the most urgent. The 15-day proposal struck the 2031–2035 CAF values and eliminated Table 9-4 entirely. No specified allocation values exist for industry or utilities beyond December 31, 2030. Capital investment decisions with 10-year horizons cannot be made against a blank regulatory page. California's industrial free allocation ratio sits at 62 percent, the lowest of any major comparable program, against Washington's 94 percent and Quebec's 99 percent. A post-2030 void in this environment does not produce a neutral outcome. It produces the next closure. For these reasons, PSC supports swift conclusion of the current rulemaking, followed quickly by a subsequent rulemaking that addresses post-2030 allowance allocations for industry and utilities. (BH-CPSC-5.5)

Comment:

C. The Post-2035 Void Perhaps the most consequential design gap in the entire proposal is what CARB has left undefined. The Proposed Regulation Order establishes CAF and Assistance Factor values only through 2035. Beyond that date, no values exist. For a covered facility evaluating whether to invest in a decarbonization project that would not be operational until 2037 or 2038, there is literally no regulatory signal to base that decision on. Capital investment committees at major industrial facilities routinely require a 10-year cost-of-compliance horizon to approve major projects. CARB's proposed structure provides seven years of values, then silence. That silence is itself a leakage driver: it makes the case for relocating rather than staying. When a facility relocates, collective bargaining agreements, apprenticeship programs, and wage standards that took decades to build do not transfer. The workers do not follow the capital... Recommendation 3c: Establish CAF and Assistance Factor values through at least 2045, not 2035, to provide the long-horizon planning certainty that industrial capital investment decisions require. A facility evaluating a decarbonization project coming online in 2038 cannot plan against a blank regulatory page. (BH-MCAA-1.9)

Agency Response:

No changes were made in response to these comments. See Agency Response to comment O-5.4a regarding addressing post-2030 allowance allocations. Per Board Resolution 26-7, CARB will begin a public process to address post-2030 allocation no later than July 1, 2028.

O-5.5a Multiple Comments: Increase Leakage Protection by Expanding Eligibility for the Alternate CAF to Additional Sectors

CARB should expand application of the Alternate Cap Adjustment Factor (Alt CAF). Facilities with high process emissions (which are currently eligible for the Alt CAF) and industries that are reliant on natural gas because reliable, cost-effective electricity or alternative fuel is not available or not technologically feasible, face the same constraints to decarbonization. In both cases, because the industry sectors are limited in the extent to which they can decarbonize their operations, the Program's ability to incentivize GHG emissions reductions is constrained. Applying the Alt CAF to the food processing sector would mitigate the impact of the Program on economic and emissions leakage, keeping food production in the state where it is subject to California's environmental, worker protection, and community protection laws. (45d-CLFP-328.7)

Comment:

Cap Adjustment Factors Should be Adjusted for Small Refiners. Kern strongly urges Staff to consider an alternative cap adjustment factor for small refineries given the disproportionate weight of their compliance burden. The existing annual decline of four percent in the cap adjustment factor already creates an immense compliance burden and is exacerbating observed leakage in the refining sector. And yet, Staff is proposing amendments that amplify this decline to a new "normal" of seven percent with a massive 30% decline between 2031 and 2032. The California Energy Commission's August 2025 Staff Report on Maximum Gross Gasoline Refining Margin and Penalty observed a notable disparity between the 30% decline in-state gasoline production and a mere 15% decline in gasoline demand in recent years, specifically attributed to the loss of California-based refineries. This rapid loss of refining capacity clearly evidences the need for additional mitigation for the refining sector. California's small refineries, including Kern, cannot bear the intensity of these new cap adjustment factors proposed through 2035. Kern acknowledges the difficult path Staff must navigate to incorporate program provisions for achieving 2045 climate goals, and requests that at a minimum, CARB reexamine how to smooth the effects of the sharp decline between 2031 and 2032. (45d-KE-392.6)

Agency Response:

Changes were made in response to these comments. The 15-day Amendments increase CAFs for all industrial sectors through 2030 by setting the standard CAF at the same level as the alternate CAF in 2027 (0.807) and relaxing the annual decline from 4% to 3% for standard CAF sectors, and from 2% to 1% for sectors on the alternate CAF. This change sets allocation for standard CAF sectors at a level close to what alternate CAF sectors receive under the current Regulation, while preserving the fundamental relationship between the standard and

alternate CAF, where a 2 percent slower CAF decline is provided through 2030 to sectors with high emissions intensity, high leakage risk classification in Table 8-1, and over 50 percent of total emissions from process emissions. In recognition of significant near-term economic uncertainty, the Proposed Amendments do not set CAFs post-2030, which provides additional time for CARB to analyze leakage risk and consider additional data before setting allowance allocation and any complementary leakage protection mechanisms for the post-2030 Program.

O-5.5b Comment:

Iron and Steel Mills (NAICS 331111) was assigned a high leakage risk classification by CARB from the inception of the Program, reflecting the sector's extreme trade exposure, limited ability to pass carbon costs through to customers given commodity market dynamics, high energy intensity, and demonstrated vulnerability to production relocation. Despite this, CARB originally determined that the steel sector should receive the standard CAF rather than the alternate CAF that provides enhanced leakage protection to a more limited group of sectors. PSG requests reconsideration of this classification given: (1) the demonstrated extreme trade exposure evidenced by the total elimination of California steel melting since Program inception; and (2) the transfer of indirect emissions allocation to CARB, which creates a new opportunity to evaluate direct process emissions and electrified process emissions holistically. (15d-PSG-107.7)

Agency Response:

No changes were made in response to this comment. Please refer to Agency Response to comment O-5.5a for response on increased CAFs for 2027-2030 industrial allocation to most industrial sectors, including iron and steel mills, providing increased support in response to significant near-term economic uncertainty. CARB will analyze leakage risk and consider additional data in a future rulemaking for setting allowance allocation and any complementary leakage protection mechanisms for the post-2030 Program. See response to comment O-7.1a for further discussion on the process and evaluation of direct allowance allocation for electricity purchases, in coordination with the CPUC.

O-5.6a Multiple Comments: Pause declining CAF until additional leakage-protection mechanism is in place

Until a proven BCA is put in place, pause CAF declines for high leakage risk and hard-to-decarbonize industries such as the cement industry. (45d-CSCME-352.1)

Comment:

In the absence of such mechanisms, the cumulative burden of compliance costs and energy price differentials will continue to erode the competitiveness of sectors that are central to the state’s low-carbon economy. CLECA therefore recommends that CARB

suspend further CAF reductions for EITE industries to preserve effective leakage mitigation until longer-term market solutions can be implemented in coordination with the phase-down of CAFs. Notably, the sequencing of an effective BCA (should one be adopted) followed by a gradual ramp-down of industry assistance is critical to avoiding industrial leakage. (45d-CLECA-417.4)

Agency Response:

Changes were made in response to these comments. The 15-day Amendments increase CAFs for all industrial sectors through 2030 and remove CAFs after 2030. CARB will assess the appropriate level of emissions leakage protection and any potential complementary leakage protection mechanisms post-2030 in a future rulemaking. See further discussion on alternate mechanisms for leakage protection in response to comments in O-4.1a.

O-5.6b Comment:

PSG recommends that CARB suspend any further decline in the CAF for iron and steel mills at the level in effect in 2019 — 0.869 — until California implements a border carbon adjustment or equivalent policy that subjects imported steel to comparable carbon compliance obligations. The rationale for this recommendation is grounded in a fundamental principle of regulatory fairness: a declining allocation factor is designed to reduce industry assistance as a sector adapts its operations and reduces its emissions intensity in response to the Program's price signal. But this logic presupposes that the industry in question is present within the state, receiving the price signal, and has the opportunity to respond. When California's last steel mill stopped melting steel in 2019 and permanently closed in 2020, the steel melting sector became a sector with no in-state presence. There are no existing California iron and steel mill facilities receiving free allocation under a declining CAF and using that allocation to support the emissions reductions CARB contemplates. (15d-PSG-107.6)

Agency Response:

No changes were made in response to these comments. Please refer to O-5.6a for Agency Response to comments regarding pausing the annually declining CAF until an additional leakage-protection mechanism is in place.

O-5.6c Comment:

THE CAP ADJUSTMENT FACTOR

Leakage is not a theoretical concern. When in-state production capacity declines and imports increase to meet unchanged demand, emissions shift and are likely to increase globally. Consumers face higher prices from supply constraints and transportation costs; workers, many of them members of trades and building unions with deep roots in refinery towns, cement communities, and food processing regions, lose not just jobs but

career pathways, pension contributions, and the kind of stable employment that anchors working-class communities. California's manufacturing base will erode in ways that we are concerned cannot be reversed. When California transportation fuel production costs are higher than the cost to produce and import similar fuels, in-state facilities suffer, as they cannot compete with cheaper imports not subject to stationary source fees.

The result is not emissions reductions it is production displacement. Every covered facility that leaves California leaves manufacturing employment, adjacent business activity, local property and business tax revenue. A static CAF does not lower the cap; it preserves the industrial base that the program aims to decarbonize rather than displace. The CAF floor provides interim protection while California works toward the more durable solution: ensuring that goods and fuels entering California from jurisdictions without equivalent carbon pricing face a corresponding adjustment at the border, so that the competitive disadvantage created by in-state carbon costs does not simply export production, and emissions, elsewhere.

California’s ratio of industrial free allowance allocation to industrial covered emissions stands at approximately 62 percent, the lowest of any major comparable program. Washington State’s Cap-and-Invest program provides EITE industries with no-cost allowances equal to 94 percent or more of baseline emissions through 2034. Quebec sits at 99 percent, the EU at 84 percent, and the United Kingdom at 72 percent. In the context of a budget renewal that accelerates 2027–2030 compliance pressure and a post-2031 CAF step-down of approximately 30 percent, California’s comparative disadvantage is not hypothetical; it is a quantifiable structural risk. (BH-MCAA-1.6)

Agency Response:

No changes were made in response to these comments. Please refer to O-5.6a for response to comments regarding pausing the annually declining CAF until an additional leakage-protection mechanism is in place.

O-5.7a Comment:

The Importance of Regulatory Certainty. The GUG strongly supports regulatory certainty to enable prudent planning and avoid rate shock. Within this context, we support continuation of the current (CAF) through 2030 and the existing consignment schedule. Even with these guardrails, increasing CAF stringency and higher consignment will still raise NGS compliance costs. NGS allowances have historically mitigated compliance costs, but moving forward, customers will become more exposed to passthrough costs of the program. (45d-GUG-426.3)

Agency Response:

Changes were made in response to these comments. CARB acknowledges the commenter’s concerns regarding compliance costs and has reserved 30% of

natural gas supplier allowances to specifically benefit low-income residential ratepayers. Please refer to Agency Response to Comment I-1.1a.

Staff appreciate the commenters' support for maintaining the current CAF through 2030 and the existing consignment schedule. The Cap-and-Invest Program is designed to create a carbon price signal that supports emissions reductions and encourages long-term decarbonization investments in covered sectors. Allowance value continues to provide support that helps mitigate ratepayer impacts during this transition. The CAF beyond 2030 will be evaluated in a future rulemaking.

O-5.7b Comment:

Cap Adjustment Factors (CAFs) should be published beyond 2030. SoCalGas is concerned that the removal of CAFs after 2030 will foster uncertainty during a critical transition period. CARB has consistently emphasized the importance of meeting environmental objectives while avoiding unnecessary cost impacts. Continuing to publish CAFs beyond 2030 would align with that objective by supporting program stability, customer protection, and effective program administration. SoCalGas respectfully requests that CARB reconsider removing CAFs for the post-2030 period. (15d-SCG-183.7)

Agency Response:

No changes were made in response to this comment. In recognition of significant near-term economic uncertainty, the Proposed Amendments do not set CAFs for any sector after 2030, providing CARB with additional time to analyze potential measures to minimize emissions leakage risk and consider affordability impacts to consumers, including gas and electric utility ratepayers. Potential post-2030 allowance allocation for natural gas suppliers will be informed by the natural gas allocation transition directed in AB 1207, which is set to reach a 70 percent transition by 2031 in the Proposed Amendments, significantly more stringent annual allowance budgets compared to the current regulation.

O-5.8 Comment:

The 15-day amendments revise Table 9-2 to increase Cap Adjustment Factor (CAF) values for Standard Activities for budget years 2027 through 2030, with additional uplift for a defined set of process intensive industrial activities under NAICS codes 325311, 327310, and 327410. CRC supports the uplift to Standard Activities and the recognition that the prior trajectory did not reflect statutory leakage and affordability directives. The revised Table 9-2, however, places Crude Petroleum and Natural Gas Extraction under NAICS codes 211111 and 211112 in a new category alongside Universities and Public Service Facilities, Legacy Contracts, and Natural Gas Suppliers, and holds those codes at the prior, unuplifted CAF values through 2030. That categorization is inconsistent with

CARB's own leakage risk assessment. Table 8-1 classifies NAICS 211111 and 211112 as "High" leakage risk. The activities grouped with oil and gas extraction in the new Table 9-2 column — universities, public service facilities, legacy contract generators, and natural gas suppliers — do not share that leakage risk profile, do not operate in internationally traded commodity markets, and do not face the emissions leakage pressures the CAF addresses. Grouping NAICS 211111 and 211112 with those categories mismatches the regulatory tool to the underlying risk. The consistent approach is to assign NAICS 211111 and 211112 the Standard Activities CAF values. Standard Activities receives the leakage-protection uplift, and it is the category that matches the High leakage risk classification CARB has already applied to NAICS 211111 and 211112 in Table 8-1. Assigning oil and gas extraction the Standard Activities CAF would align Table 9-2 with Table 8-1, treat comparable leakage risks comparably, and recognize the role of in-state upstream production in supplying California's refineries. The categorization itself sets the baseline for the steeper declines that follow and establishes the framework CARB will apply in future rulemakings. Correcting the categorization now ensures that framework reflects the actual leakage risk profile of the affected sectors. (15d-CRC-161.8)

Agency response:

No changes were made in response to this comment. CARB has provided leakage minimization support for oil and gas sectors through the existing CAFs and by extending MDI eligibility on CCUS projects. The MDI, in combination with maintaining the existing CAFs for the oil and gas sector, provide the appropriate near-term opportunities, leakage prevention, and incentive signals for oil and gas producers to continue to reduce the overall GHG intensity of their oil and gas production activities, consistent with the State's overall long-term climate objectives. As discussed in Agency Response to comment O-5.4a, CARB will evaluate post-2030 CAFs in a subsequent rulemaking. Please see Agency Response O-8.4a.

O-5.9 Multiple Comments: Support for 15-day Amendments

Cap Assistance Factor (CAF): Neste appreciates the adjustments to the CAF that will ensure in-state biorefineries can compete with out-of-state facilities, but we look forward to understanding how this adjustment will carry forward after 2030. Neste recommends that CARB continue monitoring for continued leakage within California, and further adjust the CAF to reduce leakage. (15d-N-77.3)

Comment:

Phillips 66 supports CARB's newly proposed changes to Cap Adjustment Factors (CAFs) and industry Assistance Factors (AFs) for budget years 2027 to 2030. (15d-P66-78.1)

Comment:

CLECA urges the Board to adopt the Cap and Invest proposed regulatory structure with 15-Day Amendments at the May 28, 2026 hearing. The revised CAF trajectory and the restructured MDI framework represent a meaningful improvement to mitigate emissions leakage and encourage industrial decarbonization over the 45-Day proposal. Adoption will help provide the industrial sector with a regulatory structure to encourage meaningful decarbonization investments. (15d-CLECA-112.1)

Comment:

Nucor supports CARB's proposed revisions to the cap adjustment factors for budget years 2027 to 2030. The increased cap adjustment factors represent a meaningful improvement over the values proposed in the 45-day package and will help ensure that California's only operating steel mill receives adequate leakage protection during a period of significant economic uncertainty. CSI already faces higher electricity and compliance costs than out-of-state and international competitors, and the revised cap adjustment factors better reflect the reality that emissions-intensive, trade-exposed industries like steel require sufficient free allocation to prevent the shifting of production to regions with weaker climate standards. Nucor appreciates CARB's recognition that near-term economic relief is necessary to maintain industrial competitiveness while the program transitions to more ambitious long-term targets. (15d-N-114.1)

Comment:

Certain modifications in CARB’s Proposed 15-Day Amendments were promulgated in response to concerns expressed by in-state refiners. PBF expects to be able to continue operating our California refineries over the near term if these amendments are approved by the CARB Board during its May 28, 2026 meeting, as proposed. (15d-PBF-160.1)

Comment:

We support revising the post-2030 industrial free allocations given updated and current empirical evidence of emissions leakage. We commend CARB for removing the originally proposed post-2030 allocations in the ISOR. (15d-TCC-29.3)

Comment:

The 15-day Amendments improve the cap adjustment factor applicable to industrial allowance allocation through 2030. As a central element of the allocation formula, the cap adjustment factor helps determine the volume of allowances industrial facilities receive as part of the program’s leakage protection framework. By increasing the cap adjustment factor relative to the earlier proposal, the 15-day Amendments improve leakage protection by slowing the decline in industrial allowance allocation and helping

address concerns that compliance obligations could tighten faster than covered entities can reasonably deploy decarbonization solutions in the near term. Particularly in sectors facing global competition and limited near-term technology substitution options, preserving a more robust industrial allocation framework during this period supports continued in-state investment while reinforcing allowance allocation as a core leakage protection mechanism within the program. These changes also better align the program with AB 1207's express directives to minimize leakage while considering affordability and cost-effectiveness. (15d-CCoC-158.1)

Comment:

ClimateBuild appreciates the upward revisions to the Cap Adjustment Factors for budget years 2027 through 2030 reflected in revised Table 9-2 of the 15-Day Amendments. The increases improve the protective allocation flowing to emissions-intensive, trade-exposed sectors during the period in which the program's stringency is accelerating most sharply, and they respond to substantial 45-day record evidence that the prior trajectory understated documented leakage risk in petroleum refining, food processing, cement, glass, and steel. We support the direction of the change. We also want to acknowledge the broader context. California's ratio of industrial free allocation to industrial covered emissions stood at approximately sixty-two percent under the prior structure, the lowest among major comparable carbon programs, well below Washington's roughly one hundred percent, Quebec's ninety-nine percent, the European Union's eighty-four percent, and the United Kingdom's seventy-two percent. The 15-Day revisions narrow that gap. They do not close it. California remains the most stringent allocator among comparable systems, in an economic environment in which the documented evidence of leakage continues to accumulate in real time. The statutory framework treats that gap as a problem CARB is required to address, not merely consider. Section 38562(b)(9) imposes a freestanding "minimize leakage" directive on CARB, and AB 1207's new § 38562(b)(7) elevated leakage minimization to a co-equal design consideration alongside affordability and cost-effectiveness. Phillips 66 permanently ceased conventional crude oil processing at its Wilmington refinery at the end of 2025. Valero announced plans to idle or cease operations at its Benicia refinery by April 2026. The California Energy Commission Vice Chair's June 2025 letter to Governor Newsom warned that gasoline imports could reach twenty-five to thirty-five percent of demand by summer 2026, and up to fifty percent in northern California after the anticipated closures. These are not future risks. They are present conditions shaping fuel supply, employment, and public revenue across multiple regions of the state. (15d-CBC-201.8)

Comment:

We appreciate the increases that CARB provided to the cap adjustment factors through 2030… (15d-AP-83.7)

Comment:

Kern supports Staff's proposed increase to the cap adjustment factors as presented in Table 9-2 of the 15-day Amendments. This change reflects Staff's recognition of the challenges that industries face in maintaining consistent production while working to achieve decarbonization and meet the State's climate goals. As a small refiner, Kern is acutely aware of the pressures facing the refining sector as the demand for transportation fuels remains greater than in-state refining capacity and global geopolitics impact the delicate balance of statewide inventories. Kern is cautiously optimistic about the abbreviated timeframe for cap adjustment factors, with Staff truncating the decline at 2030 at this time. We appreciate Staff's recognition that additional time is needed to thoroughly evaluate leakage risk and develop complementary protection mechanisms, and encourage them to provide adequate runway for business certainty and investment as they undertake this next phase to develop cap adjustment factors for 2031 and beyond. (15d-KE-190.3)

Comment:

GPI appreciates many of the changes proposed by CARB staff. Most notably, we appreciate the proposal to increase the 2027 Cap Adjustment Factor (CAF) and to moderate subsequent declines. As we have noted previously, the container glass industry is facing enormous pressure and is in a challenging position in California. The increase in the CAF reflects that challenge. (15d-GPI-79.1)

Comment:

CLFP supports CARB's proposals aimed at reducing the risk of emissions leakage through 2030, including CARB's proposal to maintain the 100 percent assistance factor for all sectors and to modify the Cap Adjustment Factor (CAF) to reduce the rate of cap decline for California manufacturers. These changes are important improvements that help to keep food processing facilities, and the jobs and economic benefits they provide, in the state. (15d-CLFP-139.1)

Comment:

CARB's prior analysis has consistently demonstrated that the output-based allocation system, paired with robust assistance factors, is essential to prevent emissions leakage. This remains especially important given current economic uncertainty, evolving federal policies, barriers to maintaining efficient in-state production, and the slower pace of carbon pricing adoption in competing jurisdictions than anticipated when the original

regulation was adopted in 2011. CMTA appreciates CARB's proposal to increase the 2027 Cap Adjustment Factor (CAF) for Standard Activities from 0.613 to 0.807 and to moderate subsequent declines. Continued recognition of the leakage risks facing California manufacturers in future amendments will remain critical. CMTA respectfully requests clarification regarding the proposed CAF schedule. CARB's notice states that from 2028–2030, the standard and alternate CAFs decline at approximately one percent less annually; however, based on review, the published factors appear to decline by approximately three percent annually. We request confirmation of the intended trajectory. (15d-CMTA-204.1)

Agency response:

No changes were made in response to these comments. Staff appreciate the commenters' support for the Proposed Amendments.

Please refer to Agency Response O-5.3a regarding comments on CAF between 2028 and 2030.

O-5.10 Multiple Comments: Oppose Increased CAFs for Industrial Allocation

While E2 supports the timely adoption of these regulations, the 15-Day Changes include a disappointing departure from California's aggressive climate action. The increase in industrial free allowances, while proposed in acknowledgement of federal tariff volatility, will reduce market incentives and capital for innovative low-carbon projects. This is happening during a time when the U.S. Department of Energy has reneged on billions of dollars of investment in our climate and economy. Additionally, the regulations propose a significant expansion of the MDI, which now substantially takes from allowances that were set to be retired and expands access for the state's refineries. While the original version of the MDI would have stimulated innovation by increasing future year ambition, the modifications will rely on CARB to use strong, timely implementation and oversight to prevent distortions, loss of real emission reduction, and uncertainty about the market's performance. (15d-E2-54.4)

Comment:

Ensure program amendments do not undermine legislative commitments to maintain affordability and adequate levels of program funding for the California Climate Credit and Greenhouse Gas Reduction Fund (GGRF), most critically for AB 617 communities and community air protection programs. The current proposal significantly increases free allowances to industry, effectively shifting billions from household affordability measures to polluting industries. (15d-CEEJTPHAG-132.3)

Comment:

The proposed increase to the cap adjustment factor is counterintuitive to progress toward the 2030 emissions goal. The cap adjustment factor must be lowered to reflect the current generous industry allowance allocations and precipitous allowance market conditions. Compounding the alarming projected impacts of the MDI program, excessive industry allowance allocations have severe implications for the GGRF. This dwindling pot of money has invested billions in dozens of critical programs – clean vehicle access, safe and affordable drinking water, wildfire resiliency, and affordable housing. A failing market mechanism will yield decreased dollars to allocate to these initiatives. Early estimates place the impact of the proposal overall to be $2 billion in foregone revenue each year. 73% of the billions in GGRF investments have been allocated toward California's disadvantaged and low-income households, the "priority populations". This group is hit the hardest by the impacts of climate change and will bear the brunt of the loss of these foregone GGRF dollars. While forgoing direct emissions benefits and durable investments in our climate programs, this proposal provides allowances in excess to the oil and gas industry with no guarantee that fuel prices will go down. Even with a glut of allowances, petroleum market prices will continue to spike suddenly when refinery emergencies or global supply shocks occur. Californians remain vulnerable to the volatility of the petroleum market, and the oppressive market power that this industry continues to wield in our state. While gas prices soar due to international supply shortages, oil companies are raking in record profits. Californians cannot be on the hook for oil industry subsidies that deliver no legitimate price relief all while cutting our state off from billions in critical funding. CARB must ensure that industry allowance allocations are not in excess; the proposed increase to the cap adjustment factor must be walked back. (15d-CEV-178.3)

Comment:

Correct the bloated free allowance allocation by lowering the cap adjustment factor. (15d-Sells-188.3)

Agency response:

No changes were made in response to these comments. The increased CAFs in the Proposed Amendments are necessary to mitigate emissions leakage risk in response to significant near-term economic uncertainty while maintaining the incentive for efficient in-state production. Increased allowance allocation to industrial sectors, including refineries, also supports affordability for consumers by ensuring this Program does not directly result in refinery closures and reduced fuel refiner competition. See Agency Response to comment O-1.1a. Broader concerns about volatility in petroleum markets and refinery profits are outside the scope of this rulemaking.

Regarding GGRF, CARB staff note that 80% of the value of allowance budgets from 2027-2030 under the Proposed Amendments are used to directly benefit Californians either through the GGRF or through the California Climate Credit, and appropriation of GGRF proceeds remains under the purview of the Legislature and Governor. See also Agency Response to comment W-1.3b. Further, the MDI allocation proposal does not reduce the number of State-owned allowances that generate proceeds for the GGRF. See Master Response 4 in the Response to Comments on the Environmental Impact Analysis and Agency Response to comment O-8.38a.

O-5.11 Multiple Comments: CAF adjustment for future rulemaking

We ask CARB to extend leakage protections through at least 2045, rather than 2035, in the rulemaking that follows this one. Capital investment decisions for assets coming online in 2038 or 2040 cannot be evaluated against a regulatory page that ends seven years before the project's first year of operation. Several legislators and stakeholders have made this point in the current record. The post-2035 void is a leakage driver in itself, independent of the values eventually placed in those years.

We want to be clear about what we are not asking. We are not asking CARB to revisit the 15-Day CAF values for 2027 through 2030 in this rulemaking. We support those values as a starting point, and we support adoption of the regulation in May. We are asking CARB to use the next rulemaking and the development of the Scoping Plan update to fill in the post-2030 picture before the absence of that picture begins to influence siting decisions in ways the program cannot easily reverse. (15d-CBC-201.11)

Comment:

At the same time, long-term regulatory certainty is critical to avoid unnecessary market volatility and cost spikes. Without a stable framework, businesses are less able to make forward-looking investments, which can ultimately drive higher compliance costs that are passed on to consumers. I encourage ARB to begin work immediately on the post-2030 regulations to provide greater clarity and stability. (15d-SBWJ-162.2)

Comment:

IETA recognizes CARB's reasons for delaying the final determination of post-2030 Cap Adjustment Factors (CAFs). Still, we note that long-term certainty is vital for both Program and market efficiency. Accordingly, we encourage CARB to release the post-2030 CAFs in an expedited fashion as part of a subsequent rulemaking, with consideration for both environmental integrity and broader macroeconomic trends. We hope CARB maintains its focus on affordability by directing an adequate number of allowances towards EDUs to fund a robust California Climate Credit. (15d-IETA-86.4)

Comment:

The post-2030 regulatory void is the most urgent. The 15-day proposal struck the 2031–2035 CAF values and eliminated Table 9-4 entirely. No specified allocation values exist for industry or utilities beyond December 31, 2030. Capital investment decisions with 10-year horizons cannot be made against a blank regulatory page. California's industrial free allocation ratio sits at 62 percent, the lowest of any major comparable program, against Washington's 94 percent and Quebec's 99 percent. A post-2030 void in this environment does not produce a neutral outcome. It produces the next closure. For these reasons, PSC supports swift conclusion of the current rulemaking, followed quickly by a subsequent rulemaking that addresses post-2030 allowance allocations for industry and utilities. (15d-CPSC-101.2)

Agency Response:

Staff appreciate the support for these amendments and as stated in the 15-day Notice and directed by the Board in Resolution 26-7, CARB will be addressing the post-2030 CAFs (and allocation) in a subsequent rulemaking. The public process will begin by July 1, 2028.

O-6 Cement

O-6.1 Multiple comments: Definition of cement

The proposed amendments provide improved incentives, clearer definitions, and opportunities for emissions-intensive, trade-exposed industries (EITE) to decarbonize, including for the hard-to-decarbonize cement industry. For example, one positive change in support of cement industry decarbonization is that the proposed amendments properly categorize low-carbon cement facilities, revising the definition of cement within the regulations to include Supplementary Cementitious Materials and other materials used in lower carbon cement blends. This definition is more inclusive of the decarbonization levers for the cement sector and now appropriately includes substitution materials that can be used to displace clinker. (45d-NRDC-376.8)

Comment:

Adopt the modified definition of cement, with minor additional modifications. CARB's present definition of cement does not recognize the integration of materials beyond limestone in finished cement, thereby excluding Supplementary Cementitious Materials (SCMs) that can be blended into finished cement as a substitute for clinker. Adopting the ASTM standard definitions proposed by CARB is the right solution. (45d-NCCC-418.7)

Agency response:

No changes were made in response to these comments. Staff appreciate commentors' support for a proposed definition for cement to include all types of cement that meet the speciation standards or demonstrate functional equivalence to conventional cement types, such as portland or blended cements. Regarding the minor additional modifications on the ASTM reference, please see Agency Response to comment O-6.3.

O-6.2 Comment:

CSCME recommends using "portland cement" rather than "Portland cement" as normally used in the industry and the ASTM standards. The corresponding change should be made to the definition of "Portland cement" in the MRR Proposed Amendments. (45d-CSCME-352.19)

Agency response:

Changes were made in response to these comments. "Portland" was replaced by "portland" for the definition of cement.

O-6.3 Multiple Comments: Reference Year

CSCME proposes that CARB modify the definition of "cement" to delete the reference to the year of the ASTM standard (i.e., "ASTM C150 (2022)). ASTM requires standards to be reviewed at least once every 5 years, and many standards are revised on a more frequent basis. (45d-CSCME-352.18)

Comment:

CARB should delete the year of the standard – ie, "ASTM C150 (2022)" Including the year of the ASTM standard will create identical issues as we have presently with an overly limited definition. (45d-NCCC-418.7)

Agency response:

No changes were made in response to these comments as no changes are needed to the reference date of the ASTM standard. CARB references the year of the ASTM standard in the definition because it is widely used in the industry. CARB incorporated the year 2022 in the definition because that is the version of the standard that is currently available. CARB cannot reference materials that are in progress or that are changing. Future updates to the ASTM standard may be incorporated as warranted in future rulemakings.

O-6.4a Multiple comments: Change the treatment of SCMs under the cement allocation

Expand the definition of output for the cement industry to include SCMs. (45d-CSCME-352.6)

Comment:

The proposed regulatory language governing allowance allocation for supplementary cementitious materials (SCMs) appears to unintentionally create a pathway that could undermine the program's statutory objective of minimizing emissions leakage. Because SCM producers may qualify as opt-in covered entities, this structure creates a potential pathway for allowance allocation associated with cement production to be attributed to facilities whose direct emissions do not occur within California. SCM production is not one of the industrial sectors identified as emissions-intensive and trade-exposed under the Cap-and-Invest program and therefore not one of the sectors the program's leakage protections were authorized to support. Allocation associated with SCM use should therefore remain limited to covered cement manufacturing facilities. (45d-CalCIMA-49.1)

Comment:

Refrain from extending industrial allocation to SCM producers. Explore alternative, demand-side mechanisms to increase blended cement adoption downstream in lieu of industrial allowance allocation. (45d-CSCME-352.16)

Comment:

Remove eligibility for SCM producers to receive industrial allowance allocations. CARB's proposed amendments would extend industrial allowance allocation to certain producers of SCMs. CARB's approach is based on the premise that SCMs are the "functional equivalent" of cement when used to produce blended products. NCC and CSCME note that this approach conflicts with the foundational principles of industrial allocation under the Cap-and-Invest program, undermines the incentive that CARB seeks to create by expanding the definition of cement to include SCMs, and increases the risk of leakage in the California cement industry. Under the Cap-and-Invest program, industrial allocation is explicitly justified as a leakage-minimization mechanism for emissions-intensive, trade-exposed sectors. SCM does not meet these criteria. For these reasons, we urge CARB to:

- Decline to extend industrial allocation to SCM producers.
- Maintain the product-based cement benchmark framework within the cement manufacturing sector.
- Explore alternative, demand-side mechanisms to increase blended cement adoption downstream. (45d-NCCC-418.8)

Agency response:

No changes were made in response to these comments except for minor changes in section 95870 Table 8-1 and section 95891 Table 9-1 to clarify that only in-state SCM producers that process minerals extracted in California under NAICS codes 212 (mining except oil and gas) or 327 (nonmetallic mineral product manufacturing) are to be eligible to receive cement allocation if the products were used to finished cement.

Cement is made by blending multiple materials with limestone-based clinker - the most GHG emissions-intensive material in cement and the component that provides binding properties to cement. Currently, cement plants in California typically add gypsum, limestone, and small amounts of other mineral additives to limestone-based clinker to make cement. However, cement can also be made by blending increased amounts of low-carbon alternative materials, such as alternative clinker and supplementary cementitious materials (SCMs). These low-carbon alternative materials help reduce the GHG intensity of cement when they displace limestone-based clinker.

As California transitions to a decarbonized economy, it is important (1) to support increased use of low-carbon materials to make cement, and (2) to treat conventional and low-carbon cements on an equivalent basis when providing leakage protection if a low-carbon cement can be demonstrated to be functionally equivalent to conventional cement. A unique characteristic of cement production is that SCMs can be produced by non-cement manufacturers and blended at cement plants or at concrete batch plants to supplement the cementitious properties of clinker. This can raise questions, such as those posed by the commenters, as to how to appropriately classify this manufacturing activity and product in the context of emissions leakage minimization. CARB disagrees that this approach does not meet the Program’s eligibility criteria for allowance allocation.

As stated in ISOR, AB 32, AB 398, and AB 1207 require CARB to design the Program to meet multiple objectives, including minimizing emissions leakage from California’s industrial sectors while supporting GHG emissions reductions aligned with the State’s climate targets. Aligned with these requirements, the Program’s approach to allowance allocation, as evidenced by the long-standing one-product, one-benchmark principle, is designed to support efficient production in state and the transition to a low-carbon economy. These proposed changes will only apply to in-state SCM producers (industrial facilities that produce a functionally equivalent product) if SCM producers become operative and covered by the Program. To that end, Proposed Amendments revised the definition of “cement” to define the product based on its functional equivalence regardless of

the component materials or where they were blended. SCMs that are incorporated into a material that meets the performance requirements for cement are included as covered product eligible for allocation. This is consistent with the Program's one-product, one-benchmark principle, under which a product unit definition is not differentiated by technology or raw material quality, thus incentivizing production methods with lower GHG emissions.

In terms of the process to finish cement, the Proposed Amendments recognize the output from cement manufacturing as "adjusted clinker and mineral additives produced," as eligible for allocation. If additional SCMs are blended to add cementitious property to the output from cement manufacturing, those SCMs are also eligible for allocation if they were mined and produced in California. Under this approach, in-state SCMss are subject to a common allocation approach.

It is possible to recognize in-state SCM production separately from the cement manufacturing. Under this approach, SCM producers would be subject to their own leakage evaluation and assigned their own benchmark. However, a SCM-specific benchmark would apply to all SCMs made in-state, including those that are shipped to cement plants for blending, which could remove the incentive to produce and use lower-carbon alternative materials for use in cement manufacturing, as the allocation framework would not be able to recognize the connection between SCMs and cement. For this reason, staff did not make the suggested changes.

Staff acknowledge the uniqueness of cement for which multiple components can be produced and added at different stages to finish the product. Board Resolution 26-7 directs the Executive Officer to evaluate the use of SCMs for cement production in state and to propose additional future amendments, as appropriate, to support the use of SCMs to reduce cement GHG emissions to the maximum extent feasible. Staff will continue evaluating mechanisms to support low-carbon cement and leakage protection for the cement sector consistent with the statutory requirements for the Program.

O-6.4b Multiple comments: Change the treatment of SCMs under the cement allocation

CARB proposes to provide industrial allowance allocations to SCM producers for output that is sold directly to concrete plants that mix it with finished cement to produce concrete. In our initial comment letter, CSCME raised two key concerns about the proposed approach. It is fundamentally inconsistent with the purpose of the industrial allowance allocation system as documented across almost two decades of rulemakings, which is to reduce leakage risk. It affirmatively undermines the basic rationale behind and potential impact of updating the definition of cement output, as it disincentivizes

SCM producers from selling their products to cement manufacturers to produce blended cement. The 15-Day Amendments fail to address either of these concerns. CARB's sole revision was to clarify that out-of-state SCM producers are not eligible to receive leakage assistance, which seemed self-evident and was not the crux of CSCME's concerns. (15d-CSCME-174.6)

Comment:

As noted in the initial NCC and CSCME comment letters, the allocation of allowances to producers of supplementary cementitious materials (SCMs) is inconsistent with the established purpose of leakage assistance. Leakage assistance is based on increased costs associated with a mandated carbon price. Entities that are not exposed to material carbon costs are not at risk of leakage and therefore should not receive increasingly scarce industrial allowance allocations that are designed to mitigate such risk.

As proposed, if SCM producers receive their own leakage assistance allocation tied to supplying concrete producers, they have a significantly reduced incentive to sell their product to cement producers. Instead, they would be encouraged to sell directly to concrete plants, capture their own allowance allocation, and leave cement producers without the SCM supply needed to take advantage of the expanded definition of cement output as proposed in the MRR Regulation. The result is that two provisions of the same regulation are at cross-purpose with each other: one creates an incentive for cement producers to blend SCMs, while the other diminishes the supply of SCMs available for that blending. (15d-NCCC-182.3)

Comment:

We further note an inconsistency in the design of the new code language. Section 95891 of the Cap-and-Invest Regulation specifies that output for SCM producers is measured according to “the quantity of SCMs reported by the SCM producer.” However, Table 9-1 specifies that SCM producers are measured according to their output of “Finished Cement” and receive a corresponding benchmark allowance identical to Cement Manufacturers for output of Finished Cement. Critically, SCMs and Finished Cement are not identical products, and they have significant differences in their carbon intensity. (15d-NCCC-182.4)

Agency response:

No changes were made in response to these comments. Please refer to Agency Response O-6.4a regarding the proposed allocation treatment of SCMs. Regarding the differences between SCMs and Finished Cement, the Proposed Amendments, specify that SCMs that are incorporated into a material that meets the performance requirements for cement are included as covered product eligible for allocation and in-state SCM producers are eligible to receive

allowance allocation for the SCMs used to make Finished Cement that are not sent to cement manufacturers. These changes enable both cement manufacturers and in-state SCM producers (if covered by the Program) to receive allowance allocation for the functionally equivalent portion of Finished Cement.

O-6.5 Comment

CSCME requests that CARB make the following technical correction to the reporting of SCMs under MRR Section 95110(d): Annual quantity of SCMs consumed for blending (short tons) that is received from SCM manufacturers that are opt-in or covered entities in the Cap-and-Invest Program, by SCM type (e.g., fly ash, ground granulated blast furnace slag, silica fume), and SCM manufacturer, and whether the SCM manufacturer is an opt-in or covered entity in the Cap-and-Invest Program. Alternatively, in the event that the Proposed Amendments are advanced to the Board without revisions, we urge CARB to ensure that California cement manufacturers have the option to report third-party verified data on SCM use through the MRR system so that CARB may use that data to properly calculate allowance allocations and fully account for associated GHG reductions. (15d-CSCME-174.2)

Agency response:

No changes were made in response to this comment in this rulemaking. The comment refers to proposed changes to the MRR, which is outside of the scope of this rulemaking. See Agency Response to comment J-8 in the MRR FSOR. Please also refer to Agency Response to comment O-6.4a on allocation for SCMs.

O-6.6a Multiple Comments on MRR imported cement requirements for MRR imported cement requirements:

Adopt a components-based default methodology that decomposes the GHG footprint of imported cement into process emissions, kiln combustion emissions, non-kiln combustion emissions, electricity-related emissions, and transportation-related emissions, with separate default factors for each component. This approach produces more useful data, creates a natural pathway for importers to provide actual data, and aligns the reporting framework with the eventual implementation of a BCA.

- Include transportation-related emissions in the reporting scope. Require importers to report the port of origin and mode of transportation, and use publicly available data to calculate the transportation component of each import shipment's GHG footprint.
- Establish a data quality assurance mechanism for facility-specific CEI reporting that, at a minimum, requires supporting documentation and attestation and that

provides CARB with the authority to review and challenge reported values. Over time, develop graduated data quality tiers that provide importers with incentives to submit higher-quality data.

- Clarify the definition of "importer of cement" to address ambiguities involving intermediate ownership transfers, consignment arrangements, and downstream purchasers who may not be well-positioned to report upstream manufacturing data.
- Explicitly link the reporting framework to a BCA implementation timeline. Make clear in the regulatory record that import reporting is a precursor to a compliance-based BCA, and commit to a general timeline for transitioning from reporting to compliance obligations.

CSCME views the proposed import reporting requirements as an important foundation, but a foundation is only as valuable as what is built upon it. The reporting framework should be designed not merely to collect data for its own sake, but to produce the specific types of data, in the specific formats, at the level of quality needed to support the implementation of a credible and effective incremental BCA. (45d-CSCME-352.17)

Comment:

Adopt a components-based approach to apply reporting requirements on cement importers, rather than a single default value of carbon-intensity. CARB's proposal to apply reporting requirements on the carbon-intensity of imported cement is positive development toward leveling the playing field. However, CARB's proposal to use a single Cement GHG Emissions Intensity of 0.758 MT CO_2e/short ton of cement, in the absence of facility-specific data, is problematic. (45d-NCCC-418.2)

Agency response:

No changes were made in response to these comments in this rulemaking. These comments refer to proposed changes to the MRR, which is outside of the scope of this rulemaking. See Agency Response to comment J-6 in the MRR FSOR.

O-6.6b Multiple Comments on MRR imported cement requirements for MRR imported cement requirements:

MRR Section 95126(b) requires importers to calculate and report the GHG emissions associated with imported cement based on a manufacturing facility's annual average GHG intensity of cement produced at that facility.

This approach is fundamentally flawed in that it effectively assumes that the GHG intensity of the cement that a plant exports to California is similar to the GHG intensity of all of the cement that it produces over the course of a year. This assumption is unlikely to hold for plants that serve different markets with very different building standards. For

instance, the same plant might export a high-quality cement with a 90-95% clinker ratio (i.e., Ordinary Portland Cement) to the California market while also producing a lower-quality cement with a 75% clinker ratio for a different market that has much lower building standards than California. In that instance, averaging across the plant's full product mix will substantially and systematically understate the GHG intensity of the higher-clinker product imported into the state.

Fortunately, this issue is easily corrected by slightly shifting the basis of reporting. Specifically, CARB should require importers to report the plant's annual GHG intensity per unit of clinker (not cement) produced and then adjusting it to account for the actual clinker content of the imported product, which should be readily known by the importer. This approach is more accurate, more consistent with how California producers report their own emissions under the MRR, and better suited to capturing the actual GHG intensity of products entering the California market.

With those considerations in mind, CSCME recommends that CARB amend the equation in MRR Section 95126(b)(1) to include a term for the clinker ratio of the imported product and the equation in 95126(b)(2) to measure a plant's annual GHG intensity on a clinker basis. (15d-CSCME-174.8)

Comment:

For importers who do not provide facility-specific data, CARB proposes to apply a default factor of 0.758 MT CO2 per short ton ("ST") of cement. This approach is problematic for several reasons.

As a threshold matter, there are several reasons to conclude that the proposed default factor is likely to be substantially lower than the GHG intensity of cement imported into California, which would only disincentivize importers from collecting and reporting actual data. For instance, the European Union Emissions Trading System ("EU ETS"), which has invested considerable analytical effort in establishing defensible default factors to support the implementation of its Carbon Border Adjustment Mechanism ("CBAM") for cement, recently published default factors by country — all of which are considerably higher than the default factor proposed by CARB. In addition, CARB's proposed default is based on data from the Global Cement and Concrete Association ("GCCA") database. That data does not align with CARB's emissions calculation methodology, is voluntarily reported by GCCA members, is not independently verified, and is not necessarily representative of global production as a whole. The dataset covers a small minority of global clinker production, and that coverage is heavily skewed toward large, sophisticated, Western producers that have the systems and incentives to report.19 Accordingly, using GCCA data as the basis for default values, especially without extensive testing for self-selection bias and representativeness, is an analytically unsound approach that undermines the credibility of the reporting framework.

Even if the GCCA data accurately reflected average global production, that average is unlikely to be representative of the cement imported into California. As documented in CSCME's initial comment letter, the vast majority of cement imported into California over the past decade originated in Vietnam and China, which are not included in the GCCA data.20 The inability to scope the GCCA data to align with the most likely sources of imports into California only further undermines the credibility of the proposed default factor and the reporting framework in general.

Ultimately, however, there is no need to rely on voluntarily reported, unverified, and under-scoped data to establish a credible default GHG intensity factor. As outlined in CSCME's initial comment letter, a components-based approach that is grounded in physical chemistry, established engineering parameters, and publicly available data can produce a more reliable and defensible default factor without significantly expanding reporting requirements. (15d-CSCME-174.9)

Comment:

CARB's proposal to apply reporting requirements on the carbon-intensity of imported cement is positive development toward leveling the playing field.

However, CARB's proposal to use a single Cement GHG Emissions Intensity of 0.758 MT CO_2e/short ton of cement, in the absence of facility-specific data, is problematic. (15-Day Amendments to MRR Regulation, Appendix A-1, pages 198-201)

It is unclear how this methodology is derived, and it ignores a components-based approach accounting for each significant factor of cement production. CARB has this data available via CSCME's current and prior submissions, and as documented in CARB's Draft SB 596 Net-Zero Cement Strategy published in 2025. (15d-NCCC-182.5)

Agency response:

No changes were made in response to these comments in this rulemaking. These comments refer to proposed changes to the MRR, which is outside of the scope of this rulemaking. See Agency Response to comment J-6 in the MRR FSOR.

O-6.7 Comment:

CSCME requests that CARB revise Section 95126 to require importers to provide country or U.S. state where the cement or clinker was produced. This is basic information that is readily available to importers and would enhance the scope of data available to CARB in developing its level the playing field measures. For example, CARB could revise Section 95126(c)(4) as follows: (4) The cement importer must report the country or U.S. state of cement or clinker production. If known, the cement importer

must report the name and address of the facility where the imported cement or clinker was produced. (15d-CSCME-174.10)

Agency response:

No changes were made in response to this comment in this rulemaking. It refers to proposed changes to the MRR, which is outside of the scope of this rulemaking. See Agency Response to comment J-6 in the MRR FSOR.

O-6.8 Comment:

CSCME requests that CARB clarify the definition of “importer of cement” or “cement importer” under MRR Section 95102(a). In the 15-Day Proposed Amendments, CARB refines the definition and incorporates language to ensure that all entities that are majority owned or controlled are aggregated for purposes of assessing whether reporting obligations apply. CSCME recommends the following: Move the language regarding aggregate ownership or control to the end of the definition to clarify that all entities are subject to the aggregation provisions, whether defined as the importer of record under federal customs law or whether defined based on being the first entity that owns and receives the imported cement or clinker; and revise the language applicable to instances where the terminal owner or operator does not own the imported cement or where the imported cement is not subject to federal customs law. This proposed change will ensure that importers of cement that is sourced from production in other U.S. states or that is diverted to the California market from ports of entry in U.S. states outside California are covered under the definition. (15d-CSCME-174.7)

Agency response:

No changes were made in response to this comment in this rulemaking. This comment refers to proposed changes to the MRR, which is outside of the scope of this rulemaking. See Agency Response to comment J-9 in the MRR FSOR.

O-6.9 Comment:

CARB’s proposal not to adjust the allocation of free allowances until 2035 casts concerns about whether the cement industry will meet its emission reduction targets in SB 596... Absent further regulation, and accounting for the step-down in allocations in 2032, preliminary estimates indicate the cement industry would likely still need to reduce emissions by at least 5 percent in order to meet the SB 596 2035 target and is unlikely to meet the 2045 net-zero target. CARB should change the proposed amendments to include a stronger price signal for the cement industry or otherwise commit to a supplemental regulation on long-term EITE leakage solutions as soon as possible. CARB should modify the proposed amendments so that cement allowance allocation covers 60% of emissions by 2035, and aligns cement allowances with net-zero by 2045, in line with SB 596. (45d-NRDC-376.15)

Agency response:

No changes were made in response to this comment. SB 596 (HSC § 38562) requires achieving net-zero emissions for cement used in California by 2045 and 40% below the 2019 emissions levels by 2035. In recognition of the emissions leakage risk faced by California manufacturing sectors including cement, global energy disruptions, increased Program stringency to an 11% overall annual cap decline through 2030, and slower pace of adoption for carbon pricing by other jurisdictions than anticipated when the first regulation was adopted in 2011, the alternate Cap Adjustment Factor was increased through 2030 to provide additional emissions leakage protection relative to the 45-day proposal while maintaining the annual cap declines. In addition, the proposed Manufacturing Decarbonization Incentive (MDI) allocation was expanded to include additional project types such as ones targeted to reduce process emissions and CCUS, recognizing that cement manufacturing is associated with high level of process emissions to provide targeted support for cement facility decarbonization. Also, proposed definition of cement includes low-carbon materials such as supplementary cementitious materials if it meets industry standard to incentivize the use of low-carbon alternatives to make cement. Moreover, CARB is not setting CAFs post-2030 but retains emissions caps through 2045 to send long-term market signal.

Post-2030 CAFS will be considered as part of a future rulemaking, which provides time to continue to work through stakeholder concerns until economic circumstances stabilize and to ensure alignment with the 2035 SB 596 GHG targets. CARB is mindful that Cap-and-Invest and SB 596 have different scopes and GHG emissions accounting frameworks. The Proposed Amendments are not conflict with the SB 596 goals – rather these changes help support and facilitate decarbonization of the cement sector.

O-7 Direct Allocation for Purchased Electricity

O-7.1a Multiple Comments: Direct Allocation Transparency

CMTA requests that CARB provide a clear and transparent methodology for the proposed reallocation of allowance value from the CPUC to CARB.

As currently proposed, the realignment lacks sufficient detail for affected facilities to determine whether the transition preserves the economic value they receive under the existing CPUC credit structure. Without a detailed explanation of how CPUC credit value and CARB allowance value will be reconciled, EITE facilities cannot accurately assess their future compliance costs or make informed capital planning decisions. We respectfully request that CARB publish a comprehensive methodology describing:

How historical CPUC credit value is calculated; How equivalent value will be reflected in CARB-administered allocations; and How affected entities will be held economically neutral through the transition. (45d-CMTA-337.4)

Comment:

According to the ISOR, CARB intends the transition from the prior bill-credit framework administered by the CPUC to CARB's direct issuance of annual allowances under the Program to be value-neutral for affected sectors. However, stakeholders currently lack the ability to independently verify this outcome.

… CLECA therefore respectfully requests that CARB document the analytical approach used to evaluate value neutrality between the CPUC administered framework and the proposed allocation methodology and confirm that no EITE sector experiences a reduction in effective leakage protection as a result of the administrative transition.

Finally, for non-covered entities eligible to opt in to receive indirect emissions credits, the ISOR proposed to retain substantially the same process of distributing credits through a CPUC process and administered through the Investor-Owned Utilities (IOUs). CLECA supports this approach and requests that CARB and the CPUC ensure that the appropriate allowances are transferred to the IOUs. This approach is important for supporting EITE facilities that are primarily exposed to carbon costs embedded in electricity prices, as mitigating these costs is essential for maintaining their competitiveness in California.

… CARB's proposed amendments would also place responsibility for both direct and indirect industrial allocation under a unified regulatory framework. This provides the Board with an important opportunity to evaluate industrial compliance cost exposure holistically across emissions sources.

… If direct and indirect allocation are evaluated independently, facilities pursuing electrification may experience a reduction in total leakage protection as emissions shift from direct to indirect sources. Without a coordinated evaluation of these two allocation streams, the net effect could be an increase in total compliance exposure despite the facility undertaking emissions reduction investments.

Such an outcome would be inconsistent with the Program's objective of encouraging industrial decarbonization while minimizing emissions leakage. Electrification and other electricity intensive decarbonization technologies should not inadvertently reduce the level of leakage protection available to facilities that are actively lowering their emissions. (45d-CLECA-417.5)

Comment:

Ensure the shift of indirect emissions allowances from CPUC to CARB for Energy-Intensive Trade-Exposed (EITE) sectors is clear and transparent.

Similar to comments provided by the California Large Energy Consumers Association (CLECA), we urge CARB to provide transparency with the transition of indirect emissions allowances from the California Public Utilities Commission (CPUC) to CARB. Presently, the beneficiaries of the indirect emissions allowances (such as NCC) receive a rebate directly from utilities, but without the full detail of how the value is calculated. The proposal to shift the value from CPUC (in the form of a rebate on utility bills) to CARB (in the form of allowances of equivalent value) must be transparent to the beneficiaries. (45d-NCCC-418.9)

Agency Response:

No changes were made in response to these comments. CARB is committed to ensuring transparency in how industrial allocation is calculated while maintaining confidential business information. All benchmarks and required calculation factors are clearly described in the Proposed Amendments. Requests for additional information on CPUC's past calculations can be directed to the CPUC, which was the agency responsible for those calculations. Consistent with existing practice, after each annual allocation, each entity may annually request from CARB staff an allowance allocation disclosure that shows how the published methodologies were used to calculate their allocation using their verified data. Once the Proposed Amendments are adopted, allocation disclosures will include the calculations for the direct allocation for purchased electricity allocation, including any negative true-up. CARB will only provide this information directly to each covered entity in order to protect confidential business information.

CARB included the methodology to allocate both product-based and energy-based methodologies for electricity purchases in section 95891 of the Proposed Amendments. As described in the ISOR, the proposed method for calculating electricity purchases allocation closely follows the existing CPUC method, which mirrors the CARB approach for existing industrial allocation. For purchased electricity allocation, CARB will use the same electricity benchmarks used by CPUC for the California Industry Assistance Credits. CARB developed a single statewide average California electricity grid emissions factor to reflect the embedded carbon costs in electricity purchases.

CPUC Decision 21-08-026 specifies that CARB and CPUC will work during the two-year transition period after CARB starts providing initial electricity purchases allocation to calculate the true-up portion of the California Industry Assistance Credit. If the true-up portion for a facility is positive during this two-year period,

CPUC will direct IOUs to provide a credit. If the true-up portion is negative during this two-year period, CARB will deduct this value from the initial electricity purchases allocation, using the same allowance value the CPUC used for that vintage year. Appendix A of CPUC Decision 21-08-026 specifies processes during the two years needed to transition from CPUC to CARB the crediting to minimize leakage risk in electricity purchases.

O-7.1b Multiple Comments: Direct Allocation Transparency

Allocation Realignment from CPUC to CARB The draft amendments propose to transfer the annual Cap-and-Invest electricity credit currently delivered to eligible facilities through CPUC-administered utility bill credits to CARB-administered annual allowance allocations. As currently proposed, the amendment lacks sufficient detail for affected facilities to determine whether the transition preserves the economic value they receive under the existing CPUC credit structure. GPI requests that CARB provide a detailed methodology explaining how CPUC credit value and CARB allowance value will be reconciled. Without this clarity, EITE facilities cannot accurately assess their compliance costs or make capital planning decisions. (15d-GPI-79.4)

Comment:

The following items can be addressed through FSOR responses, administrative action, or a subsequent rulemaking, without delaying adoption: Publish in the FSOR the electricity efficiency benchmarks previously used by the CPUC to calculate California Industry Assistance Credits, confirm consistency with proposed Table 9-1 values, and explain or correct any differences before budget year 2027 allocation is calculated. (15d-CLECA-112.2)

Comment:

CMTA remains concerned with the proposal to transfer the annual Cap-and-Invest electricity credit currently delivered to eligible facilities through CPUC-administered utility bill credits to CARB-administered annual allowance allocations.

As currently proposed, the amendment lacks sufficient detail for affected facilities to determine whether the transition preserves the economic value they receive under the existing CPUC credit structure.

CMTA respectfully requests that CARB publish a clear and transparent methodology explaining:

- How existing CPUC credit value will be translated into CARB allowance allocations;
- How fluctuations in allowance market prices will be accounted for;

- Whether facilities will receive equivalent annual value under the revised structure;
- How allocation amounts will be determined across sectors and facilities; and
- How regulated entities can accurately forecast future compliance costs under the new system.

Without this clarity, EITE facilities cannot effectively assess compliance exposure or make informed capital planning decisions. (15d-CMTA-204.3)

Agency Response:

No changes were made in response to these comments. Please refer to the Agency Response to comment O-7.1a.

O-7.2a Multiple Comments: Support for Direct Allocation for Purchased Electricity

Air Products supports the new approach to direct allocation of electricity benchmark units to emission-intense, trade-exposed (EITE) facilities. This ensures consistent benchmarking for electricity purchases from both publicly-owned (POU) and investor-owned utilities (IOU) – and without the administrative complexity and less transparent California Public Utility Commission process for IOU allocation to EITE facilities. (45s-AP-351.4)

Comment:

Support the transfer of indirect electricity allocation to CARB. The consolidation of all industrial allocation through a single agency is a logical simplification that ensures consistent leakage protection across all covered facilities. (45d-CSCME-352.8)

Comment:

As indicated in our previous comment letter submitted in response to the Joint California-Québec C&I amendments Workshop conducted on June 14, 20238, Phillips 66 is supportive of CARB directly allocating allowances to EITE industrial facilities to address carbon costs associated with purchased electricity. (45d-P66C-416.7)

Agency Response:

No changes were made in response to these comments. Staff appreciate the support for the Proposed Amendments.

O-7.2b Multiple Comments: Support for Direct Allocation for Purchased Electricity

We continue to support… the direct allocation of electricity benchmark units to emission-intense, trade-exposed (EITE) facilities as reflected in the 15-day package amendments. (15d-AP-83.9)

Comment:

PSG strongly supports the Proposed Amendments' transfer of responsibility for indirect electricity allocation from the CPUC to CARB. This transfer — completing a process that the Proposed Amendments describe as necessary to administer leakage protection for purchased electricity in a unified framework — is both conceptually correct and operationally important. Under the prior CPUC-administered framework, indirect emissions assistance was allocated through a separate process not integrated with CARB's direct emissions allocation. This created a fragmented compliance picture in which leakage risk from indirect emissions was assessed and mitigated by a separate regulatory body with different mandates, different data, and a different analytical framework than that applied to direct emissions. The consolidation of direct and indirect allocation under CARB creates a unified, whole-facility framework for the first time. CARB will now be able to evaluate each covered entity's total compliance exposure — the sum of its direct and indirect costs — and assess leakage risk holistically. PSG urges the Board to take full advantage of this new capability as it evaluates the recommendations that follow. (15d-PSG-107.1)

Agency Response:

No changes were made in response to these comments. Staff appreciate the support for the Proposed Amendments

O-7.3 Comment:

PSG's Mojave Micro Mill is designed to be a fully electrified facility. Its primary steelmaking process involves no direct fossil fuel combustion in the furnace, and all other fossil fuel consumers typical of modern EAF steelmaking — including rolling mill reheat furnaces and ladle heaters — have been electrified. This design choice was made deliberately, as a matter of both environmental commitment and long-term operational strategy. But electrification does not eliminate compliance exposure under the Program — it transforms it. A facility that transitions from direct natural gas combustion to electricity shifts its compliance exposure from direct to indirect emissions and compliance cost. If the Program's leakage mitigation mechanisms effectively protect against direct emissions leakage but address indirect emissions through a separate, less comprehensive framework, then electrification imposes a new competitive penalty rather than delivering a regulatory reward.

California's electricity rates embed multiple layers of carbon and related policy costs: the direct cost of carbon allowances borne by generators and bid into wholesale markets; RPS compliance costs; renewable and storage procurement obligations; and various transmission and distribution charges reflecting the ongoing transformation of the state's energy system. Collectively, these embedded costs mean that electricity purchased in California for industrial use is materially more expensive than electricity available to

competitors in neighboring states and countries. For an EAF steelmaker, this cost differential is one of the most significant drivers of competitive position.

With the transfer of indirect electricity allocation to CARB, PSG urges the Board to ensure that the indirect emissions benchmark and electricity allocation methodology provide meaningful and durable protection against the leakage risk associated with California's electricity cost premium. Indirect emissions assistance must be calibrated to reflect the actual compliance cost embedded in California electricity rates and the competitive pressure facing both existing electrified facilities and those looking to invest in electrification. (15d-PSG-107.2)

Agency Response:

No changes were made in response to this comment. The California Public Utilities Commission is responsible for rate setting for investor-owned electric utilities. As such, industrial electricity rate reform is outside the scope of this rulemaking and CARB's authority. However, CARB continues to coordinate closely with the CPUC on issues related to electricity sector decarbonization including electricity rate structures needed to support the industrial sector.

Regarding allowance allocation for Program compliance costs imparted in electricity purchases, see response to comment O-7.1a.

O-8 Manufacturing Decarbonization Incentive Allocation

O-8.1a Multiple Comments: Support for Initial MDI Allocation Proposal

An appropriately designed manufacturing decarbonization incentive can also assist industries through this transition and the GUG supports continued collaboration between the targeted industries and CARB to finalize an effective incentive. (45d-GUG-426.2)

Comment:

BAC supports the Manufacturing Decarbonization Incentive Allocation designed to reduce emissions from the manufacturing and industrial sectors and to prevent emissions leakage. BAC agrees with the explanation in the ISOR that "Decarbonizing manufacturers depends on displacing fossil fuel use with a mix of electrification, solar thermal heat, biomethane, low- or zero-carbon hydrogen, and other low-carbon fuels to provide energy for heat and reduce combustion emissions and reduction of process emissions through alternative materials and sequestration." BAC supports the use of allowances and other incentives to decarbonize manufacturing and other hard-to-electrify sectors while minimizing leakage. BAC also agrees with the ISOR that this is consistent with the Board's 2023 Resolution that recognized the need for multiple, long term markets for biomethane, including for use in hard-to-electrify sectors. As that

Resolution stated: “the Board recognizes that the successful implementation of the food waste diversion requirements and methane emissions reductions mandated by SB 1383 are critical to the State’s climate goals. The Board further recognizes that multiple reliable uses for non-fossil biomethane will be needed for successful implementation.” (45d-BAC-349.1)

Comment:

We strongly support CARB’s inclusion of provisions for a manufacturing decarbonization incentive allocation in §95890 (g) to target support for hard to decarbonize manufacturing facilities and the additional leakage protection that such an approach can provide. This proposal is similar in concept to what we had proposed in prior comments to the workshops CARB during informal rulemaking over the last few years, and we appreciate that hydrogen is proposed as an eligible technology for this incentive. (45d-AP-351.8)

Comment:

We strongly support the proposed amendments to add a manufacturing decarbonization incentive allocation to the program, and specifically support inclusion of biomethane as an eligible technology. As identified in the ISOR, the cost to decarbonize many industrial facilities remains higher than allowance prices under the program. An additional allocation to support industrial decarbonization will help develop and deploy strategies needed to decarbonize these sectors, including biomethane projects, become economically viable and be deployed more rapidly to support California’s environmental goals. (45d-AA-364.5)

Comment:

The proposed MDI is structured as a mechanism that allows certain industrial facilities to receive additional allowances through a modification of the Cap Adjustment Factor, provided that the value associated with those additional allowances is used to support qualifying emissions-reduction investments at the facility. This approach is conceptually consistent with the program’s broader objective of reducing leakage risk while encouraging modernization in emissions-intensive sectors. (45d-CCoC-374.9)

Comment:

Another positive addition within the amendments is the addition of the Manufacturing Decarbonization Incentive Allocation (Incentive Allocation). The Incentive Allocation will help offset the cost of decarbonized production in California, sending a strong signal to encourage instate industrial decarbonization investments – during an especially critical moment as federal incentives are repealed. (45d-NRDC-376.9)

Comment:

The proposed Manufacturing Decarbonization Incentive Allocation similarly reflects creative thinking on the part of CARB. Allowance allocation to industrial entities has been the primary method of mitigating leakage risk since the beginning of the cap-and-trade program. The proposed additional allocation to manufacturers is, according to CARB, meant to "incentivize a set of GHG emissions reduction strategies that can achieve GHG emissions reduction at facilities thereby decreasing compliance costs and reducing a facility's emissions leakage risk." Refocusing allowance allocation to support decarbonization projects, in addition to its ongoing function to reduce compliance costs for industrial entities, reflects innovative program design on the part of CARB. (45d-AMIrwin-435.4)

Comment:

Support for Thermal Energy Storage Recognition: Rondo is very pleased that CARB has recognized the value of thermal energy storage in decarbonizing the industrial sector through the proposed Manufacturing Decarbonization Incentive Allocation. This recognition is timely and well-grounded. Given that California industry burns more natural gas for heat than the state's entire electricity sector, prioritizing thermal decarbonization is essential to meeting California's 2030 and 2045 goals. (45d-RE-375.1)

> **Agency Response:**
> No changes were made in response to these comments. Staff appreciate the support for the MDI Allowance Allocation in the Proposed Amendments.

O-8.1b Multiple Comments: Support for 15-day Amendments regarding MDI Allocation

We support the Manufacturing Decarbonization Incentive as a structural addition to Cap-and-Invest. The MDI does two things at once that the allowance price alone cannot do at current and projected levels: it directs incentive value toward on-site decarbonization investments at trade-exposed industrial facilities, and it provides leakage protection during the period in which those investments are being financed and built. Decarbonizing in place is the right policy frame. It keeps emissions reductions and the associated economic activity in California rather than exporting both, and it preserves the in-state industrial capacity needed to support the broader clean energy transition. The 15-day modifications meaningfully improve the program's ability to do that work. The Build Up California Reserve preserves the environmental integrity of the inventory adjustment while creating a durable pool of incentive value through 2035. The 0.8 cap adjustment factor modifier provides participants with a predictable allocation increment for compliance planning. The recognition of carbon capture and sequestration

as an eligible project type aligns the MDI with the realistic technology set for industrial decarbonization in California. Hydrogen procurement is one of the load-bearing eligible project types, particularly for sectors where electrification is technically constrained or prohibitively expensive, and for process applications where hydrogen functions as a feedstock or reductant rather than a fuel. The 2022 Scoping Plan projects that California will need to scale renewable hydrogen production roughly 1,700 times by 2045 to meet the AB 1279 carbon-neutrality target. The MDI is the principal mechanism within Cap-and-Invest by which covered manufacturing facilities can participate in that scaling on the demand side. (15d-CHC-152.1)

Comment:

The Manufacturing Decarbonization Incentive (MDI) put forward in the proposed rule acknowledges that price signals alone may not be sufficient to drive investment in deep decarbonization of hard-to-abate sectors like heavy industry. Whereas the free allowances provided to industry may enable facilities to remain in the State, the MDI offers a pathway for them to continue operating with reduced emissions. Industries such as cement, refining, and steel face structural challenges like high capital costs as well as long asset lifetimes that can deter major investments to modernize facilities. The MDI addresses these barriers by offering targeted compliance instruments contingent on verified decarbonization investments in solutions like fuel switching, electrification, efficiency, carbon capture, and more. While the MDI may affect quantity and disbursement of program revenues, it should be viewed as a strategic investment in the program's ultimate goals. By directing program and private sector resources toward industrial transformation, the MDI will enable long-term emissions reductions and statewide economic resilience. Effective and durable climate results will not be achieved solely with policies that penalize emissions—especially in hard to abate sectors. Truly effective policy needs to catalyze investment, innovation, and results that can be replicated in multiple jurisdictions. The approach taken through the MDI does just that, and reinforces California's role as a leader in ambitious and innovative climate policy. (15d-TW-184.4)

Comment:

ABC supports the proposed amendments to add a manufacturing decarbonization incentive allocation to the program and specifically supports inclusion of biomethane as an eligible technology. As identified in the ISOR, the cost to decarbonize many industrial facilities remains higher than allowance prices under the program. An additional allocation to support industrial decarbonization will help develop and deploy strategies needed to decarbonize these sectors, including biomethane projects, become economically viable and be deployed more rapidly to support California’s environmental goals. (15d-ABC-95.1)

Comment:

Dairy Cares generally supports the proposed Manufacturing Decarbonization Incentive. While the intent is clearly positive, actual implementation details will determine its effectiveness in decarbonizing dairy and other food processing and production facilities in the state. Dairy Cares looks forward to working with California Air Resources Board ("CARB") staff on implementation details. (15d-DC-120.2)

Comment:

In the April 2026 amendments, mineral wool manufacturing is treated as an eligible sector for enhanced industry assistance through the new Manufacturing Decarbonization Incentive ("MDI"). Mineral wool facilities are eligible for additional allowance locations if they invest in verified emission-reduction projects. NAIMA supports this part of the amendments in that it effectively increases the number of no-cost allowances a facility receives for the 2028-2035 budget years to offset the costs of decarbonization. NAIMA supports those provisions that preserve and protect assistance factors and allowances that prevent leakage. (15d-NAIMA-90.1)

Comment:

CH2BA appreciates CARB's leadership in stimulating market frameworks for reducing GHG emissions. Given recent policy and international events, we believe that including low-carbon hydrogen in the manufacturing decarbonization incentive is wise for economic development, security and climate objectives. (15d-CHBA-7.1)

Comment:

Neste also appreciates that CARB is now proposing that biorefineries are now eligible for the Manufacturing Decarbonization Incentive Allocation. This should help drive investment in low-carbon technologies at facilities such as our Martinez JV, while also still achieving overall GHG reductions within the C&I program. (15d-N-77.2)

Comment:

Phillips 66 also supports CARB's proposed Manufacturing Decarbonization Incentive, including the proposed expansion of potential value and the extension of eligibility to SAF production facilities, and views this as a critical long-term signal for capital-intensive decarbonization projects.

… In §95891(g), CARB proposes a novel and noteworthy concept of a CAF modifier to be applied to allowance allocation for eligible facilities as a manufacturing decarbonization incentive from budget year 2028 through 2035. By providing this incentive over multiple compliance periods, CARB is sending a strong signal to in-state

EITE facilities to pursue technologically feasible decarbonization projects that may not yet be economically viable under the current market conditions. Phillips 66 appreciates CARB's leadership in developing this innovative incentive to advance manufacturing decarbonization and supports the inclusion of SAF production facilities among the eligible participants. (15d-P66-78.2)

Comment:

We appreciate amendments in the 15-Day Changes, which would expand eligibility under the MDI program to CCUS and to other sectors, including the refining sector. MDI is an important new element of the program, which will support accelerated action to decarbonize hard-to-abate sectors and facilities covered under the program. We appreciate staff's responsiveness to our comments and those from other stakeholders on this issue, and strongly support this proposed change...Thank you for your leadership in extending the Cap-and-Invest program and proposing to support decarbonization innovation through a technology neutral MDI program. We appreciate staff's ongoing work with stakeholders and responsiveness to our comments, and we support adoption of the 15-Day changes at the May 28, 2026 Board hearing (15d-BP-130.2)

Comment:

CHBC supports the manufacturing decarbonization incentive program and inclusion of hydrogen production. (15d-CHBC-149.1)

Comment:

In CalChamber's prior comments on the 45-Day Amendments, we raised significant concerns that the proposed Manufacturing Decarbonization Incentive (MDI), as initially structured, was too narrow, too uncertain, and too difficult to access to serve as a meaningful compliance and investment tool for many covered entities. As we noted in those comments, the original proposal risked creating an incentive that was difficult to access and unlikely to support the kinds of capital-intensive decarbonization investments needed in the industrial sector. The 15-Day Amendments meaningfully strengthen the MDI with revisions targeted at creating a mechanism more capable of supporting real investment decisions. These improvements enhance the MDI's potential to function as a practical decarbonization tool rather than a largely theoretical compliance option. CalChamber appreciates those changes and believes they materially increase the usefulness of the mechanism. (15d-CCoC-158.3)

Comment:

I appreciate that the April modified regulations included targeted improvements such as the expanded Manufacturing Decarbonization Incentive and additional compliance

support for energy-intensive sectors. These will help reduce leakage and stem further job losses. (15d-SBWJ-162.3)

Comment:

Proposed Changes to and Impacts of the Manufacturing Decarbonization Incentive

CCEEB appreciates CARB's proposed changes to the Manufacturing Decarbonization Incentive (MDI) and support providing regulated entities additional clarity in the implementation of the proposal, including:

• Publishing the latest available allowance budget for each eligible category prior to each application cycle.

• Establishing transparent prioritization and proration criteria if applications exceed available allowances.

• Providing clear guidance materials and sufficient lead-time for applicants.

• Allowing existing qualified projects to be eligible for consideration.

Furthermore, CCEEB supports the fundamental premise of the MDI which incentivizes in-state investment in decarbonization without impacting the environmental integrity of the program. The MDI proposes to use a set number of current vintage allowances as incentive allowances in the new Build Up California Reserve Account to drive long-term investments in equipment, fuel switching, renewable energy generation, carbon capture and avoided process emissions. While initial CCEEB member feedback indicates the economic benefit of the MDI – given the cost-effectiveness of these projects - may only impact decision-making at the margins, any leakage prevention should result in lower global carbon emissions and durable in-state emission reductions occurring earlier than they otherwise would have. (15d-CCEEB-165.4)

Comment:

The GHC strongly supports the MDI because it will serve as a necessary tool for accelerating early-stage industrial decarbonization in hard-to-abate sectors. As proposed, the MDI structure ties the allocation of additional allowances to verified long-term decarbonization investments, effectively lowering upfront capital barriers for technologies like clean hydrogen. In a system where regulated industries face global competition, this type of incentive should prevent companies potentially choosing to shift production and in turn emissions out of state (e.g., leakage). The GHC believes the MDI represents a meaningful and reasonable approach to prevent leakage while balancing the economic cost drivers facing each of these manufacturing operations.

From a market standpoint, the MDI complements the broader Cap-and-Invest framework by channeling capital into scalable clean energy infrastructure. Auction

proceeds have already funded significant investments in hydrogen fueling and related decarbonization programs, demonstrating how the system can both price carbon and reinvest in solutions. The MDI expands this logic by directly incentivizing industrial actors to deploy those solutions at scale. In doing so, it aligns private investment with state climate targets while supporting energy reliability and fuel supply stability through the transition. For GHC, the MDI is a needed targeted market signal that accelerates deployment of low carbon hydrogen and other clean fuels within California's existing industrial backbone. (15d-GHC-191.1)

Comment:

GHC applauds the Board for allowing low carbon hydrogen purchases to be counted towards allowances in the 15-Day Amendments and clarifying that the first option can be met by demonstrating compliance with the requirements of the 45V tax credit. One of the best ways to reduce emissions is to incentivize a cleaner alternative, and low carbon hydrogen can substantially reduce emissions in many of these hard-to-abate sectors. GHC supports the proposed amendment, including "...or meets the eligibility criteria for..." into the first option.1 Before this inclusion, those seeking the allowance would have needed to receive the 45V tax credit, instead of merely meeting the requirements. Therefore, the focus would have been on receiving the tax credit versus whether the process inherent in production was truly producing renewable hydrogen.

The One Big Beautiful Bill Act (OBBBA) demonstrates the need for CARB's clarifying amendment to the first option for low carbon hydrogen purchasing. Last year, the OBBBA reduced the timeline for many renewable energy tax credits and highlighted how changes in the economy or federal policy can place funding at risk of being eliminated. 2 The OBBBA terminates the 45V credit for facilities that begin construction after December 31, 2027. This is a significant acceleration from the original Inflation Reduction Act timeline, which began phasing out in 2033. It also means that any facility that met the parameters of 45V after 2027 would be prevented from counting their renewable hydrogen as low carbon under option one as proposed in the 45-day amendments.3 For California to meet its own ambitious climate goals, it should be wary of attaching eligibility requirements to federal policies and programs that are shortening the window for federal renewable energy tax credits. In this regard, Board staff have struck a reasonable balance whereas the amendment prevents an unintended consequence while still maintaining the underlying goal inherent in the original provision. GHC thanks the Board for this amendment and supports its inclusion into the final program. (15d-GHC-191.2)

Comment:

One concern raised by certain parties is that the MDI could undermine environmental integrity by making additional allowances available through the program for qualifying

decarbonization investments. They argue this weakens the emissions constraint intended by the program. CalChamber believes those concerns overlook an important distinction central to evaluating the mechanism. An allowance is fundamentally a one-time compliance instrument authorizing emissions of one metric ton of carbon dioxide equivalent (CO2e) within cap-and-invests compliance system. By contrast, the investments the MDI is intended to support create recurring capacity to reduce emissions over the life of an asset, often for decades. Those are not equivalent things, and they should not be treated as equivalent in assessing the implications of the MDI. The MDI has an emissions-reduction multiplier effect by using an allowance's one-time compliance value to support investment in long-lived infrastructure that generates recurring emissions reductions for years, producing benefits that extend well beyond a single compliance period. Viewed in those terms, the relevant question is not simply how many additional allowances may be associated with the MDI in the near term, but whether the mechanism expands the practical capacity needed to support deeper reductions over time. These investments can help covered sectors prepare for a more stringent cap by putting emissions-reducing technologies and infrastructure in place before compliance obligations tighten further. For covered entities, this can lower future compliance costs, reduce exposure to allowance price volatility, and improve the economics of decarbonization projects that require long lead times and significant capital planning. By reducing future compliance pressure, the MDI can also help moderate cost pass-through to consumers at a time when California is already facing a serious affordability crisis. The benefits, however, may extend beyond the individual covered entity receiving MDI allowances. Deployment of industrial decarbonization technologies can help build broader sectoral capability by supporting learning-by-doing, supply chain development, operational experience, and, in some cases, reducing costs or barriers for subsequent projects. In essence, the MDI accelerates deployment of technologies or practices that can be replicated more broadly across sectors. That matters because broader availability of viable compliance pathways improves the ability of the market to absorb the increased stringency of the program. These investments may also help reduce leakage risk. For the individual facility, long-lived decarbonization investments can strengthen the economics of continued in-state operation. At a broader level, supporting continued industrial investment and technological deployment in California can help preserve the in-state industrial base and decarbonization capacity needed to support deeper emissions reductions over time. In that sense, the MDI can support not only facility-level compliance, but broader sectoral resilience under a tightening cap. For these reasons, concerns that assess the MDI solely based on the number of additional allowances associated with the mechanism miss the broader role that the MDI can play in expanding compliance options, supporting industrial decarbonization, and reducing leakage and affordability risks. In that respect, the MDI

reinforces the long-term environmental and economic integrity of the cap-and-invest program. (15d-CCoC-158.4)

Comment:

We support the changes in the 15-Day Amendments to broaden eligibility for MDI uses to include: 1) biomass capital costs, 2) biomass procurement capped at 50% of usage, 3) process emissions capital costs, and 3) carbon capture, utilization and storage (CCUS) capital costs. We appreciate CARB's recognition of these project types as essential for the cement sector's decarbonization roadmap.

We further support the increase in the spending window to the end of two compliance periods following the compliance period of the MDI allowance budget year – translating to a timeline of six to seven years. (15d-NCCC-182.2)

Comment:

The 15-Day Amendments restructure the MDI in ways that materially improve its potential to function as a working capital-investment mechanism. The new 0.8 CAF modifier, the Build Up California Reserve Account, the broadened eligible project list for industrial sectors, and removed the limitations for projects withing refining and industrial gas sections responding to concerns we raised in March. (15d-CBC-201.12)

Comment:

We want to address the broader integrity question because it has been raised in recent commentary on the 15-Day package and the Board will likely hear versions of it at the May hearing. The argument runs that because the MDI Reserve holds allowances totaling roughly the volume removed from the 2027 through 2030 cap relative to the prior regulation, and because those allowances may flow into circulation through approved projects, the cap has been relaxed and emissions will rise one-for-one with MDI utilization, with associated GGRF and California Climate Credit revenue losses estimated at up to $4 billion if MDI is fully utilized. The framing is mathematically tidy. It is also incomplete in three respects.

First, an allowance and a long-lived capital investment are not equivalent compliance instruments. An allowance authorizes one ton of emissions in one compliance period. A qualifying MDI investment generates recurring emissions reductions over the operating life of the asset, often two to four decades. Treating those as one-for-one substitutes obscures the multiplier effect that justifies the design. If a refiner uses MDI to fund CCUS infrastructure capturing one million tons per year over a thirty-year asset life, the relevant comparison is not between MDI allowances issued in one compliance period and the refinery's emissions in that period. It is between the marginal MDI allowance and the integrated abatement the resulting infrastructure produces over time. The

carbon market literature on output-based allocation has long recognized this distinction. (15d-CBC-201.13)

Comment:

High auction revenue and carbon market integrity are not the same thing, and the public conversation around the 15-Day package has tended to conflate them. Auction revenue funds the GGRF, which supports a portfolio of investments in transit, affordable housing, sustainable agriculture, forest health, low-income energy programs, and related priorities. Those investments deliver substantial public, environmental, and equity benefits the program was designed to capture, and they remain worth preserving on their own terms. The narrower question relevant to the integrity critique is whether retaining a marginal allowance for in-state, long-lived abatement infrastructure delivers less carbon abatement than auctioning that allowance and recycling the proceeds through GGRF programs. The available evidence does not establish that it does. Recent program-level analysis finds GGRF cost-effectiveness ranging from approximately $9 to over $2,000 per ton of CO_2-equivalent across the portfolio, with three of ninety programs delivering more than half of total reported emissions reductions on roughly six percent of implemented funding. The Legislative Analyst's Office has separately noted that GGRF spending targeted at emissions reductions within capped sectors generally does not produce net carbon benefit, because the cap already determines aggregate emissions and subsidized reductions at one capped source free allowances for use by another. These observations are not critiques of the GGRF as a public-investment vehicle. They concern the specific relationship between auction revenue and additional carbon abatement, which is the relationship the integrity argument depends on. The marginal MDI allowance, by contrast, is tied to a verifiable, CARB-approved decarbonization investment whose abatement cost is determined by the project's own engineering economics and verified against the regulation's permanence and enforceability standards. The "lost revenue" framing presumes the alternative use of that allowance value would deliver equivalent or greater carbon abatement. The data does not support that presumption. (15d-CBC-201.14)

Comment:

As mentioned in our previous comments, we strongly support CARB's inclusion of provisions for a manufacturing decarbonization incentive allocation in §95890 (g) to target support for hard-to-decarbonize manufacturing facilities and provide additional leakage protection. We also greatly appreciate the improvements that CARB made to these provisions in the 15-day package amendments including: • Enabling participation for additional sectors in the program – especially existing hydrogen plants and refineries. By expanding eligibility, CARB incentivizes all facilities to innovate with new emission reduction technology to further the State's decarbonization goals. • Not limiting

the low carbon hydrogen eligibility requirement under §95890(g)(2)(C)(1) to only those entities who have actually received the federal tax credit under 45V. (15d-AP-83.6)

Comment:

Additionally, the District supports with the updates to the criteria for exempt biomass-derived fuel use as an eligible category for expenditure of MDI value. (15d-PCAPCD-155.3)

Comment:

Also, adding capital cost considerations are a welcome addition to the Regulations, which will make a significant difference in the financial viability of these projects moving forward. (15d-PCAPCD-155.4)

Comment:

Additionally, we believe the limitation of a 50% cap for the purchase costs of fuel is reasonable. (15d-PCAPCD-155.5)

Comment:

We support that allowances for biofuels should be consistent with the requirements for renewable electricity and for hydrogen, both of which require the use of renewable power that is connected to the western electricity grid. (15d-PCAPCD-155.7)

Comment:

Kern appreciated Staff's modifications to the Manufacturing Decarbonization Incentive (MDI) provisions, expanding eligibility to the refining sector, which was previously excluded under the initial 45-day package. Recognizing the support needed for ongoing investment in the refining sector is a critical step forward in maintaining consistent fuel supply for our state and a meaningful way to leverage existing talent and infrastructure to meet climate goals. The opportunity to apply for the incentive prospectively provides needed support for overcoming barriers to these significant financial investments. Further, Kern appreciated Staff's inclusion of additional costs associated with engineering, design, and permitting necessary to deploy capital projects at industrial facilities, in recognition of the full suite of actions and expenditures involved in these initiatives. Kern also recognizes the efforts to widen the breadth of allowable project types. (15d-KE-190.4)

Comment:

To aid in achieving these goals, Constellation encourages CARB to extend eligibility for the Manufacturing Decarbonization Incentive ("MDI") to natural gas-fired power generators that install CCS.

In the initial proposal, eligibility for the MDI program was limited to manufacturing facilities, such as those engaged in manufacture of cement, food processing, glass, and metals. Eligible facilities could apply for MDI allowances by demonstrating investment in qualifying decarbonization actions, such as replacement of fossil fuel-powered equipment with electrified alternatives, procurement of low-carbon hydrogen, generation or storage of renewable electricity, and use of biomass-derived fuels. If CARB approved the application, the facility would receive a cap adjustment factor ("CAF") modifier, to be added to its applicable CAF, thereby increasing its free allowance allocation in a given compliance period. Allocations available for this program were expected to be around 40 million allowances.

In response to concerns about affordability and economic uncertainty, CARB proposed three important expansions to the MDI program in its 15-day package. First, CARB expanded MDI eligibility to refineries and other sectors. Second, it expanded the pool of allowances to 118.3 million (with half designated for general industrial sectors and half for refiners and related sectors), valued at approximately $4 billion. Third, CARB confirmed that CCS is a qualifying decarbonization activity for purposes of the MDI program. The MDI program helps to address many of the practical challenges entities experience as they invest in deep decarbonization. As CARB explained, the MDI program is designed to accommodate the reality that "the costs of some decarbonization options continue to be greater than allowance prices," particularly in light of "lost federal funding opportunities such as those previously available under the Inflation Reduction Act." It justified the expansion of the MDI program in light of "short-term economic uncertainty caused by federal disruption, loss of federal incentives, global events and volatile market conditions." (15d-CELLC-148.2).

Comment:

Some parties have also argued that the MDI undermines the environmental integrity of the program because it is a departure from the notion of a "fixed" cap. But that concern rests on an overly static conception of cap-and-invest that does not reflect how the program has long operated in practice. The environmental integrity of California's cap-and-invest program has never been defined solely by a fixed quantity of allowances divorced from flexibility mechanisms. The program has long paired a declining cap with mechanisms such as banking, offsets, the Allowance Price Containment Reserve (APCR), and the price ceiling to support cost containment, protect against leakage, and sustain the program over time. Those mechanisms are not departures from environmental integrity; they are part of the supporting architecture through which the program has historically preserved environmental integrity. The MDI is a logical evolution of that design. It does not grant covered entities unilateral authority to "create" allowances or "break the cap." Instead, it establishes a rule-based pathway for CARB to allocate allowances only when specific, verifiable decarbonization investments are

approved and made. Importantly, the mechanism is also structured so that allowances associated with an approved investment may be subject to return if the investment is not timely carried out, reinforcing that the MDI is tied to real performance rather than simply providing additional compliance value. In that respect, the MDI functions as an investment-linked flexibility mechanism within the program, not an expansion of the cap itself. Critics of the MDI tend to equate a “fixed” cap with environmental integrity, but the purpose of cap-and-invest is not to preserve a static allowance quantity for its own sake. The objective is to achieve cost-effective emissions reductions while minimizing leakage risk. From that perspective, the MDI is consistent with program integrity because it helps strengthen the capacity for industrial transition. A narrow focus on the number of additional allowances associated with the MDI overlooks this broader dynamic by treating near-term allowance quantities as the sole measure of environmental integrity, rather than considering whether the mechanism expands the practical pathways available to achieve the deeper reductions over time necessary to achieve California’s 2045 ambitions. The relevant counterfactual is not a world without additional MDI-linked allowances in the abstract, but a world in which the cap tightens without sufficient industrial transition pathways. In that scenario, when compliance obligations outpace feasible decarbonization opportunities, costs rise, leakage pressures increase, and long-term program durability weakens. Viewed against that alternative, the MDI preserves the environmental integrity of the program by supporting real-world capacity for decarbonization. (15d-CCoC-158.5)

Comment:

The latest draft regulations introduced the Manufacturing Decarbonization Incentive (MDI), a major change to the program that raises questions about the cap’s integrity. We appreciate the intent behind the MDI as a program design element with potential benefit, particularly aimed at supporting industrial decarbonization (15d-CE-181.3)

Comment:

The category of “petroleum refineries” or “food processors” or “cement producers” describes a regulatory class. It does not describe a uniform population of investable facilities. Within California refining, some facilities have access to suitable subsurface storage and pipeline corridors for CCUS, and some do not. Within food processing, some operations have process loads compatible with industrial heat pumps, and some require high-temperature steam that current technology cannot economically deliver. The MDI mechanism, by design, rewards facilities that can deploy qualifying projects. It cannot deliver protective allocation to facilities whose investable project set is constrained by geology, technology readiness, or capital access. That is the structural reason MDI is properly understood as a complement to, not a substitute for, adequately calibrated free allocation through the CAF. The CAF protects the leakage-exposed

facility regardless of its project set. The MDI rewards the facility that can act on its project set. Both mechanisms are needed. (15d-CBC-201.18)

Comment:

Ag Council and Dairy Institute support the overall expansion of Manufacturing Decarbonization Incentive (MDI), given the volatility of the ag incentive programs funded by GGRF. We urge CARB to create and disperse additional allowances for MDI outside of the overall cap and the Allowance Price Containment Reserve (APCR) so that the allowances used for MDI do not further reduce allowances utilized to mitigate cost pressures for those participating in the Cap. Utilizing outside allowances will bolster efforts created by Build Up California. (15d-ACC-102.4)

Comment:

We further support CARB in establishing rigorous monitoring and effectiveness criteria for the allocation of allowances under the Build Up California Reserve Account to ensure the long-term climate impact of the program. (15d-CAR-63.2)

Agency Response:

No changes were made in response to these comments. Staff appreciate the support for the updated MDI Allowance Allocation proposal in the Proposed Amendments and agree with commenters' explanations of and for the MDI.

The "multiplier effect" for GHG reductions achieved through MDI projects supports accelerated progress toward the 2030 and 2045 GHG reduction targets, as investments in low-carbon technology and fuels occur earlier than they would have absent the MDI program, and the reductions achieved from these early investments compound in each year of continued facility operation. This is particularly important in light of potential delays in reductions for other sectors due to federal actions. This incentive structure supports the cost-effectiveness of the MDI program.

CARB staff note that the MDI proposal does not divert State-owned allowance from the GGRF. GGRF and MDI also have different policy objectives and thus the range GHG cost-effectiveness of the use of MDI allowances and GGRF are expected to vary. See Agency Response to comment O-8.52 on the range of cost effectiveness.

O-8.1c Multiple Comments: Support for Adopting MDI Allocation Proposal

Good morning, Chair Sanchez and members of the Board. I'm with Heirloom a climate technology company headquartered and operating here in California.

From the Scoping Plan, in addition to steep emissions reductions, California requires at least 75 million tons of carbon removal to reach net zero. Current policy, while bold, will not get us there. Early essential climate technology like ours needs targeted support and financing. That is what MDI can provide. MDI channels financing from polluting industries toward the innovators who can abate the hardest-to-decarbonize emissions. That is climate policy working as intended. Without MDI, we risk watching California-borne solutions get deployed in other states and other countries, while California falls short of its own 2045 goal.

Worse given, current federal dynamics who risk these technologies failing to scale at all, losing jobs, increasing climate-related insurance costs, and making the state harder and less affordable to live in. With MDI, we will see investments in high-road projects that create good jobs and climate outcomes.

The Board should send a clear signal with your vote today that our state is serious about using every tool we have to meet affordable net zero on schedule. Let me be clear, the MDI provisions, which were included in the January proposed amendments and refined in April will catalyze in-state investments, innovation, jobs and GHG reductions that dramatically build on the success of this Board and its programs. We urge you to adopt these amendments today and move forward with their implementation. Thank you and your staff for the hard work of innovating and advancing our climate goals under difficult circumstances. Thank you.(BH-HeC-119.1)

Comment:

We'd also like to support staff's proposed Manufacturing Decarbonization Incentive. We believe that any resulting investment in decarbonization and leakage prevention is a win for both the environment and the economy. (BH-CCEEB-121.3)

Comment:

Good afternoon, Chair Sanchez and members of the Board. My name is Jacob DeFant, speaking on behalf of Agricultural Council of California. Ag Council represent approximately 15,000 farmers across California ranging from small farmer owned businesses to some of the world's best known brands. Our membership includes many farmer-owned cooperatives and businesses that conduct food processing activities, and as such have to comply with CARB's Cap-and-Invest regulation. We approached this rulemaking with the core principle of wanting to help ensure that Cap-and-Trade is both effective and affordable for all Californians. CARB has presented a draft allowance

budget through 2045 with a dramatically steep decline in allowances. This aggressive decline will further drive up costs for the food and agriculture sectors, threatening economic engines in the state, raising consumer costs, and increasing leakage risk. We commend CARB for trying best -- it's best to comply with aggressive legislative mandates and appreciate the Board's work trying to manage the risk of these steep allowances declines through proposed programs such as the Manufacturing Decarbonization Incentive. The risk to California's food econ -- food system economy is not hyperbolic. Since 2020, five of the state's major food processing facilities have closed, all of which are in communities with unemployment rates higher than the state average. Costs and energy -- cost of energy and regulatory compliance under Cap-and-Trade were cited for reasons for closure for all five. Ag Council strongly supports the Manufacturing Decarbonization Incentive allocation as a tool to helping reduce compliance costs while making meaningful efforts to reduce emissions and support the state's climate goals. By using the allowance structures to offset the cost of greenhouse gas reduction projects, CARB's has created a pathway to ensuring long-term reduction in greenhouse gas emissions from the food processing sector. The incentives are increasingly important as the Legislature continues to stall in appropriating funds for popular and effective proven GGRF funds since the FARMER and HVIP -- thank you all very much. (BH-ACC-115.1)

Comment:

MDI is the critical market signal and deployment mechanism needed to deploy innovative climate technologies in the industrial sector.

Hard-to-abate industries (refining, cement, steel, chemicals, and manufacturing) face enormous capital costs and long asset lifetimes. Without targeted incentives, the innovative technologies we provide will continue to be delayed or deployed outside California as many impactful technologies have high abatement costs and won't scale without further support. MDI directly addresses this by allowing eligible facilities to use the value of allowances to cover capital costs, electricity costs, and associated design, engineering, and permitting expenses for projects that capture, store, or reduce CO_2 emissions.

This creates the first major, in-state market pull for our technologies at the scale required. It de-risks early deployments, drives learning-by-doing, and builds the supply chains and expertise that will lower costs over time. By approving MDI, California will send a clear and powerful signal to innovators worldwide that the market for cutting-edge decarbonization technologies is open here. While other states have actively courted these technologies with incentives and policy support, MDI positions California to lead, attracting the best solutions and ensuring they are deployed in the state.

By enabling these investments to happen in California, MDI delivers real, verifiable, and additional emissions reductions while keeping high-value industrial activity, jobs, and tax revenue in the state. Without these investments, California risks falling short of its 2030 and 2045 climate targets and the ambitious goals outlined in CARB's Scoping Plan, while also forgoing the opportunity to expand a strong, clean-tech job base right here in California. It is precisely the type of pragmatic, innovation-focused tool the Legislature envisioned in AB 1207 (Irwin, 2025). (BH-HC-22.1)

Comment:

Cap-and-Invest at its core is not a revenue program. AB 32 directed cost-effective reductions. SB 32 reinforced that mandate. AB 398 added explicit obligations to minimize leakage and ratepayer costs. None of those statutes identify revenue generation as a program objective. AB 1207 reinforced those obligations by directing CARB to design regulations that minimize ratepayer impacts and ensure that compliance activities do not disproportionately burden low-income communities, making affordability and equity explicit design requirements, not downstream considerations. The Greenhouse Gas Reduction Fund (GGRF) is a consequence of the market mechanism, not its purpose. Recent commentary characterizes free allocation and the Manufacturing Decarbonization Incentive (MDI) as costing the state billions in lost auction revenue. That framing measures the program against a goal the Legislature never set, and we reject it. We value protecting California's households through affordable program design, keeping their wages in household budgets. NetZero California's analysis of GGRF expenditures found that many programs deliver reductions at costs well above the market allowance price or best-available technology benchmarks. Value preserved through free allocation and MDI stays in California; it stays in worker wages, facility operations, local tax bases, fuel price stability, and ratepayer credits. (BH-CPSC-5.1)

Comment:

The Manufacturing Decarbonization Incentive ties additional allocation to demonstrated decarbonization investment. The U.S. Acid Rain Program achieved SO_2 reductions ahead of schedule and below projected costs by giving industry the certainty to invest rather than exit. MDI works on the same premise. A qualifying facility that modernizes is a California employer, regulated under California standards, producing for California consumers. The alternative is grim, as two refinery closures, more than a dozen food processer exits, and reduced output for cement, glass, and other exposed commodities have already demonstrated. The MDI gives CARB a tool to prevent regrettable – and in the case of fuel, potentially catastrophic – outcomes. That said, MDI incentives must maintain the program's environmental integrity by being subject to clear accountability

standards, like offsets, that ensure they will provide additional GHG emission reductions or removal. (BH-CPSC-5.4)

Comment:

We appreciate CARB's work on this 15-day package and support approval today. From AB 32 to SB 32, to AB 398 and now AB 1207, the consistent throughline of the program has been significant cost effective emissions reductions over time, with strong protections mechanisms for affordability and leakage protection. AB 1207 reinforced that throughline. It directed CARB to consider affordability and cost effectiveness and to minimize emissions leakage as the Program is extended and increased in ambition. Please keep mind that allowance prices are also compliance costs. Those costs do not stop with the covered entities. They flow through the economy in the form of higher prices for fuel energy, goods and services, everyday costs like Californians already feel. That is why industrial allocation is such an important tool. Allowances for leakage exposed industries are avoided compliance costs. They moderate that cost pressure that would otherwise flow through to business and consumers. It also helps keep production and investment in California under California's climate rules. For that reason, we strongly support the manufacturing decarbonization incentive in the 15-day package. The MDI has an important environmental integrity benefit as well. It allows California to trade a one-time right to emit one metric ton of emissions in exchange for investments in year after year emissions reductions that will remain over the life of that equipment. By converting compliance value into durable emissions reducing infrastructure, the MDI demonstrates viable decarbonization pathways for covered entities here in California. That is exactly the kind of approach that the Legislature envisioned in AB 1207. It's cost effective emissions reductions, minimizing leakage. Affordability is being placed at the heart of the program. We view this as a faithful implementation of AB 1207. (BH-CCoC-175.1)

Comment:

CMTA appreciates CARB's thoughtful work on these proposed regulations and urges the Board to adopt them. We especially appreciate the Board's continued recognition of the importance of industrial competitiveness, leakage protection and practical pathways for decarbonization. CMTA appreciates CARB's inclusion of measures intended to address these issues, and most importantly, the industrial decarbonization incentive program. The MDI is especially important because many industrial sectors face significant technological and financial barriers to decarbonization, particularly for process emissions and high heat manufacturing operations where commercially viable alternatives are still emerging. Programs like the MDI help bridge that gap by providing manufactures with a pathway to invest in cleaner tech technologies, facility upgrades, fuel switching, energy efficiency improvements, and innovative emissions reductions

projects that may otherwise be cost prohibitive. Importantly, MDI helps ensure California manufacturers can continue operations and investing in state, while advancing emissions reductions. This is a critical part of emissions (inaudible) and try to expose industries by competing nationally and globally and often have limited ability to absorb rapidly increasing costs. Providing meaningful reinvestment opportunities through the MDI supports both California climate incentives and long-term viability of the State's industrial base. As the program moves forward, we continue -- we encourage continued focus on affordability impacts, cost containment mechanisms and maintaining sufficient allowance allocations for these industries. We appreciate your time and again urge the Board to adopt these regulations. (BH-CMTA-299.1)

Comment:

We write in support of the Manufacturing Decarbonization Incentive (MDI) included in CARB's 15-Day Amendments to the Cap-and-Invest (C&I) Program, and we are grateful for the creativity and policy ambition that this mechanism represents.

The MDI can address a systemic problem. Project 2030's analysis of CARB's own emissions data reveals that core non-oil and gas industrial emissions in California have barely moved over the last decade. What little reduction did occur includes a cement facility closure, i.e., not due to systematic decarbonization across the industrial sector. The carbon price, which hovers around the price floor, is not driving investment in the technologies that the industrial sector needs to fundamentally transform. The MDI changes that calculus by creating a direct financial incentive for covered entities to make those investments within this decade. Project 2030's two core programs focus on industrial decarbonization and carbon dioxide removal (CDR) — both eligible for the MDI, in alignment with the 2022 Scoping Plan. This alignment is why we believe the MDI, designed well, could be one of the most consequential climate mechanisms California has introduced in years. (BH-P2030-39.1)

Comment:

Project 2030 is deeply grateful for CARB's leadership on the MDI, and for the Board's continued commitment to meet California's climate goals with urgency and creativity. We believe the MDI, designed thoughtfully, can become a landmark mechanism — one that unlocks private investment in both reductions and removals, removes structural bottlenecks on the path to 2045, and demonstrates that climate ambition and fiscal responsibility are not in conflict. We stand ready to support CARB staff in developing the program's design details and look forward to continued collaboration as the regulations are finalized. (BH-P2030-39.4)

Agency Response:

No changes were made in response to these comments. Staff appreciate the support for adopting the MDI Allocation proposal in the Proposed Amendments.

O-8.2a Multiple Comments: MDI effective date for eligible spending

As currently structured, the incentive fails to capture those investments which were made in good faith prior to the incentive's effective date but remain active on a facility's depreciation schedule. We recommend that CARB establish a lookback period that extends the eligibility window to capture all qualifying projects that remain within their active depreciation schedule. (45d-GPI-238.3)

Comment:

The proposed timelines for use of the incentive do not work as written and must be revised. As currently structured, the incentive fails to capture qualifying capital investments made in good faith prior to the incentive's effective date that remain active on a facility's depreciation schedule. Many CMTA members have already made substantial decarbonization investments in anticipation of California's long-term climate trajectory. Excluding these projects creates a disincentive for early action and penalizes facilities that have proactively reduced emissions.

We recommend that CARB establish a reasonable lookback period that extends eligibility to all qualifying projects that remain within their active depreciation schedule. This approach would recognize prior investments, preserve regulatory credibility, and better align incentives with real-world capital planning cycles in manufacturing. (45d-CMTA-337.3)

Comment:

CARB should also re-evaluate whether the proposed application timelines for the initial MDI application cycle allow sufficient time for facilities to meaningfully participate. Proposed § 95891(g)(5) establishes an application deadline of September 1, 2026, for budget years 2027 and 2028, with subsequent deadlines for later years. Given that the Board hearing for the Proposed Amendments is scheduled for late May 2026, and that the rulemaking process will include final adoption and review by the Office of Administrative Law, the proposed September 2026 deadline may leave facilities with limited time to evaluate program requirements, develop qualifying project proposals, and prepare complete applications. Industrial decarbonization projects typically require careful technical analysis, internal capital planning, and coordination with engineering, permitting, and financing teams before a facility can commit to a specific investment proposal. If the initial application window occurs before facilities have sufficient clarity regarding program implementation details or guidance, otherwise viable projects may be unable to participate simply due to timing constraints. To improve administrative

feasibility and maximize participation in the program's early years, CARB should consider extending the initial application deadline for the 2027 and 2028 budget years or adopting a two-step application structure. Under such an approach, facilities could submit a short-form notice of intent within the initial deadline to indicate interest in pursuing a qualifying project, followed by a more detailed application once implementing guidance and program administration procedures are fully established. Providing additional flexibility in the early application timeline would help ensure that the MDI is accessible to facilities with legitimate emissions-reduction projects while maintaining the integrity of the program's review process. (45d-CCoC-374.16)

Comment:

More broadly, CARB should also consider providing limited implementation flexibility where facilities demonstrate documented progress toward qualifying investments but encounter delays related to permitting processes, interconnection timelines, supply-chain disruptions, or other factors outside the facility's reasonable control. Allowing the Executive Officer to recognize documented project expenditures or binding contractual commitments toward eligible activities would preserve program accountability while improving the incentive's ability to support real-world industrial decarbonization efforts. Ensuring that the Manufacturing Decarbonization Incentive can function as a practical capital-deployment mechanism, rather than only as a narrowly defined equipment purchase requirement, will help the program more effectively support emissions reductions while maintaining the competitiveness of California's manufacturing sector. (45d-CCoC-374.15).

Comment:

The current proposed language establishes firm application deadlines tied to budget years and compliance periods. Section 95891(g)(5) provides: "To receive the manufacturing decarbonization incentive allocation the facility must apply to the Executive Officer by the following dates: (A)September 1, 2026 for budget years 2027 and 2028;(B)April 10, 2028 for budget years 2029 and 2030;(C)April 10, 2030 for budget years 2031 through 2033; (D)April 10, 2033 for budget years 2034 and 2035;(E)April 10, 2035 for budget years 2036 through 2038."

Section 95891(g)(6)(A) requires that applications include a project timeline with major milestones. Section 95891(g)(7) requires post-compliance reporting. The structure is orderly and predictable. What it does not explicitly account for is that large-scale industrial decarbonization projects often depend on variables outside the facility's direct control. Permitting under CEQA can take years. Interconnection queues for electrification projects can extend unpredictably. Equipment lead times for industrial boilers, electric arc furnace upgrades, hydrogen blending infrastructure, or carbon capture units routinely exceed 24 months. Financing commitments may hinge on federal

tax-credit guidance that evolves after regulatory filing deadlines. When incentive retention windows are rigid, these realities can transform MDI from a catalyst into a compliance trap. To address this, ClimateBuild proposes the addition of defined, but flexible, milestone criteria within §95891(g). This is not a request for open-ended extensions. It is a request for structured flexibility grounded in documented progress. We propose the insertion of the following language after §95891(g)(5)(E): "The Executive Officer may grant reasonable extensions of application deadlines and/or project milestone schedules where an applicant demonstrates that delays are caused by factors outside the applicant's reasonable control, including but not limited to permitting delays, interconnection delays, supply-chain disruptions, construction delays, or financing delays. Any extension shall require written findings by the Executive Officer and shall not exceed three years without additional Board approval." We further propose modifying §95891(g)(6)(A) to read: "…including description of equipment or fuels purchased, project timeline with major milestones and defined, but flexible, criteria for schedule updates reflecting permitting, construction, and industrial process-change realities, cost estimates…" And modifying §95891(g)(7) to clarify that reporting includes documentation of schedule variances and their causes rather than treating variance as presumptive noncompliance.

This structure accomplishes several objectives. It preserves accountability by requiring documentation and written findings. It prevents abuse by limiting extension duration. Most importantly, it ensures that MDI can influence investment decisions. If executives cannot rely on regulatory timing flexibility in the face of permitting and infrastructure constraints, the incentive will be discounted internally and capital will flow elsewhere. From an affordability perspective, this matters profoundly. If modernization projects fail to advance because the incentive window is too narrow, facilities will either absorb higher compliance costs or curtail operations. In both cases, consumer prices rise and leakage risk increases. (45d-CBC-446.9)

Agency Response:

Changes were made in response to these comments. Under the 15-day Amendments, the first application deadline for MDI allocation is now June 1, 2027, and eligibility for expenditures on facility GHG emission reduction projects was extended to those that occur once the Proposed Amendments are in effect.

In the 15-day Amendments, text was added to specify that MDI value may be used for eligible GHG emissions reduction expenditures on or after the expected effective date of the Regulation, which is expected to be September 1, 2026. Setting the effective date of the Regulation as the earliest date for eligible MDI spending sets the appropriate signal for facilities to plan for how to invest in low-carbon production methods and fuels ahead of the first application deadline,

while backfilling lost federal incentives and ensuring that MDI allowance value is focused on accelerating near-term facility GHG reductions.

In addition, the Proposed Amendments balance flexibility to ensure that MDI allowance value is used and deployed for eligible near-term GHG reduction projects with the need for oversight to ensure the value is used in a manner that complies with the requirements of the Regulation. The 15-day Amendments extended spending window to provide sufficient time (six to seven years) for eligible projects to proceed given permitting process timelines that are outside the facility's control. An exemption or extension process due to permitting delays poses administration challenges, is difficult to scope or define, and undermines accountability for the use of MDI allowance value within the objective regulatory framework established in section 95891(g).

O-8.2b Multiple Comments: MDI effective date for eligible spending

Eligible Project Costs Should Include Expenditures Incurred After ISOR Publication. The MDI, as proposed, requires facilities to apply by September 1, 2026, and does not specify when project costs must have been incurred to be eligible. PSG respectfully urges CARB to clarify that eligible project costs include expenditures incurred from and after the publication of the ISOR on January 23, 2026 for approved eligible projects. PSG is currently in active construction of the Mojave Micro Mill and plans substantial capital expenditures on electrification and renewable generation features that are precisely the type of investment the MDI is designed to incentivize. Excluding pre-application expenditures incurred after the ISOR is published would penalize early movers — the very actors the MDI is designed to reward — and would signal that slowing development to await regulatory clarity is the rational strategy for prospective MDI applicants. (15d-PSG-107.9)

Comment:

Giving credit for early actions has been an important feature of the program's design since its inception. GPI's members have made a number of investments in recent years that will result in reduced carbon emissions at their facilities. As currently structured, the incentive fails to capture those investments which were made in good faith prior to the incentive's effective date but remain active on a facility's depreciation schedule. We recommend that CARB establish a lookback period that extends the eligibility window to capture all qualifying projects that remain within their active depreciation schedule. (15d-GPI-79.3)

Comment:

Clarifying eligibility for early investments: CARB should ensure that near-term investments to preserve operations while improving air quality are eligible for MDI

allowance allocation. While the Proposed 15-Day Amendments properly seek to correct unrealistic application timelines as proposed in the 45-Day Amendments, WSPA is concerned that near-term investments to preserve operations while improving air quality may be unintentionally ineligible. Additional flexibility will be needed to ensure that such early investments can qualify for the CAF modifier. Given the short-term regulatory construct now envisioned for allowance allocations in the Proposed 15-Day Amendments – and the long-term, cyclical nature of refinery infrastructure investments in particular – CARB should ensure that early action-eligible expenditures will also qualify for incentive allocations. Greater investment certainty is needed to ensure that California can maintain an affordable, reliable, and safe supply of transportation fuels well into the future, and any early investments in air quality improvement projects should be accommodated accordingly. (15d-WSPA-164.8)

Agency Response:

No changes were made in response to these comments. Please refer to Agency Response to comment O-8.2a regarding the effective date for eligible uses of MDI allowance value.

Regarding the use of MDI allowance value for projects that reduce local air pollution, see response to comment O-8.10.

O-8.3a Multiple Comments: MDI spending window

Five-Year Spending Window: We support the proposed five-year window to deploy the additional allowance value. Project development timelines in California — encompassing permitting, interconnection, equipment procurement, and construction — are long. A five-year window is a reasonable accommodation of those realities. We encourage CARB to provide maximum flexibility within this window to allow facilities to proceed at the pace their project development timelines require. (45d-RE-375.2)

Comment:

Align use and repayment timelines with project readiness by triggering the five-year spending window when a facility activates MDI allowance value, not when it is initially allocated. Separately identify and track MDI allowances within the CITSS to prevent commingling with compliance allowances and preserve the investment signal. (45d-CSCME-352.13)

Comment:

The proposed five-year spending requirement should also be considered in the context of the cap-and-invest program’s broader approach to mitigating emissions leakage. Industrial allocation under the program is designed to reduce leakage risk by helping EITE facilities remain competitive during the transition to a lower-carbon economy.

Through mechanisms such as the Cap Adjustment Factor and production allocation methodologies, the program seeks to maintain in-state production while facilities undertake emissions-reduction investments. The proposed Manufacturing Decarbonization Incentive (MDI) operates within that framework by providing additional allocation to facilities that commit to undertaking qualifying emissions-reduction activities. Under the Proposed Amendments, however, facilities must spend the value associated with those additional allowances on eligible greenhouse-gas-reduction activities within five years of the vintage year of the allowances. If the value is not spent within that timeframe, the facility must return an equivalent number of allowances calculated based on the unspent value. This structure introduces execution risk for facilities evaluating whether to participate in the program. Industrial modernization projects often unfold over extended planning horizons and can be influenced by factors outside the direct control of individual facilities, including environmental review timelines, infrastructure development schedules, equipment procurement lead times, and other regulatory approvals. When the incentive is conditioned on meeting a fixed spending window, facilities may need to consider the possibility that project timelines could extend beyond the regulatory deadline even when investments are progressing in good faith. From an investment perspective, this uncertainty may affect how facilities evaluate the incentive when making long-term capital planning decisions. Companies typically evaluate major industrial modernization projects based on multi-year planning horizons and a range of regulatory and market considerations. If there is significant uncertainty regarding whether incentive allocations can ultimately be retained, the perceived value of the program may be discounted in internal investment analyses. (45d-CCoC-374.13)

Comment:

Align Incentive Timing with Industrial Investment Cycles. To address this, these structural adjustments warrant implementation:

1. Extend the allowable expenditure period from five to at least seven years to reflect the extensive California permitting and approval process.

2. Begin the expenditure time clock from when allowances are withdrawn from a facility’s CARB account.

3. Moderate the rate of decline in the CAFM schedule so that the incentive retains meaningful value throughout a project's development cycle.

4. Ensure costs are eligible starting with the publication of the ISOR to ensure no perverse incentive to delay otherwise eligible projects.

5. Include project development costs as eligible project costs, including permits, engineering, and environmental studies. (45d-CLECA-417.10)

Comment:

Additionally, any prior investments that have been made and remain within their active depreciation schedule should be eligible. A reasonable “look-back” approach will better align incentives with company-specific capital planning cycles. (45d-AECADC-347.7)

Agency Response:

Changes have been made in response to these comments. The Proposed Amendments were updated to clarify the GHG reduction purpose of MDI allowance value and to align the spending deadline with the post-compliance period reporting cycle. The five-year deadline specified in the 45-day proposal was replaced with a new deadline aligned with compliance periods, where facilities receiving MDI allowances must spend that MDI value by the end of two compliance periods following the compliance period of the MDI allowance budget year, providing 6-7 years for facilities to use MDI value. This supports near-term investments in low-carbon production methods and fuels while allowing more time to support deployment of major capital projects, given the financing complexities and potential permitting challenges for such projects.

Tracking the distribution and use of MDI allowances is consistent with current practice, and CARB will provide transparent public reporting on the MDI program in accordance with Board Resolution 26-7, which directs the Executive Officer to annually make publicly available the number of MDI applications received and approved, and the number of MDI allowances issued in total and by sector, MDI allowances remaining, MDI allowances returned, and MDI allowances retired. MDI allowances will also be separately tracked in the registry system and included as their own category in the Quarterly Compliance Instrument Report. CARB will also provide facility-specific MDI allocation disclosures to support a clear investment signal for MDI allowances.

For further discussion on the September 1, 2026, start date for eligible uses of MDI allowance value, see Agency Response to comment O-8.2a.

O-8.3b Comment:

The MDI Should Extend the Spending Window to Seven Years. The five-year spending window proposed by CARB is materially inconsistent with the actual development timeline for large-scale industrial decarbonization projects in California. California's permitting environment — including environmental review under CEQA, air district permitting, and CPUC/CAISO grid interconnection processes — routinely requires three to five years before significant construction expenditures can begin. CEQA review alone often takes two to four years for major industrial facilities. Grid interconnection for new industrial load can require eight or more years under current CPUC-adopted

energization timelines, particularly when new substation construction is required.18 Combined with feasibility studies, engineering design, and project financing timelines, the total development cycle for a major industrial decarbonization project regularly reaches six to seven years or more. A five-year spending window will, in practice, exclude many of the large capital projects the MDI is designed to support — precisely the projects that deliver the deepest and most durable emissions reductions. PSG urges CARB to extend the spending window to seven years. (15d-PGS-107.10)

Comment:

CSCME urges CARB to: (1) extend the spending window to three compliance periods so that it better aligns the actual investment timelines of the projects it is designed to support and (2) modify the language to avoid deterring investments that will clearly achieve meaningful GHG emission reductions, as determined by CARB, even if they are expected to be completed after the applicable deadline. (15d-CSCME-174.3)

Comment:

Project scale and multi-agency coordination. The decarbonization investments most likely to deliver durable in-state abatement, including major CCUS infrastructure, hydrogen substitution, large-scale industrial electrification, and process redesign for cement and glass, sit at a scale requiring coordinated approvals across CARB, the CEC, the CPUC, regional air districts, the State Water Board, the Department of Conservation’s Geologic Energy Management Division, the State Lands Commission, local land-use authorities, and in many cases federal agencies. The MDI deadline structure under § 95891(g)(5), even as revised, does not yet account for cumulative permitting timelines. An applicant with a financeable project may miss MDI windows because of CEQA litigation, CAISO interconnection-queue position, or air district permitting cycles that operate on calendars CARB does not control. (15d-CBC-201.17)

Agency Response:

No changes were made in response to these comments. The 6- to 7-year spending deadline based on compliance periods in the 15-day Amendments is designed to balance incentivizing near-term facility GHG reduction projects, in support of the 2030 and 2045 GHG reduction targets, with providing sufficient time for financing, permitting, and deploying complex capital projects. The 15-day Amendments did not introduce any further flexibility into the spending deadline due to administrative complexity and the need to ensure proper oversight by CARB on the use of MDI allowance value and the return of any unused MDI allowance value. Please refer to Agency Response to comments O-8.2a and O-8.3a for further discussion regarding the MDI spending window.

O-8.4a Multiple Comments: Extend MDI eligibility to refineries, oil and gas producers, hydrogen producers, and other sectors

Asphalt Refineries are small, with limited opportunities and limited capital available to decarbonize operations. Paving and roofing asphalts are materials that are essential to the construction industry. Asphalt Refineries operate with low product margins as prices are largely dictated by infrastructure and housing construction demands, and lower cost asphalts can be imported into the State of California via truck and rail.

Electrification may be technically feasible for some process heaters and boilers; however, electrification projects face a number of hurdles including, but not limited to, cost effectiveness and constraints with California's electrical grid. WIRA's Asphalt Refinery members do not believe these hurdles can be overcome before their allocations are reduced by more than 60 percent or more in 2031. For example, significant upgrades to electrical infrastructure, both onsite and offsite, would be needed to accommodate the increased power demand created by an electric process heater. While we appreciate the allocation incentive provided in the proposed regulations, we would like to note that Asphalt Refineries would not be able to take advantage because they have the same NAICS code as petroleum refineries that are expressly exempt.

One Asphalt Refinery estimates that by replacing their 39 MMBtu/hour natural gas-fired crude oil heater with an electric heater, total facility power demand would increase by over 700 percent, more than doubling utility costs each month. (45d-WIRA-372.2)

Comment:

CARB should expand its proposed manufacturing decarbonization incentives to include petroleum refineries, crude extraction, and biorefineries.

CARB is proposing to adopt a manufacturing decarbonization incentive allocation under § 95891 as a new cost-containment tool to support decarbonization investments and manage compliance costs, allowing eligible facilities to receive additional free allowances via a CAF modifier and reinvest their value in CARB-approved decarbonization projects. This mechanism can be critical for maintaining operational affordability, consistent with § 95891's stated purpose to provide transition assistance and minimize GHG emissions leakage. However, CARB's proposed amendment excludes much of the oil and gas value chain—including petroleum refineries, crude extraction, and biorefineries – despite their high EITE and leakage risk. Excluding these sectors directly conflicts with the stated purpose of § 95891 and undermines CARB's obligation to minimize leakage in California.

By excluding petroleum and biorefining sectors, CARB denies these industries access to a mechanism that could help offset rising compliance costs and support long-lead-time investments in GHG emissions-reduction technologies. As a result, these sectors

must fund decarbonization entirely out-of-pocket while simultaneously facing declining CAFs and increasing allowance purchase obligations. This exclusion creates an allowance allocation disparity and further competitive imbalance across covered entities.

Other entities are permitted to monetize incentive allocations to finance decarbonization, while transportation fuel manufacturers, despite being highly trade-exposed, are excluded from the same opportunity. In doing so, CARB effectively prioritizes which industries are retained in-state and which are discouraged from operating in California, rather than advancing decarbonization based on GHG emissions-reduction potential. This unequal treatment increases operating costs for California-based petroleum and biorefining facilities and intensifies the risk that production will shift out of state to jurisdictions with weaker environmental regulations and higher lifecycle GHG emissions.

In CARB's Initial Statement of Reasons, CARB notes that other programs, such as LCFS and the Renewables Portfolio Standard, apply to energy sectors. However, those programs impose separate compliance obligations and costs and do not provide free allowances or leakage mitigation under the Cap-and-Invest program. The existence of these other regulatory programs does not justify excluding those sectors from a key cost-containment and decarbonization incentive under § 95891(g).

CARB should revise § 95891(g) to ensure that crude extraction, petroleum manufacturing, petroleum refineries, and biorefineries are eligible for manufacturing decarbonization incentive allocations, consistent with the program's purpose, the leakage-minimization directives of AB 32 and AB 1207, and the need to maintain manageable compliance costs while achieving real, in-state GHG emissions reductions. (45d-WSPA-381.18)

Comment:

California's manufacturing sector plays a key role in the state's economy and climate strategy. As recognized in the Initial Statement of Reasons (ISOR), the costs of some decarbonization technologies continue to be greater than allowance prices, which contributes to emissions leakage from the manufacturing sector and limits the pace of deployment. To that end, Blue Planet strongly supports the establishment of the Incentive Allocation to support the industrial sector and urges CARB to consider expanding the program to include all industrial sources of emissions, including refineries and power plants. Expanding eligibility to include a wide range of energy-intensive sectors would provide a clear and consistent market signal to support long-term investment and technology deployment in this area. (45d-BP-6.3)

Comment:

Most importantly, all sectors should be able to participate in the program – especially existing hydrogen plants, given that hydrogen is an important tool to reduce both emissions as a fuel and feedstock, enable zero-emitting technologies in the transportation, industrial and power markets, and that decarbonizing existing hydrogen facilities may anchor broader use of hydrogen and decarbonization across sectors. By expanding eligibility, CARB can incentivize all facilities to innovate with new emission reduction technology and encourage the development of these technologies by creating more demand across a broader spectrum of facilities. In-state hydrogen plants, in particular, can reduce emissions via electrification and/or purchasing biogas – and while some of these same technologies are encouraged under the Low Carbon Fuel Standard, impediments remain within that program, including credit value, which could be improved by combining incentives under both programs. We urge CARB to enable all sectors to receive credit at some level – at least in the near-term to jump-start the necessary innovation and provide substantive demand for the emission-reducing technologies. (45d-AP-351.9)

Comment:

Eligibility is further limited to facilities in specified manufacturing sectors based on NAICS classifications used in the Mandatory Reporting Regulation. Many entities covered under the cap-and-invest program, including fuel suppliers and other energy-sector participants responsible for significant portions of the program's compliance obligations, are not eligible to participate. While CARB may intend to focus the incentive on leakage-exposed manufacturing sectors, the narrow eligibility criteria substantially limit the potential scale of the program. As a result, the MDI should be viewed not as a broad decarbonization incentive across covered sectors, but rather as a targeted modernization tool for a subset of industrial facilities. To improve the program's effectiveness, CARB should consider allowing participation by additional covered entities that can demonstrate emissions reductions from qualifying investments at covered facilities. Expanding eligibility to include other covered facilities undertaking verifiable emissions-reduction investments would increase the number of potential projects and improve the program's ability to deliver meaningful emissions reductions. (45d-CCoC-374.10)

Comment:

Remove the Eligibility Limitation in Table 9-1(a): Rondo urges CARB to delete Table 9-1(a) in its entirety. The ISOR's stated rationale for excluding certain facility types — concern about double-crediting for transportation fuel entities — is too blunt an instrument. Ongoing and increasing Cap-and-Invest costs will dramatically impact the leakage risk for all large industrial facilities. Every lever California has to incent real

GHG reductions at industrial scale should be used. If the technology merits support for a glass or cement facility, it equally merits support for facilities in the transportation fuels sector that face the same heat decarbonization challenge. (45d-RE-375.4)

Comment:

Kern was simultaneously encouraged and dismayed by Staff's proposed Manufacturing Decarbonization Incentive (Incentive Allocation) in Section 95891(g), a new provision that would provide an additional allowance allocation mechanism for facilities as incentive to implement specified emissions reduction strategies. In general, Kern supports the concept behind this Incentive Allocation and is pleased to see CARB take additional action to minimize emissions leakage and support compliance through actual decarbonization efforts within the manufacturing sector. Such incentives by the State are keen recognition that the loss of federal funding puts decarbonization in jeopardy. However, the limitations on project types and ineligible industries unnecessarily constrain industry's ability to fully leverage the incentive in meaningful ways.

Specifically, refineries represent 40% of all industrial sector emissions and should be eligible for the Incentive Allocation. This is even more true for small refineries, which have well-established barriers to investment and can benefit most from incentives like this that are structured to provide an upfront source of funding rather than subsequent reimbursement years later. Kern acknowledges that CARB's other regulatory programs contain incentive programs with avenues available to the energy and fuel sectors and encourages CARB to see that providing such opportunities additionally within Cap & Invest serves to provide optionality. Each program contains unique provisions and limitations, such as the 2025 sunset on crediting for novel efficiency improvements under the Refinery Investment Credit Provision of the Low Carbon Fuel Standard. Furthermore, CARB can build protections into program requirements to assure an entity could not receive an incentive simultaneously under more than one program. Kern also urges CARB to revisit the list of eligible project types in favor of making the list less finite and restrictive. By listing only project types that involve electrification, low-carbon hydrogen, and energy replacements that must reduce or avoid fossil fuel combustion, CARB is picking winners and losers. These limitations stifle innovation and ignore other means of achieving industrial decarbonization. If the true goal is on-site emissions reductions, it seems appropriate that an incentive program should seek to fuel opportunity for any and all emission reductions – including incremental benefits from industrial efficiency projects that don't involve fuel or power switching.

Finally, Kern encourages CARB to further examine and incorporate mechanisms into the Cap-and-Invest program that give industrial facilities credit toward their compliance obligation relative to investments made for onsite decarbonization initiatives as an alternative to simply purchasing compliance instruments. For example, CARB could

allow a percentage of spend associated with executing a decarbonization project to count toward the entity's compliance obligation. All too often, companies with limited resources, like Kern, are forced to choose between compliance or facility investments, where compliance is the natural choice. Being able to apply the value of capital investments toward a compliance obligation is another means for small companies to overcome barriers that inhibit their ability to invest in the cleaner and innovative technologies that support climate goals. As noted above, Staff should take a broad and inclusive approach when considering what entities and activities are eligible, without limiting a regulatory framework to only certain types of existing technologies. Framing with flexibility will allow acceleration of decarbonization by avoiding arbitrary constraints. (45d-KE-392.5)

Comment:

Additionally, the strategies supported under the program are the same approaches needed to decarbonize other hard-to-abate sectors. ABC therefore encourages CARB to consider expanding the program to include additional covered sectors and facilities. Doing so would help accelerate greenhouse gas reductions across the state while supporting more rapid development and deployment of the technologies needed to meet California's climate goals. (45d-ABC-406.7)

Comment:

We appreciate CARB's intent to drive manufacturing decarbonization through a new and innovative incentive but recommend expanding the eligibility to SAF production facilities by adding an exemption for NAICS code 325199. This would support the in-state investments needed to enable the ramp up of SAF ~10.9% per year. This will provide a necessary planning horizon and not undermine California's interest in ramping up the production and use of SAF….

In §95891(g), CARB has proposed a novel and noteworthy concept for a CAF modifier for eligible facilities as a manufacturing decarbonization incentive that will be in effect from budget year 2027 through budget year 2038. We believe one or more decarbonization activities listed in this section have potential to significantly reduce GHG emissions from EITE facilities like RREC over the next 12 years. By providing this incentive for 12 years, CARB is providing a strong signal to EITE facilities to implement decarbonization projects that are technically feasible but may not be economically attractive under current market conditions. As per the ISOR, the intent behind this incentive is to align with the requirements of AB 1207 direction that the C&I minimize emissions leakage risk and support the state's climate targets. Returning allowance value to facilities to directly reduce on-site GHG emissions has been an industry priority since the Program's inception. These potential decarbonization projects can contribute to significant in-state investments that support statewide GHG emission reductions.

However, as currently proposed, SAF production facilities appear to be excluded from eligibility – an outcome that is perplexing and inconsistent with the state's broader policy goals for SAF. If the goal is to incent facilities to implement decarbonization technologies by making up for lost federal funding opportunities, such as those under the Inflation Reduction Act, and to achieve additional 'hard-to-decarbonize' GHG reduction, then the eligibility should be expanded, even if there are Low Carbon Fuel Standard (LCFS) benefits that also accrue. The C&I program is focused on stationary emissions, whereas the LCFS is focused on life cycle emissions, therefore they are complementary and shouldn't be treated as mutually exclusive.

In summary, Phillips 66 appreciates CARB's intent to drive manufacturing decarbonization through a new and innovative incentive but recommends expanding the eligibility of the incentive to SAF production facilities by adding an exemption for NAICS code 325199 as it can further catalyze in-state investments needed to support ramp-up of SAF production aligned with existing state policies. (45d-P66-416.4)

Comment:

Implement incentives that reduce the petroleum industry's investment costs without displacing existing cost-containment tools. … CARB should develop new industrial incentives, which could provide critical support for maintaining operational affordability. (45d-WSPA-381.4)

Comment:

The Categorical Exclusion of Crude Oil and Gas Extraction from the Proposed Manufacturing Decarbonization Incentive Is Inconsistent with the Program's Stated Goals CARB's proposed amendments introduce a Manufacturing Decarbonization Incentive that would provide covered entities with additional allocations in recognition of qualifying decarbonization investments, including electrification of emission units and other capital projects that reduce greenhouse gas emissions. Shadow Wolf strongly supports the principle of this incentive.

However, CARB has affirmatively designated crude petroleum and natural gas extraction (NAICS 211111) as categorically ineligible for this incentive under Table 9-1a of the proposed regulation order (Appendix A-1), without providing a technical or policy justification for this exclusion in the Initial Statement of Reasons.

We respectfully urge CARB to reconsider this exclusion. There is no principled basis for categorically denying decarbonization incentives to an entire industrial sector. The underlying logic of the incentive – that covered entities should receive credit for capital investment that reduces emissions – applies equally to crude oil and gas extraction operations as to any other covered sector. A facility that electrifies emission units, deploys carbon capture, or otherwise invests capital in demonstrated emissions

reduction projects should be eligible for recognition under this program, regardless of its industry classification.

Shadow Wolf notes that the program faces a 20-year horizon over which covered entities will need to invest significantly in emissions reduction to meet the program's statutory goals under AB 1207 and SB 840. Excluding an entire sector from any incentive for decarbonization investment signals to that sector that there is no pathway to compliance credit through capital investment – a disincentive that undermines the program's own objectives. If the intent of the Manufacturing Decarbonization Incentive is to accelerate emissions reduction across covered industries, that intent is best served by broad eligibility, not categorical exclusions.

Shadow Wolf requests that CARB either remove the categorical exclusion of crude oil and gas extraction from the Manufacturing Decarbonization Incentive, or provide a specific technical and policy justification for the exclusion that can be evaluated during the public comment process.

Shadow Wolf appreciates the opportunity to participate in this rulemaking process and the Board's commitment to a program that supports California's long-term climate goals. We respectfully urge CARB to carefully consider the operational realities of thermal EOR operations (45d-SWE-395.2)

Comment:

Further, the strategies supported under the program are the same that are needed to decarbonize other hard-to-abate sectors, including refineries, hydrogen other fuel production facilities, power plants, and others. We urge CARB to expand the program to all hard-to-abate sectors and facilities covered under the program, in order to accelerate GHG reductions in the state and support more rapid development and scale of the strategies needed to support California's climate goals. (45d-AA-364.8)

Comment:

Decarbonization Incentive Allocations to evaluate if WOR might be able to utilize them in upcoming years. Unfortunately, all Petroleum Refineries (NAICS 324110), regardless of size and functionality, are ineligible for these incentives. (45d-LTC-358.2)

Comment:

CLECA therefore recommends that CARB extend MDI eligibility to entities below the 25,000 MTCO2e coverage threshold by providing a path to opt-in to the MDI and including the Industrial Gas Manufacturing sector. (45d-CLECA-417.9)

Agency Response:

Changes were made in response to these comments. Table 9-1a was updated to extend MDI allocation eligibility to transportation fuel refineries and associated sectors, such as asphalt production, hydrogen production, ethyl alcohol manufacturing, and organic chemical manufacturing. All covered facilities in sectors listed in Table 9-1a that are eligible for industrial allocation are eligible to apply for MDI allocation, including facilities below the 25,000 MTCO2e coverage threshold that opt-in to the Program.

MDI allocation for decarbonization investments in these sectors incentivizes cleaner production methods for California refining that reduce GHG emissions while helping to meet consumer fuel demand and to support in-state jobs. The Proposed Amendments also extend MDI eligibility to all sectors that invest in eligible carbon capture, utilization, and storage projects under section 95891(g)(2)(H), contingent on Board approval of a quantification methodology that is adopted into the Regulation.

Regarding MDI eligibility for the crude petroleum and natural gas extraction sector, see Agency Response to comment O-8.6a.

Regarding MDI eligibility for electricity generators, see the response to comments O-8.5a and O-8.5b.

O-8.4b Comment:

ISSUES FOR CONTINUED ENGAGEMENT

The following topics are not fully resolved in the 45-day package and warrant continued engagement between CARB, the Legislature, and stakeholders. We raise them to signal that the Legislature intends to remain active on these questions.

Manufacturing Decarbonization Incentive

All high-leakage sectors should have access to the Manufacturing Decarbonization Incentive. Beyond access, the MDI's administrative structure may need adjustment to be practically deployable. Industrial modernization rarely occurs through a single capital project. A cement facility may need to combine clinker substitution, alternative fuels, waste heat recovery, electrified grinding systems, and eventual carbon capture. Requiring separate approval for each component slows modernization and increases administrative friction. A portfolio-based approach, allowing a facility-level decarbonization strategy encompassing multiple coordinated projects, would better reflect engineering and financial realities.

We also encourage CARB to allow structured extensions of MDI application deadlines and milestone schedules where delays are caused by factors outside the applicant's

control: CEQA permitting timelines, grid interconnection queues, equipment lead times, or financing dependencies. Rigid deadline structures that cannot account for these realities risk converting MDI from an investment catalyst into a compliance trap. If executives cannot rely on regulatory timing flexibility in the face of permitting and infrastructure constraints, the incentive will be discounted internally and capital will flow elsewhere. (BH-MCAA-1.10)

Agency Response:

No change was made in response to this comment. Please refer to Agency Response to comment O-8.4a regarding extending MDI eligibility further. Please refer to Agency Response to comment O-8.2a regarding application deadline and the effective date for eligible uses of MDI allowance value.

O-8.5a Comment:

As described above, the power sector - and POU investments in particular – have paced California's GHG reductions since the launch of the Program. They will continue to do so. POUs are leading the way to 100% clean energy, with many SCPPA members working towards achieving 100% clean energy goals ahead of state required timelines. Therefore, POUs are also among the first to invest in new clean energy resources that are needed to achieve that goal, including carbon capture and sequestration and green hydrogen to deeply decarbonize existing power plants. Early investments by POUs in these technologies can serve as proving grounds and help scale these necessary, but nascent, clean energy solutions. These are exactly the types of investments that CARB hopes to support through the proposed manufacturing decarbonization incentive, yet power plants and carbon capture are not included as eligible in the proposed program. As non-profit organizations accountable to our local communities, we hope CARB will view us as committed, leading partners in the state’s decarbonization efforts. Coupled with our leading, early investments in these strategies needed to achieve California’s broader climate goals, we urge CARB to include POU investments in decarbonizing existing power plants, including through the use of carbon capture, as eligible in the manufacturing decarbonization incentive program. (45d-SCPPA-357.12)

Agency Response:

No changes were made in response to this comment. Please refer to Agency Response to comment O-8.31a on inclusion of CCUS projects in the MDI.

Regarding eligibility, the MDI allowance allocation is meant to incentivize deeper decarbonization in certain manufacturing and industrial sectors. Electricity generation facilities are not currently included in the MDI allowance allocation because they are not in the manufacturing sector. As a result, power plants, including those operated by POUs, are currently outside the scope of MDI-eligible facilities under the Proposed Amendments.

Board Resolution 26-7 directs the Executive Officer to report to the Board, and to evaluate and propose, as appropriate, future amendments to the MDI program, this includes adding sectors that may not be eligible right away for MDI allowances. Future changes to MDI eligibility will be considered as part of that public process.

O-8.5b Multiple Comments: Extend MDI eligibility to electricity generators

We support CARB's inclusion and refinement of the Manufacturing Decarbonization Incentive (MDI) allocation framework. We also encourage CARB to revise the proposed framework to include electricity generation facilities, which are currently excluded, where qualifying investments can deliver durable, verifiable greenhouse gas emissions reductions. As described in the notice, CARB proposes to create and track Manufacturing Decarbonization Incentive Allocation Allowances and to populate a dedicated reserve account (the "Build Up California Reserve Account") to support MDI allocation, with allowances introduced only when facilities demonstrate qualifying investments that reduce facility greenhouse gas emissions. (15d-1PF-168.1)

Comment:

The rationales for the MDI program also justify eligibility for in-state natural gas-fired power plants installing CCS, which face many of the same challenges that manufacturing facilities and refineries face. CCS poses high upfront capital costs for installation, as well as significant ongoing operational costs. Global events and volatile market conditions—including tariffs and supply chain challenges—have further increased these costs. Although CCS-abated facilities will be able to claim the Section 45Q tax credit for carbon oxide sequestration, in the four years since the Inflation Reduction Act set the 45Q credit amount at $85 per metric ton, the value of that credit has been significantly eroded by inflation. As a consequence, the 45Q credit is not itself sufficient to deploy CCS at facilities where it could provide significant reductions. It is for this reason that Constellation's comments on the 45-day package emphasized the need for CARB to provide near-term clarity that a CCS-equipped facility's compliance obligation will not include emissions permanently sequestered in accordance with a Board-approved methodology to be developed pursuant to SB 905. By allowing gas-fired generation installing CCS to be eligible for the MDI program, CARB could further counteract the loss of other federal grants and incentives intended to support near-term deployment of the technology for gas-fired generation.

Constellation is making significant progress in developing its CCS projects, which will deliver significant emission reductions to California in the near term. Sutter Decarbonization Project, which is among the most advanced CCS retrofits at a natural gas-fired power plant anywhere in the world, is expected to begin capturing and sequestering emissions by 2031. This is precisely the sort of project the Legislature

intends the Cap-and-Invest Program to support. In AB 1207, it specifically directed CARB to design its Cap-and-Invest regulations to "encourage early action to reduce greenhouse gases" and "in a manner that is equitable." The inclusion of electricity generation in the MDI program will enable all sectors facing similar challenges to access incentives for deep decarbonization and help to ensure that the planned emission reductions occur on the anticipated timeline.

Given the critical role the Scoping Plan envisions for CCS-equipped electric generating facilities in achieving the state's decarbonization objectives, CARB should extend eligibility for the MDI to in-state electric generating facilities proposing to add CCS to reduce emissions. While Constellation recognizes that natural gas-fired power plants do not currently receive free allocations pursuant to the product-based allocation methodology that the MDI is built upon, CARB could design an analogous approach for gas-fired generators—i.e., by setting a categorical baseline and rewarding emissions performance that exceeds the average. There are a number of potential options for designing a baseline emissions rate for such facilities, and CARB could award allowances from the Build Up California Reserve Account based on the difference between the relevant baseline and the facility's historic or proposed net emissions rate. Constellation would be happy to discuss potential options with CARB. (15d-CELLC-148.3)

Comment:

The MDI is an innovative approach to support decarbonization across a number of critical industrial sectors in the state and the 15-day amendments as proposed rightly acknowledge the role that CCUS can play in these efforts. However, as currently proposed, the MDI does not allow for participation by the electricity generation sector, including natural gas-fired power plants, which the 2022 Scoping Plan identifies as a sector that can benefit from deployment of CCUS technologies to support grid reliability while California works toward decarbonization.

A number of companies and independent power producers are actively investing to deploy CCUS at electricity generating facilities in the state and ensuring that these projects can benefit from the incentives that the MDI is specifically designed to provide is essential. (15d-CCSC-156.2)

Comment:

CARB should extend MDI eligibility to the retrofit of existing natural gas power generation with CCS, including cogeneration. Retrofitting existing natural gas generation with carbon capture represents the largest near-term decarbonization opportunity for CRC and the state. These facilities require capital-intensive, long-cycle investment and will not proceed without a defined incentive and a clear compliance

pathway. As drafted, the MDI does not reach these facilities. Natural gas power generation does not receive industrial allowance allocation under Section 95891(b) or (c), a prerequisite for MDI eligibility under Section 95891(g)(1)(A). The pathway with the greatest near-term potential to decarbonize dispatchable generation therefore sits outside the program — a gap inconsistent with the Scoping Plan's reliance on CCUS at existing fossil-based electric generation to achieve carbon neutrality.6 California's climate planning already relies on this pathway. The 2022 Scoping Plan applies CCS to 16.7 MMT of CO2 from existing fossil gas electricity generation in 2045 to achieve the 85 percent anthropogenic emissions reduction required by AB 1279, and identifies earlier application as additive to those 2045 reductions.7 The California Energy Commission's 2025 SB 100 Joint Agency Report Draft Results carries that direction into resource planning: the Reference portfolio includes 1,600 MW of CCS retrofits, modeled compliant 2045 portfolios select CCS retrofits, and a 15 GW Carbon Capture scenario emerges as the lowest-cost pathway to the state's GHG goals.8 The C&I Program should reflect the same premise: if the state's compliance pathway depends on these retrofits, the state's principal industrial decarbonization incentive should fund them. Closing this gap requires CARB to (i) extend MDI eligibility under Section 95891(g) to retrofits of existing natural gas combined cycle, cogeneration, and peaker facilities that install carbon capture and storage, and (ii) adopt an allocation methodology that delivers the incentive at the capital-formation stage, not after commissioning. An output-based methodology that allocates per MWh of low-carbon generation delivered would credit performance only after CCS becomes operational — too late to underwrite the capital decisions these projects require today. CRC recommends a capacity-based allocation: CARB issues allowances scaled to the host facility's permitted nameplate capacity (MW), conditioned on a binding commitment to commission CCS. This approach front-loads the incentive to the stage where developers need it, scales with the size of the decarbonization opportunity, and uses the same conceptual basis as other Section 95891 industrial benchmarks. This approach scales with the size of the decarbonization opportunity, fits within Section 95891's existing allocation architecture, and avoids the need for a new electricity-sector cap. CRC recognizes this is new methodological work and stands ready to work with staff on baseline determination, benchmark setting, milestone definition, and coordination with existing electricity-sector allocation provisions. Deferring this work to a later rulemaking forecloses the near-term investment window for these retrofits. That window is concrete, not hypothetical. Active development in California now covers approximately 1 GW of natural gas generation with CCS, and Carbon TerraVault's permitted and in-permitting storage portfolio can accommodate sequestration from up to 5 GW of natural gas power generation with CCS. Retrofit candidates lack only a compliance and incentive framework — the framework the MDI provides. Without MDI eligibility and a capital-stage allocation methodology, these retrofits will slip toward the 2040s timeline that the 2022 Scoping

Plan establishes as a floor — foreclosing a decade of earlier emissions reductions and forcing the state to overbuild less-firm resources to fill the gap in the interim. (15d-CRC-161.6)

Agency Response:

No changes were made in response to these comments. See Agency Response to comment O-8.5a.

O-8.6a Comment:

CRC reiterates its position that oil and gas extraction should be eligible for the full range of MDI decarbonization pathways, not only the CCUS pathway under Section 95891(g)(2)(H). The Scoping Plan identifies oil extraction as a sector requiring deep decarbonization. The emissions reduction technologies that could be implemented by extraction operators include electrified equipment, renewable electricity generation and storage, solar thermal and geothermal energy, and electrified thermal energy procurement — each of which is eligible for other industrial sectors under Section 95891(g)(2)(A) through (G). Restricting oil and gas extraction to the CCUS-only pathway excludes a portfolio of lower-cost, nearer-term emissions reduction measures from program support. These measures are the kinds of projects the MDI targets. CARB should remove that restriction and allow extraction operators to apply for MDI support across the full set of eligible pathways. Expanding the MDI in these two respects would accelerate deployment of essential infrastructure, reduce compliance costs over time, mitigate leakage risk, and align regulatory design with CARB's long-term climate modeling. (15d-CRC-161.7)

Agency Response:

No changes were made in response to these comments. The Proposed Amendments provide MDI eligibility for CCUS projects by oil and gas producers, recognizing ongoing investments in the oil and gas sector to deploy nascent CCUS technologies aligned with SB 905 that will be needed to reduce GHG emissions to meet the 2030 and 2045 GHG reduction targets. However, MDI eligibility is not extended to oil and gas producers beyond CCUS projects in order to prioritize MDI allowance value for industrial decarbonization measures aligned with CARB's 2022 Scoping Plan Update. While refineries may invest in modernizing their operations to produce low-carbon fuels, no such option exists for oil and gas producers that draw down fossil fuel resources to meet steadily declining in-state fossil fuel demand. Further, if options do emerge, decarbonization projects in the crude petroleum and natural gas extraction sector are already eligible to be recognized through a reduced carbon intensity and project-based crediting for Innovative Crude investments under the Low Carbon

Fuel Standard Program (LCFS). Further discussions related to the LCFS are beyond the scope of this rulemaking.

O-8.6b Comment:

Good morning, Chair Sanchez and Board members. Thank you for having me this morning. Speaking on behalf of the California Independent Petroleum Association, the small and medium oil producers in-state that are in Kern and LA County primarily. We support the MDI. We support the near-term cost benefits that the additional allocations were given to industry. But to be clear, every time you saw industry on the -- on the slide show, it should say industry asterisk, except for in-state oil and gas -- except MDI, except for in-state oil and gas. And it's perplexing to us that staff went out of their way to exclude the industry that is trying to be in-state, lower fuel costs, prevent leakage, operates under the most stringent rules for production in the world. And when you don't have in-state production, it's an imported product, and that's the definition of leakage. And we know that the flaring of methane around the world is unmatched and doesn't have the regulations that California does. So the ask of the Board is we know that this is probably going to get approved without another amendment. If there was another amendment, we'd love to fix some of these allocation and MDI eligibility considerations. But if not, next time this comes up, we'd like you to direct staff to relook at this, because we believe it's direct leakage and reduce the ability of in-state production to fund the cleaner technology, which they're already working to accomplish. (BH-CIPA-124.1)

Agency Response:

No changes were made in response to this comment. Please refer to Agency Response to comments O-8.6a on extending MDI eligibility to oil and gas producers beyond CCUS projects.

O-8.7a Multiple Comments: MDI eligibility for new facilities

While the GHC understands the current 15-Day Amendments are focused on incentivizing the decarbonization of existing manufacturing processes in California, we would encourage consideration of the program as a vehicle for tackling California's substantial imports of upstream emissions from refined chemicals, like ammonia, into the state. Given the current price volatility from importing fossil-based resources, a sound long-term strategy should be to encourage in-state production that utilizes California's vast renewable and other clean resources. This can be done by creating a dedicated eligibility pathway for new clean manufacturing facilities in strategic, trade-exposed sectors such as ammonia. As currently proposed, the 15-day amendments focus on decarbonizing existing emitting facilities rather than enabling new, low-emissions manufacturing capacity. This is largely because incentives are designed to reduce emissions from existing infrastructure. The current incentive framework is unlikely to support the development of new in-state low carbon ammonia production, a

critical component of California's long-term decarbonization strategy across agriculture, fuels, and energy systems. Thus, the current program structure misses an opportunity to reduce imported emissions while strengthening California's economy.

The proposed current Cap-and-Invest structure would benefit from providing a pathway for green and clean ammonia production. A greenfield ammonia facility that begins operation with near-zero emissions (e.g., using clean and renewable hydrogen) would receive little to no incentive value under the current framework because the state does not have any meaningful in-state ammonia production capacity today. As an agricultural powerhouse, the state imports significant quantities of anhydrous ammonia and ammonia-based fertilizers, all of which are produced from fossil fuels and transported to California without regard for their emissions profile. The Board should consider ways to tackle these imported emissions in their efforts to decarbonize in the Cap-and-Invest program.

Without targeted policy support, California risks continued reliance on imported ammonia in its traditional forms and in maritime shipping, where dual fuel ammonia and methanol ships are already being deployed. Imported fossil-derived ammonia contains embedded carbon emissions and results in significant emissions from its transport to California through diesel and bunker-fueled ships and railcars. Imported fossil-derived ammonia is also subject to significant global price volatility, particularly due to the war in Ukraine and the Middle East, which detriments California farmers and food prices. Producing low carbon ammonia locally can shield California industries and farmers from uncontrolled costs, increasing food security for California and the nation. Producing low carbon ammonia locally will also ensure California has a role in global low carbon maritime shipping, fueling, and trade. (15d-GHC-191.7)

Comment:

GHC recommends the following comprehensive program modification to incentivize new buildouts and tackle imported molecules embedded with significant emissions.
Proposed Program Modification:

Establish a 'new-entrant clean manufacturing' category for facilities producing low carbon ammonia/fuels in California and reserve a portion of manufacturing decarbonization (MDI) incentive value to fund it. Key program rules for this new-entrant manufacturing category could include:

1. Eligibility for new clean manufacturing entities that currently lack in-state production but are critical to California's economy, such as the production of decarbonized, renewable, or low carbon ammonia.

2. Exempt new clean manufacturing facilities from the requirement to have been in operation for two years if the facility demonstrates binding development milestones and commits to meeting a defined lifecycle carbon intensity threshold.

3. Develop an incentive structure based on the carbon intensity of the new in-state production output as compared to the lifecycle carbon intensity of the imported alternative.

4. Allocate allowances per ton of qualifying low carbon ammonia produced. This approach would reward low carbon in-state production while targeting the removal of imported historical emissions associated with the development and transport of these critical imported fuels/products. Without reserving an MDI carveout for new entrants, the available incentive value may be fully absorbed by existing facilities. (15d-GHC-191.8)

Comment:

Confirm through the FSOR or implementation guidance that new facilities commencing covered production during the MDI window are eligible to receive MDI value for their first year of actual production through the new facility true-up mechanism. Revise the MDI expenditure eligibility start date in Section 95891(g)(2) to January 20, 2026. (15d-CLECA-112.3)

Agency Response:

No changes were made in response to these comments. Eligibility for a limited supply of MDI allowances is targeted at unlocking investments in low-carbon production methods and fuels that will accelerate the pace of GHG emissions reductions in industrial sectors, aligned with CARB's 2022 Scoping Plan Update.

In regards to a domestic production versus import-based incentive program, see the Agency Response to comment O-4.1a.

Regarding the MDI eligible expenditures start date, see the Agency Response to comment O-8.2a.

Regarding MDI allocation true-up, see the Agency Response to comment O-8.16.

There are not currently any facilities producing ammonia covered by the Program and thus ammonia production has no production benchmark for product-based allocation. An ammonia production benchmark could be developed in a future rulemaking if such facilities become covered by the Program. To be eligible for MDI allocation, facilities must have at least one year of MRR verified emissions data and be eligible for either energy-based or product-based industrial. A new facility entering the Program without a product benchmark, can receive allocation through the energy-based allocation methodology.

Industrial facilities with annual GHG emissions below 25,000 $MTCO_2e$ with activities listed in Table 8-1 of the Regulation may opt-in to the Program, and provided they have verified emissions data and are eligible for industrial allocation, they may apply for MDI allocation.

Regarding new entrants that utilize low- or no-carbon production methods to produce historically high emission intensity products, the Board directed staff in Resolution 26-7 by July 1, 2030, to evaluate and propose any future amendments, as appropriate, to further support new facilities under the MDI program. The resolution also directs staff to begin the public process, by July 1, 2028, to evaluate and propose future amendments for industrial allocation post-2030. This process will include consideration of MDI investments and alternative, or additional, mechanisms to integrate into the program related to the in-state manufacturing of products in sectors with imports of high carbon products.

O-8.7b Comment:

Good morning, Chair Sanchez and members of the Boards. My name is Tim Kamermayer and I am speaking today on behalf of the Green Hydrogen Coalition in support of the proposed Cap-and-Invest amendments, specifically the low carbon hydrogen purchasing option within the Manufacturing Decarbonization Incentive framework.

GHC appreciates CARB staff's continued engagement throughout this process and the thoughtful the inclusion of mechanisms that recognize the rule of low carbon hydrogen that can play in California's broader decarbonization and reliability goals.

Members, it is often said that for California to reach its SB 100 goals, we're going to need, and some even project - in fact, I believe it's CARB - that we're going to need around 1,700 times the amount of hydrogen supplied to get there. We believe, as noted in our public comments, that the proposed hydrogen purchasing option represents a practical and measured approach to accelerating market development, while ensuring emissions reductions remain the central focus of the Program.

California is going to need portfolio solutions to achieve its climate goals. And in doing that, we must maintain grid reliability and affordability. The reality is that many industries in these sectors, and especially hard to abate, have a very difficult time being able to electrify. Hydrogen represents one of those opportunities to not only decarbonize, but also expand our portfolio.

We believe the MDI sends and important market signal. It helps provide the policy certainty needed to unlock private investment and support State project development, strengthen supply chains, and preserve California's leadership.

While our comments reflect concerns around adding three pillar specific language at a time when the renewable and hydrogen industry is dealing with significant headwinds, we still believe that this proposal, and the resolution, are an appropriate balance between near-term and long-term concerns. Lastly, we would encourage the staff to start considering ways to decarbonize derivative fuels like ammonia and methanol, and other molecules that are traditionally imported into the State, but could be produced cleaner and deeper in California.

Thank you for your consideration and ask that you please support and adopt it. (BH-GHC-118.1)

Agency Response:

No change was made in response to this comment. Staff appreciate the support for the Proposed Amendments. Regarding the decarbonization of derivative fuels like ammonia and methanol, refer to the Agency Response to comment O-8.7a.

O-8.8: Multiple comments: Extend MDI eligibility for projects that reduce process emissions

CMTA supports the concept of a Manufacturing Decarbonization Incentive to encourage on-site emissions reductions. However, the current list of qualifying activities is too narrow to be fully effective for the diversity of industrial operations covered by the program. We recommend that CARB expand the list of qualifying activities to include any project that results in a reduction of process emissions, including raw material or feedstock substitution that reduces emissions intensity. Many manufacturing sectors achieve meaningful emissions reductions not only through equipment electrification or fuel switching, but through innovations in inputs, chemistry, and production design. These strategies should be fully eligible for incentive allocation (45d-CMTA-337.2)

Comment:

CARB should expand the Incentive Allocation for process emissions reductions as a potential decarbonization activity for cement facilities. Current eligible project types that can be financed through the Incentive Allocation include onsite renewable generation, and capital and electricity costs for electrified equipment that reduces or avoids emissions. CARB should consider expanding this list to allow regulated cement facilities to receive incentives for process emissions reductions as a covered decarbonization activity. Given that there are cement production companies and technologies, such as Fortera and LEILAC, that reduce both fuel and process emissions, both types of emissions reductions should be eligible for the incentive to maximize market transformation potential and appropriately address the single largest source of cement emissions. (45d-NRDC-376.10)

Comment:

GPI supports the establishment of a manufacturing decarbonization incentive and the use of a modified CAF as proposed by CARB. However, the list of eligible decarbonization activities is far too narrow to be useful. We urge CARB to adopt an “all options available” approach to reducing carbon emissions while keeping facilities in state and subject to this program. CARB should expand the qualifying activities list to include any project that results in a reduction of process emissions including raw material or feedstock substitution that reduces emissions intensity. A portion of Scope 1 emissions in glass production results from raw materials during melting. These emissions cannot be fully eliminated through fuel switching alone. CARB should consider incentivizing the use of recycled cullet which significantly reduces process emissions. (45d-GPI-238.2)

Comment:

The proposed MDI is structured as a restricted-use incentive tied to a defined set of eligible emissions-reduction activities. Under the Proposed Amendments, facilities receiving MDI allocations must use the value associated with those allowances to support one or more specified categories of greenhouse gas reduction investments at the facility. These categories include the use of exempt biomass-derived fuels for qualifying uses, electrification of equipment that reduces onsite fossil fuel combustion, procurement or use of qualifying low-carbon hydrogen, installation of renewable electricity generation or energy storage that displaces fossil fuel use, renewable thermal energy technologies such as solar thermal or geothermal systems, and electrified thermal energy procurement. While these categories encompass several important decarbonization pathways, they may not capture the full range of emissions-reduction strategies available to many industrial facilities. Industrial decarbonization is highly sector-specific, and facilities often pursue modernization through a combination of process improvements, material substitutions, waste heat recovery, efficiency upgrades, and other operational changes that do not necessarily fit within predefined technology categories. In some sectors, the most effective emissions-reduction strategies involve modifications to production processes or integrated system upgrades rather than discrete equipment substitutions. Because the proposed rule structures eligibility around a defined list of qualifying activities, facilities whose most practical emissions-reduction opportunities fall outside these categories may have limited ability to utilize the incentive. This could reduce the effectiveness of the program by steering investments toward technologies that fit regulatory definitions rather than toward those that produce the most cost-effective emissions reductions for a particular facility. This issue is particularly relevant for sectors with substantial process emissions or complex thermal systems, where decarbonization pathways may involve multiple incremental changes rather than a single identifiable project. Facilities in sectors such as cement, metals

production, refining, glass manufacturing, and other energy-intensive industries often implement emissions reductions through coordinated operational changes across multiple systems. In such cases, the most effective modernization strategies may include process redesign, material efficiency improvements, carbon management, or integrated energy management strategies that do not align neatly with a single eligible activity category. (45d-CCoC-374.11)

Agency response:

Changes were made in response to these comments. The 15-day Amendments add new eligible project categories for the use of MDI value, including the use of alternative materials to reduce process emissions at an eligible facility. This change allows the use of MDI value for capital costs necessary to use alternative materials, provided the facility is using the alternative materials to produce the same covered product identified in Table 9-1, and provided that the use of alternative materials to reduce process emissions can be evaluated relative to the input materials included when the product's benchmark in Table 9-1 was established. This change helps align the MDI program with the 2022 Scoping Plan Update which identified process emissions reductions as a key measure to achieve deep decarbonization for industrial facilities in applicable sectors with a high proportion of process emissions, such as cement production. Since facility process emissions incur a Cap-and-Invest compliance obligation, reducing them through the use of MDI allowance value also helps further minimize emissions leakage risk.

The 15-changes in section 95891(g)(2)(B) also allows eligible manufacturing facility to use the value of manufacturing decarbonization incentive allocation allowances to cover capital costs or electricity costs of new equipment powered by electricity, and associated costs of design, engineering, and permitting necessary to support deployment of the capital, provided that the newly installed equipment results in a reduction or avoidance of onsite fossil fuel combustion.

Regarding MDI eligibility for CCUS projects, see Agency Response to comment O-8.31a.

Regarding general flexibility for MDI project eligibility beyond the categories specified in section 95891(g)(2), see Agency Response to comment O-8.9a.

O-8.9a: Multiple comments: Provide additional flexibility for MDI project eligibility, including for energy efficiency investments

CLFP also supports CARB's proposal to provide an incentive allocation for manufacturing decarbonization projects that reduce GHG emissions and protect against leakage through a manufacturing decarbonization incentive allocation. However, we ask

CARB to also consider that, in most cases, food processing operations cannot be decarbonized while still maintaining economic competitiveness with out-of-state producers, which limits the ability of the manufacturing decarbonization incentive allocation to mitigate the increased leakage risk that would result from CARB's proposed increased Program stringency. Many food processing operations in the State rely on high heat processes, including boilers and dehydrators, that rely on natural gas to reach temperatures required to meet food safety requirements. California currently does not have the energy infrastructure needed to meet the energy needs for its food processing facilities, making it technologically infeasible to achieve meaningful further decarbonization in this sector. It will be years, possibly decades, before the state's electrical grid will generate sufficient electricity and before the state's alternative fuels sectors are able to generate a sufficient and reliable supply to meet this increased demand. It will also likely be decades before the state has constructed the infrastructure needed to distribute the electricity, hydrogen, and biofuel to where it is needed, especially for food processors located in rural areas. Electricity and alternative fuels are also not cost effective because their costs are extremely high compared to the cost of natural gas. For example, the energy cost to operate an electric boiler is eight times higher than the cost to operate a natural gas boiler because of high electricity prices. These challenges significantly limit the ability of food processors to take advantage of CARB's proposed manufacturing decarbonization incentive allocation. Several of the proposed eligible strategies are reliant on the availability of a reliable supply of cost-effective alternative fuels (e.g., procurement of exempt biomass-derived fuels, electrification projects, low carbon hydrogen procurement, procurement of electrified thermal energy). Others, such as renewable energy generation and storage and installation of solar or geothermal are not technologically feasible or cost effective due to the very high energy demand at food processing facilities. CLFP recommends that CARB revise the project types eligible for the proposed manufacturing decarbonization incentive allocation to include projects that are cost effective and technologically feasible without the need for reliable and affordable supply of electricity or alternative fuels. For example, incentivizing projects intended to decrease natural gas consumption by increasing the energy efficiency of natural gas-powered processes could help manufacturers with hard-to-decarbonize processes to reduce their natural gas use. (45d-CLFP-328.3)

Comment:

AECA and Dairy Cares support the concept of the Manufacturing Decarbonization Incentive. However, the current list of eligible activities is too narrow. Food production facilities can achieve processing emission reductions through electrification the of operations or fuel switching, however these opportunities are highly limited due to the high cost of electricity and alternative fuels in the state. For example, converting to

biomethane or other fuels is not cost competitive and therefore unlikely to happen in the highly competitive global food production sector. As a result, the inclusion of the other innovations, inputs or production design should be considered fully eligible for incentive allocation. (45d-AECA+DC-347.2)

Comment:

Finally, Nucor encourages CARB and the Legislature to ensure that the Manufacturing Decarbonization Incentive Allocation remains aligned with real-world industrial operations. There are physical and technical limits to electrification in heavy industry. Steelmaking remains heavily dependent on natural gas, and meaningful near-term emissions reductions often come from energy efficiency improvements and performance upgrades to reduce emissions from existing natural-gas-fired equipment. Nucor strongly encourages CARB to include projects focused on improving the efficiency and emissions performance of gas-fired industrial equipment so they are clearly eligible for this allowance allocation. Excluding or deprioritizing these projects would disadvantage industries for which electrification alone is not a feasible decarbonization pathway and would undermine the effectiveness of the State's overall climate strategy. (45d-Nu-322.3)

Comment:

Providing greater flexibility in how qualifying investments are defined could significantly improve the program's ability to support meaningful industrial decarbonization. One approach would be to supplement the list of eligible activities with a performance-based eligibility provision allowing facilities to use incentive value for any investment that directly reduces covered greenhouse gas emissions at the facility and that can be verified through existing emissions reporting frameworks. Such an approach would preserve the environmental integrity of the program while allowing facilities to pursue the most effective decarbonization strategies for their operations. (45d-CCoC-374.12)

Comment:

SVM also requests CARB to more clearly recognize active decarbonization projects for the Manufacturing Decarbonization Incentive Allocation Program. For example, SVM is working on numerous electrification projects, including electrified industrial fans. With the ability to explore a broader range of decarbonization products through an application process, SVM will be more likely to utilize the Manufacturing Decarbonization Incentive Allocation. Our goal of transitioning high emission-intensity fuel, such as coal, can only be realized if there is certainty for critical minerals produced in California, like boron. Whether through an application process or a technology enumerated in regulation, CARB should make clear the inclusion of industrial thermal and boiler-related pathways within the manufacturing decarbonization provisions. (45d-SVM-386.5)

Comment:

Waste heat recovery (WHR), also known as industrial process heat recovery, is another compelling example of a high-impact, commercially proven decarbonization strategy that should be added to the MDI eligible project list. Similarly, projects that improve the electricity efficiency of motors, pumps, and other large electrical equipment can free up capacity for electrification of other processes. Accordingly, projects that improve electricity efficiency to enable electrification and reduce associated process emissions should also be eligible as MDIs. Projects that improve the fuel efficiency in industrial processes should also be considered for MDI-eligible projects. CLECA recommends expansion of eligible projects under the MDI framework to encompass all material, verifiable, and structurally durable emissions reduction investments, including renewable and biomass fuels procurement and capital upgrades, WHR, and equipment upgrades to enable capital-intensive electricity and fuel efficiency measures. (45d-CLECA-417.8)

Comment:

In addition, decarbonization incentives should extend to enabling infrastructure investments necessary for electrification and measurable emissions reductions. Grid expansion, substation upgrades, and interconnection improvements are often prerequisites to furnace electrification and should be treated as directly enabling decarbonization. (45d-GPI-238.4)

Agency Response:

No changes were made in response to these comments. Eligibility for a limited supply of MDI allowances is targeted at unlocking investments in low-carbon production methods and fuels that will accelerate the pace of GHG emissions reductions in industrial sectors, as aligned with the 2022 Scoping Plan Update. Opening up MDI eligibility to any expenditure that reduces facility GHG emissions risks exhausting available MDI allowances for projects that achieve only marginal reductions, or for energy efficiency investments that have a short payback period and thus do not need support to achieve GHG emissions reductions. Further, relying solely on existing emissions reporting frameworks (i.e., covered emissions reporting under MRR) is not sufficient to determine whether eligible GHG reduction investments have occurred, as facilities could report lower GHG emissions by deliberately lowering production, or could report GHG reductions due to factors outside the facility's control (e.g., a shifting economic environment, or changes in weather that affect heating needs). Reporting specific project details to CARB, within the project eligibility framework established in section 95891(g)(2), is necessary to verify real investments in GHG reduction technologies and fuels due to the use of MDI allowance value.

Regarding eligibility for electric grid or interconnection expenditures, note that the 15-day Amendments in section 95891(g)(2)(B) enable a eligible manufacturing facility to use the value of manufacturing decarbonization incentive allocation allowances to cover capital costs or electricity costs of new equipment powered by electricity, and associated costs of design, engineering, and permitting necessary to support deployment of the capital, provided that the newly installed equipment results in a reduction or avoidance of onsite fossil fuel combustion. Electric infrastructure upgrades undertaken by the facility to enable an on-site electrification project is a capital expenditure that reduces facility fossil fuel combustion under this provision. A waste heat recovery system that is powered by electricity (e.g., a heat pump installation) and is used to reduce facility fossil fuel combustion is also an eligible capital expenditure under this provision.

O-8.9b: Multiple comments: Provide additional flexibility for MDI project eligibility, including for energy efficiency investments

GPI supports the establishment of a manufacturing decarbonization incentive and the use of a modified CAF as proposed by CARB. However, as noted previously, the list of eligible decarbonization activities is too narrow. While GPI appreciates the inclusion of projects associated with the use of alternative materials, we continue to urge CARB to adopt an “all options available” approach to reducing carbon emissions while keeping facilities in state and subject to this program. Any technology that could meaningfully reduce emissions should be considered. At a minimum, CARB should establish a mechanism for facilities to petition for inclusion of additional qualifying project categories on a case-by-case basis. In addition, decarbonization incentives should extend to enabling infrastructure investments necessary for electrification and measurable emissions reductions. Grid expansion, substation upgrades, and interconnection improvements are often prerequisites to furnace electrification and should be treated as directly enabling decarbonization. (15d-GPI-79.2)

Comment:

Nucor also supports the expanded scope and changes to the timeline of the Manufacturing Decarbonization Incentive Allocation, including the addition of new eligible activities such as alternative materials and carbon capture. However, Nucor reiterates the concern raised in its March 9th comments that projects focused on improving the efficiency and emissions performance of natural-gas-fired industrial equipment should be eligible for the MDI. Steelmaking remains heavily dependent on natural gas for core production processes, and meaningful near-term emissions reductions at facilities like CSI are most likely to come from energy efficiency improvements and performance upgrades to existing gas-fired equipment. Excluding

these projects would disadvantage industries for which full electrification is not yet a feasible decarbonization pathway. (15d-N-114.2)

Comment:

CLFP remains concerned that the proposed MDI, even with the improvements CARB made in the April 14 proposal, is still insufficient to effectively incentivize the transition of many natural gas-powered processes in food production facilities to electricity or alternative fuels. The ability of the proposed MDI allocation to minimize emissions leakage risk and to accelerate GHG emissions reductions depends on the ability of covered facilities to cost-effectively implement one or more of the eligible project types. Among other things, this requires facilities to have the physical space needed for renewable power generation, alternative fuel generation and storage, or electricity-powered equipment that is often larger than the natural gas-powered equipment it replaces (for example, high capacity electric boilers and the related components require a bigger footprint than their natural gas counterparts). As explained in our March 9, 2026 comment letter, because the state's utilities are not yet able to ensure the availability of a reliable supply of cost-effective electricity or alternative fuels, the ability of food production facilities to reduce their natural gas usage is limited. In this transitionary period while the state's utilities expand electrical energy and alternative fuel infrastructure and supply, CLFP strongly recommends that CARB expand its focus from projects that fully eliminate usage of natural gas and consider the ability of fuel efficiency improvements to achieve meaningful, near term GHG emissions reductions. For hard-to-decarbonize food processing facilities, revising the eligible project types to include projects intended to decrease natural gas consumption by increasing the energy efficiency of natural gas-powered processes would provide a way for the state to achieve GHG emissions reductions that would otherwise not be realized. We understand that CARB may be hesitant to incentivize projects that assume the continued use of natural gas and suggest that CARB narrowly tailor the fuel-efficiency project type to limit its use to facilities that have limited ability to cost-effectively implement other eligible project types, such as facilities located in areas of the state that lack the infrastructure and reliable supply needed to cost-effectively convert natural gas-powered operations to electricity or alternative fuels. (15d-CLFP-139.3)

Agency Response:

No changes were made in response to these comments. Please refer to Agency Response to comment O-8.9a.

O-8.10 Multiple Comments: Extend MDI eligibility for projects that reduce local air pollutants

Chevron supports CARB's proposed amendments to make petroleum refiners eligible for the Manufacturing Decarbonization Incentive Allocation. Chevron encourages CARB

to expand eligible projects to include equipment which eliminates, reduces or controls the issuance of air pollutants; turnarounds, as defined in Cal. Admin. Code tit. 19, § 5050.3(vvv); and a catch all for any upgrades, additions, or modifications to facilities that reduce GHG emissions, including through the reduction of electricity or natural gas usage by the installation of an energy efficiency measure or the adoption of an energy efficiency practice CARB's authority to include the reduction of air pollutants within the MDI stems from its express directive to consider "overall societal benefits, including reductions in other air pollutants", and to design regulations, "including distribution of emissions allowances where appropriate," in a manner that "maximize[s] the total benefits to California." HSC §§ 38562(b)(1)(A), 38562(b)(6). These provisions, read together with the Legislature's mandate to analyze and prevent increases in air pollutants (HSC § 38570(b)), establish a statutory foundation for CARB to consider air pollutant impacts when operating the C&I program generally, and the issuing of allowances through the MDI specifically. Given the long planning horizons for refinery investments and the short-term allocation framework contemplated in the proposed amendments, CARB should allow eligible expenditures completed in 2026 to qualify for incentive allocations. (15d-CUSAI-62.4)

Comment:

Expanding eligibility for broader emissions reductions: CARB should expand MDI allocation eligibility by adding an option for facilities to apply for air quality impact projects that reduce emissions of GHG precursors, rather than focus solely on global GHG emissions. Under AB 32, CARB is required to "[d]esign any market-based compliance mechanism [for carbon trading] to prevent any increase in the emissions of toxic air contaminants or criteria air pollutants." This statutory requirement reflects the Legislature's intent that market-based GHG programs be structured to avoid increases not only in GHGs but also in emissions of GHG precursors. Consistent with this requirement, on October 10, 2011, CARB released a draft Adaptive Management Plan to develop a "process of information gathering, review and analysis, and response that promotes flexible agency decision-making" to ensure that this AB 32 directive would be achieved. This subsequently gave rise to the adoption of AB 617, the Community Air Protection Program, which reinforced the need to ensure that GHG reduction strategies do not result in increased emissions of GHG precursors. Focusing the MDI allocation solely on global GHG emissions would preclude recognition of projects that advance broader emissions-reduction objectives under AB 32, including refinery projects such as turnarounds and other operational improvements that reduce emissions of GHG precursors while supporting compliance objectives.

Local air quality improvement projects achieve real, in-state emissions reductions in support of California's decarbonization strategies, community emission reduction programs under AB 617, and the provision of lower-carbon fuels. Allowances for these

projects could also assist in managing rising compliance costs while supporting in-state operations for California's highly trade-exposed entities, such as refineries and upstream production, and provide leakage protection for regulated entities that invest in California industrial facility projects, consistent with legislative direction. Accordingly, CARB should expand MDI allocation eligibility by adding an option for facilities to apply for air quality impact projects, consistent with AB 32 and CARB's integrated emissions-reduction framework. (15d-WSPA-164.7)

Comment: Chevron supports CARB's proposed amendments to make petroleum refiners eligible for the Manufacturing Decarbonization Incentive Allocation. Chevron encourages CARB to expand eligible projects to include equipment which eliminates, reduces or controls the issuance of air pollutants; turnarounds, as defined in Cal. Admin. Code tit. 19, § 5050.3(vvv); and a catch all for any upgrades, additions, or modifications to facilities that reduce GHG emissions, including through the reduction of electricity or natural gas usage by the installation of an energy efficiency measure or the adoption of an energy efficiency practice CARB's authority to include the reduction of air pollutants within the MDI stems from its express directive to consider "overall societal benefits, including reductions in other air pollutants", and to design regulations, "including distribution of emissions allowances where appropriate," in a manner that "maximize[s] the total benefits to California." HSC §§ 38562(b)(1)(A), 38562(b)(6). These provisions, read together with the Legislature's mandate to analyze and prevent increases in air pollutants (HSC § 38570(b)), establish a statutory foundation for CARB to consider air pollutant impacts when operating the C&I program generally, and the issuing of allowances through the MDI specifically Given the long planning horizons for refinery investments and the short-term allocation framework contemplated in the proposed amendments, CARB should allow eligible expenditures completed in 2026 to qualify for incentive allocations. (15d-CUSAI-62.4)

Comment: Expanding eligibility for broader emissions reductions: CARB should expand MDI allocation eligibility by adding an option for facilities to apply for air quality impact projects that reduce emissions of GHG precursors, rather than focus solely on global GHG emissions. Under AB 32, CARB is required to "[d]esign any market-based compliance mechanism [for carbon trading] to prevent any increase in the emissions of toxic air contaminants or criteria air pollutants." This statutory requirement reflects the Legislature's intent that market-based GHG programs be structured to avoid increases not only in GHGs but also in emissions of GHG precursors. Consistent with this requirement, on October 10, 2011, CARB released a draft Adaptive Management Plan to develop a "process of information gathering, review and analysis, and response that promotes flexible agency decision-making" to ensure that this AB 32 directive would be achieved. This subsequently gave rise to the adoption of AB 617, the Community Air Protection Program, which reinforced the need to ensure that GHG reduction strategies

do not result in increased emissions of GHG precursors. Focusing the MDI allocation solely on global GHG emissions would preclude recognition of projects that advance broader emissions-reduction objectives under AB 32, including refinery projects such as turnarounds and other operational improvements that reduce emissions of GHG precursors while supporting compliance objectives.

Local air quality improvement projects achieve real, in-state emissions reductions in support of California's decarbonization strategies, community emission reduction programs under AB 617, and the provision of lower-carbon fuels. Allowances for these projects could also assist in managing rising compliance costs while supporting in-state operations for California's highly trade-exposed entities, such as refineries and upstream production, and provide leakage protection for regulated entities that invest in California industrial facility projects, consistent with legislative direction. Accordingly, CARB should expand MDI allocation eligibility by adding an option for facilities to apply for air quality impact projects, consistent with AB 32 and CARB's integrated emissions-reduction framework. (15d-WSPA-164.7)

Comment: RFG supports CARB's decision to extend MDI allocation eligibility to transportation fuel refineries and associated sectors, which is a significant and welcome change from the 45-day proposal that excluded these industries. Pursuant to its statutory directives to "maximize the total benefits to California"; to "not disproportionately impact low-income communities"; and to consider "overall societal benefits, including reductions in other air pollutants," RFG encourages CARB to further strengthen this provision by including, as eligible under the MDI, recently completed projects (i.e., those starting in 2025) and projects that reduce the emission of air pollutants. (15d-RFG-189.5)

Agency Response:

No changes were made in response to these comments. CARB staff appreciates the support for MDI projects at petroleum refineries, and notes that MDI is designed to reduce GHG emissions in industrial sectors in support of the 2030 and 2045 GHG reduction targets. Many MDI eligible projects are expected to have additional environmental benefits, including reductions in local air pollution through reduced combustion of fossil fuels and direct regulation of local air pollutants at stationary facilities is not the objective of the Program or of the Proposed Amendments. Regulation of local air pollutants is under the purview of local air districts, MDI project expenditures are only eligible if they occur on or after September 1, 2026, the anticipated effective date of the Regulation which supports new projects that further reduce GHG emissions beyond what has already occurred in the Program.

Regarding “early action” investments occurring prior to the September 1, 2026, effective date for MDI-eligible project spending, see Agency Response to comment O-8.2a.

Regarding the use of MDI allowance value for energy efficiency projects or other technologies not listed in section 95891(g)(2)(A)-(H), see Agency Response to comment O-8.9a.

O-8.11 Multiple Comments: Broaden or clarify the scope of eligible MDI project expenditures

Broaden qualifying expenditures to include the full range of costs directly attributable to planning, developing, implementing, and operating eligible projects — including capital expenditures for supporting infrastructure, pre-investment activities (such as engineering studies and permitting), and front-end engineering design. (45d-CSCME-352.11)

Comment:

One factor that may influence the practical usability of the incentive is how CARB interprets the types of expenditures that qualify as spending on eligible activities. Industrial decarbonization projects typically require substantial upfront project development work before physical equipment can be installed. These efforts often include engineering design, feasibility studies, environmental review, permitting work, equipment procurement planning, and other technical analyses necessary to implement major facility modifications. These expenditures are integral components of implementing emissions-reduction investments and are commonly treated as capital project development costs within industrial investment planning. For this reason, CARB should clarify that reasonable project development expenditures directly associated with eligible decarbonization investments, such as engineering studies, design work, environmental review preparation, permitting activities, and equipment procurement commitments, qualify as spending on eligible greenhouse-gas-reduction activities. These types of expenditures should not be categorized as administrative or overhead costs when they are directly tied to the development and implementation of qualifying emissions-reduction projects. Providing this clarification would better align the program with the realities of industrial capital planning. Large industrial modernization projects often require several years of engineering, environmental review, and procurement planning before equipment installation can begin. Recognizing these activities as legitimate project expenditures would ensure that facilities can use the incentive in a manner consistent with the development timelines of complex decarbonization investments. (45d-CCoC-374.14)

Comment:

The program should support both operational and procurement strategies and capital investments that enable facilities to fundamentally transform their energy systems...To build on this foundation and ensure these emissions reductions are durable and scalable, CARB should also expand eligibility to include the capital investments and infrastructure upgrades that enable facilities to procure and utilize biomass fuels on a sustained, long-term basis. Specifically, MDI eligibility should be extended to cover on-site equipment upgrades necessary to handle, process, and combust biomass fuels, as well as investments that strengthen the biomass supply chain. (45d-CLECA-417.6)

Agency Response:

Changes have been made in response to these comments. The costs of design, engineering, and permitting necessary to support capital investments for eligible projects have been added as eligible uses of MDI value in the 15-day Amendments. These costs are directly necessary and relevant to deploying technically complex capital improvements at an industrial facility and are therefore within the scope of expenditures intended to be incentivized through MDI allocation, provided that the newly installed equipment results in a reduction or avoidance of onsite fossil fuel combustion.

It should also be noted that nothing in the requirements prevents a facility from submitting multiple approaches simultaneously.

O-8.12 Multiple Comments: More flexibility for MDI application approvals

In addition, CARB should establish a formal mechanism for facilities to petition for inclusion of additional project types on a case-by-case basis. This would allow the program to adapt to emerging technologies and sector-specific decarbonization pathways, ensuring that the incentive remains flexible, technology-neutral, and innovation-oriented. (45d-CMTA-337.5)

Comment:

Given the complexity and diversity of products in the “hard-to-decarbonize” sector, CARB should provide itself with the ability to review novel technologies for manufacturing incentive allocation. The Low Carbon Fuel Standard Tier 2 Application process is an example of how CARB could transparently and fairly review applications for a diverse array of technologies and products. (45d-SVM-386.3)

Comment:

Food production and other manufacturers should also be able to petition for new technologies as they emerge. (45d-AECAAECADC-347.6)

Comment:

The ISOR discussion of MDI indicates that eligible projects include defined categories of emissions-reduction investments. While the current regulatory draft references eligible project descriptions and cost estimates, the structure reads as oriented toward discrete project approvals. In practice, industrial decarbonization rarely occurs through a single measure. A cement facility may need to combine clinker substitution, alternative fuels, waste heat recovery, electrified grinding systems, and eventual carbon capture. A refinery may integrate hydrogen blending, heater electrification, efficiency retrofits, and CCUS across multiple units. Requiring separate approval for each component can slow modernization and increase administrative friction. We recommend amending §95891(g)(6) to allow submission and approval of a facility-level decarbonization strategy that encompasses multiple coordinated projects. Proposed insertion: “A facility may submit for approval a comprehensive decarbonization strategy encompassing multiple projects and measures. Upon approval by the Executive Officer, expenditures undertaken pursuant to the approved strategy shall be eligible for manufacturing decarbonization incentive allocation without requiring separate approval for each discrete project, provided that all expenditures are documented and meet the emissions-reduction criteria of this subsection.” This amendment recognizes that industrial modernization is often iterative and integrated. It reduces administrative overhead and allows facilities to optimize investments holistically. This is consistent with the program’s purpose. It does not expand emissions credit beyond real reductions. It simply allows facilities to organize their capital planning in a manner consistent with engineering and financial realities. (45d-CBC-446.10)

Agency Response:

No changes were made in response to these comments. The MDI allocation proposal is designed to target scarce MDI allowances in the Build Up California Reserve Account toward industrial decarbonization projects aligned with measures identified in CARB’s 2022 Scoping Plan Update as needed to achieve the 2030 and 2045 GHG reduction targets. Section 95891(g) in the Proposed Amendments also sets objective criteria for identifying eligible projects submitted to CARB in MDI applications, and rigorous evaluation criteria to ensure MDI allowance value is only used for eligible project types.

Further, new text was added in the 15-day Amendments to provide additional clarification on the application and review process of the MDI. To apply for the MDI, entities are required to submit application packages, including description of allowable activity, expected annual reductions of combustion GHG emissions and process GHG emissions once the project is implemented, and corresponding projected changes in the facility’s fuel uses. One application can include multiple projects if all the required information for all eligible expenditures is included,

which will be reviewed and approved by the Executive Officer if all requirements are met.

Board Resolution 26-7 directs the Executive Officer to hold at least one public workshop on the implementation of the MDI program prior to the issuance of any MDI allowances, and to report to the Board and evaluate and propose, as appropriate, future amendments to the MDI program prior to receipt of MDI applications and issuance of any MDI allowances. Future changes to criteria or eligible project categories for MDI application approval may be considered as part of that public process.

O-8.13 Comment:

Replace recurring applications for Manufacturing incentive allocation with durable, one-time eligibility. The existing return-of-allowances mechanism provides sufficient accountability to ensure that MDI value is used as intended without requiring facilities to re-establish eligibility each compliance period. (45d-CSCME-352.9)

Agency Response:

No changes have been made in response to this comment. An approved MDI application establishes eligibility for a facility to receive a Cap Adjustment Factor Modifier of up to 0.8 for the duration of a compliance period. The facility receiving MDI allowances pursuant to this provision does not need to reapply in the subsequent compliance period unless the facility is seeking additional MDI allowances to cover the value of expenditures that are eligible pursuant to section 95891(g)(2). Compliance period application cycles are necessary to ensure oversight of MDI usage and for CARB to review facility spending proposals in advance, monitor project progress if additional MDI allowances are sought for the same GHG reduction project, and ensure the pool of available MDI allowances is distributed fairly across eligible facilities and not released to the market all at once.

O-8.14a Multiple comments: Additional approval criteria or prioritization for MDI applications

Ensure that California's food processing sector, on which the state's agricultural communities critically depend, is explicitly included among the priority beneficiaries of the decarbonization pathways this program seeks to open. (45d-RE-375.7)

Comment:

BAC urges CARB to prioritize the issuance of allowances for manufacturing sectors that use bioenergy to decarbonize. That includes biogas (including the biogas from biomass gasification), biomethane, bio-oil, and biogenic hydrogen generated from organic waste. These should be the highest priority since they are the only decarbonization options that

reduce Short-Lived Climate Pollutant emissions as required by SB 1383. As CARB has stated many times, SLCP reductions are among the most urgent measures because they benefit the climate right away and buy time while other measures begin to take effect. According to CARB's annual reports to the Legislature, the state's investments in bioenergy programs are also the most cost-effective of all the state's climate investments. SLCP reductions also benefit public health by reducing methane and black carbon emissions, two harmful air pollutants. The United Nations Environment Program has underscored these benefits, stating that "Cutting methane is the strongest lever we have to slow climate change over the next 25 years and complements necessary efforts to reduce carbon dioxide. The benefits to society, economies, and the environment are numerous and far outweigh the cost." For all these reasons, BAC supports the issuance of allowances to decarbonize manufacturing and industrial sectors and urges CARB to prioritize allowances for facilities that use bioenergy from organic waste to decarbonize. Doing so will provide the greatest climate and public health benefits. (45d-BAC-349.2)

Comment:

Given a limited number of allowances, California should also seek to prioritize projects that have the most systemic and catalytic benefits beyond the individual project, including through the demonstration of new technologies and required publication and sharing of lessons. Furthermore, use of state resources should also be structured so as to 1) entail a competitive bidding and application process (e.g. through a reverse auction) targeting cost-effective and "additional" emissions reductions, which require the added financial support; 2) maximize leverage from the private sector given the limited budgets relative to the potential need; and 3) work in a complementary manner with the carbon price by promoting cost-effectiveness and technology neutrality. In this respect, California could consider contracts-for-difference as a potential approach. Governments are using these contracts with companies to backstop the functioning of carbon markets by guaranteeing a minimal carbon price signal to derisk large-scale private investments in the face of carbon market uncertainties. Recent examples of such contracts to spur industrial decarbonization include the Canada Growth Fund (https://cdev.gc.ca/canada-growth-fund-inc/) and Germany's Federal Ministry for Economic Affairs and Energy (https://www.klimaschutzvertraege.info/en/home). There are several important design features, as described by Look et al (2025). (15d-Lubowski-89.6)

Agency Response:

No changes were made in response to these comments. By design, the Program offers the flexibility for covered entities to seek out and implement the lowest cost options to comply, such as by reducing GHG emissions at their own facilities, trading allowances and offset credits with other firms, and purchasing allowances at auction, depending on decarbonization technology costs, technology readiness, and a variety of facility-specific considerations. Based on this

principle, eligible industrial facilities have multiple decarbonization options and may prioritize projects that are suitable for them.

The MDI allocation proposal is inherently structured to facilitate cost-effective emissions reductions, because facilities benefit for each ton of avoided GHG emissions covered by the Cap-and-Invest Program. Thus, no further design mechanisms or prioritization criteria to facilitate cost-effectiveness are needed. By providing a prescribed list of eight MDI-eligible project categories in section 95891(g)(2), facilities have the flexibility to choose cost-effective projects that match their operational needs and can be financed with private capital. Many of these project categories also support other critical decarbonization strategies, such as scaling low-carbon hydrogen use, CCUS projects aligned with SB 905, or biomass-derived fuels use that reduces methane emissions in support of SB 1383 targets. All the project categories listed in section 95891(g)(2) support deep decarbonization of industrial manufacturing in line with CARB's 2022 Scoping Plan Update, while minimizing emissions leakage risk. And emissions reductions achieved through the MDI program will be verified through MRR and through post-compliance period reporting requirements on the use of MDI allowance value, including documentation supporting project cost claims.

Note also that MDI allowance availability is split into two pools – one for refineries, hydrogen production, and related transportation fuel sectors, and another for all other industrial manufacturing sectors – which helps ensure that all eligible sectors, including food processors, will have an opportunity to receive MDI allocation to help facilitate GHG reduction projects and further mitigate emissions leakage risk.

Regarding the "contracts for difference" approach, note that the final MDI allocation proposal works by providing eligible facilities with a flat CAF modifier of up to 0.8 (facilities are free to request a lower CAF modifier) which is applied when calculating the facility's standard industrial allowance allocation pursuant to section 95891(b) or (c). This approach streamlines implementation of the MDI program as it does not require new administrative infrastructure or account types for CARB or eligible facilities, nor does it require establishing complex facility production cost baselines that would need to be established to determine the "difference" in costs facilitated by the use of MDI allowance value. This approach also improves certainty for the release of MDI allowances from the Build Up California Reserve Account as it sets an upper bound on the total MDI-eligible project costs that may be covered by an approved MDI application, and it encourages facilities to find the most cost-effective MDI-eligible projects that are viable for their operations.

Board Resolution 26-7 directs the Executive Officer to hold at least one public workshop prior to the issuance of any MDI allowances, and evaluate and propose, as appropriate, future amendments to the MDI program prior to receipt of MDI applications. Further, by July 1, 2030, CARB staff will evaluate and propose future amendments, as appropriate, that would ensure that the MDI program supports projects in need of financial incentives to proceed. Any additional parameters to strengthen the MDI program in a future rulemaking may be considered as part of that public process.

O-8.14b Multiple Comments: Additional approval criteria or prioritization for MDI applications

Comment:

Given a limited number of allowances, California should also seek to prioritize projects that have the most systemic and catalytic benefits beyond the individual project, including through the demonstration of new technologies and required publication and sharing of lessons. Furthermore, use of state resources should also be structured so as to 1) entail a competitive bidding and application process (e.g. through a reverse auction) targeting cost-effective and "additional" emissions reductions, which require the added financial support; 2) maximize leverage from the private sector given the limited budgets relative to the potential need; and 3) work in a complementary manner with the carbon price by promoting cost-effectiveness and technology neutrality.

In this respect, California could consider contracts-for-difference as a potential approach. Governments are using these contracts with companies to backstop the functioning of carbon markets by guaranteeing a minimal carbon price signal to derisk large-scale private investments in the face of carbon market uncertainties. Recent examples of such contracts to spur industrial decarbonization include the Canada Growth Fund (https://cdev.gc.ca/canada-growth-fund-inc/) and Germany's Federal Ministry for Economic Affairs and Energy (https://www.klimaschutzvertraege.info/en/home). There are several important design features, as described by Look et al (2025). (15d-Lubowski-89.6)

Comment:

Link support more directly to emissions reductions. As currently structured, the MDI resembles a capital expenditure reimbursement program: firms receive additional allowances based on qualifying investments. This risks directing resources toward projects that are not cost-effective or that would have proceeded absent support. Tying support more directly to verified emissions reductions would better align incentives with the program's core objective and improve cost effectiveness. (15d-Fowlie-16.2)

Comment:

Introduce competition or performance-based incentive allocation. Rather than relying solely on administrative criteria, CARB could incorporate competitive or scoring mechanisms that prioritize projects delivering greater emissions reductions per dollar of support. This would help target limited resources toward higher-impact opportunities. (15d-Fowlie-16.3)

Agency Response:

No changes were made in response to these comments. Please refer to Agency Response to comment O-8.14a. The MDI allocation proposal is based on the Program's existing framework to incentivize industrial decarbonization while balancing GHG reduction targets, emissions leakage and affordability. As stated in the ISOR, staff are in the process of evaluating leakage risk and potential additional measures to reduce leakage risk for covered industrial sectors. Recommendations from the AB 398 evaluation for any new or revised leakage risk assessments or additional measures from that evaluation may inform future rulemakings. CARB will also continue working with other agencies such as the California Energy Commission (CEC) that are responsible for providing financial support for decarbonization projects to bring about synergy to accelerate commercialization.

O-8.14c Multiple comments: Additional approval criteria or prioritization for MDI applications

I want to compliment you. MDI I think is an important, creative mechanism which we enthusiastically support...First of all, carbon dioxide removal. I want to remind everybody that there's a seven million metric ton target by 2030. So -- and I should also say what's in CDR what we're going to find out soon as the SB 905 process has started. I think these should be linked and specifically we'd recommend that MDI have some percentage of it be dedicated to CDR projects in California to get that whole industry moving within the state. Our second is on industrial heat decarbonization, which is a significant amount of the inventory. Replacing natural gas with renewable electricity requires two things. First, the electricity has to be competitively repriced with natural gas. And the good news there is both the Legislature, the agencies, as well as several of the municipal utility districts are all working on coming up with ways, so that where there's low demand for electricity, it can be supplied for this purpose. The second thing is it needs to have an incentive to have industries convert. And that's where MDI comes in. It can be the opportunity to be able to get people to move, and that includes 617 neighborhoods and people in the front-line communities, because it will eliminate both natural gas combustion as well as air quality benefits. In conclusion, we think Dr. Steve, the Executive Officer, should have the ability to compare projects, identify those that

have the greatest impact, in terms of air quality benefits and cost per ton. (BH-P2030-158.1)

Comment:

Evaluate Emission Reduction and Removal Projects on Cost-Effectiveness and Scoping Plan Alignment. Project 2030's primary request is that CARB evaluate MDI applications not just on whether they meet eligibility criteria, but on how cost-effectively they reduce or remove emissions and how meaningfully they advance California toward its 2045 goals. Not all projects that reduce emissions are created equal. Some will prove out technologies that can scale and transform whole sectors; others will deliver incremental reductions that, while valuable, do not move the needle on the systemic transformation we need. Because the value of MDI allowances ultimately belongs to all Californians, we believe CARB has both the authority and the responsibility to direct these resources toward strategic and highest-impact investments. (BH-P2030-39.2)

Comment:

A Dedicated CDR Floor: Ensuring the MDI Delivers on Removal Targets. We urge CARB to designate a minimum percentage of approved MDI allowance value specifically for carbon dioxide removal investments. There is currently no natural market driver compelling California's covered industries to invest in the State's much-needed carbon removal. Without a deliberate incentive like the MDI with a CDR floor, CDR investment dollars are likely to flow outside of California — and California would forfeit both an estimated $7 billion CDR market opportunity and the co-benefits that come with it, including integration with wildfire mitigation, soil health, agricultural waste management, and methane reduction. A dedicated floor would send a durable and predictable market signal to project developers and investors, while helping CARB demonstrate concrete progress toward Scoping Plan removal targets. It is also fiscally defensible. While GGRF programs provide a variety of benefits, if we were to narrowly measure them on GHG reductions, they would average approximately $1,268 per ton of CO_2 reduced, while many CDR pathways today cost 50% to 80%lower. The MDI can help CDR get further down the learning curve closer to a $100 per ton target price. The measure of success for the MDI should be driving emissions as low as possible across the industrial sector while establishing the CDR infrastructure needed to address the remaining gap — the 15% that only CDR can resolve. (BH-P2030-39.3)

Agency Response:

No changes were made in response to these comments. Staff appreciates commentor's support for Proposed Amendments.

Regarding cost-effectiveness of GHG projects funded with MDI allowance value, see Agency Response to comment O-8.14a.

Regarding the use of MDI allowance value for projects that reduce local air pollution, see Agency Response to comment O-8.10.

Regarding industrial electricity rates and CPUC collaboration, see Agency Response to comment O-8.34.

Regarding the proposal to reserve a designated portion of MDI allowance value to fund carbon dioxide removal projects, note that these projects are only MDI-eligible if they meet the criteria of a Board-approved quantification methodology, pursuant to SB 905, which is contingent on its incorporation into the Cap-and-Invest Regulation in a separate rulemaking. The eight eligible MDI project categories specified in section 95891(g)(2)(A)-(H) of the Proposed Amendments support a range of potentially viable industrial decarbonization technologies that are aligned with the deep decarbonization measures for industrial manufacturing in the 2022 Scoping Plan Update. CARB is not reserving a particular pool of MDI allowances for any of these technologies in this rulemaking because facilities are incentivized to identify and deploy the most cost-effective option that meets facility-specific needs and circumstances.

Board Resolution 26-7 directs the Executive Officer to hold at least one public workshop prior to the issuance of any MDI allowances, and evaluate and propose, as appropriate, future amendments to the MDI program prior to receipt of MDI applications. Further, by July 1, 2030, CARB staff will evaluate and propose future amendments, as appropriate, that would ensure that the MDI program supports projects in need of financial incentives to proceed and prioritizes eligible project types that could achieve both GHG and criteria and/or air toxics pollution benefits and/or other co-benefits including workforce transition. Any additional parameters to strengthen the MDI program in a future rulemaking may be considered as part of that public process.

O-8.15a Comment:

Preserve and redeploy unused MDI allowance value through a dedicated redeployment pool rather than permanently removing it from the program. Allowance value that remains unused after reasonable redeployment opportunities are exhausted should ultimately be returned. (45d-CSCME-352.15)

Agency Response:

No changes were made in response to this comment. MDI allocation is only offered for budget years 2028-2035 pursuant to section 95891(g). Given the six- to seven-year spending deadline after the budget year of the allowances, any MDI allowances that are provided to eligible facilities and not used for an eligible project would only be returned to CARB near or after the end of this eligibility

window. Further, MDI allocation is intended to support near-term facility GHG reduction projects. Extending MDI allocation beyond 2035 due to reintroduction of any returned allowances may discourage early action to invest in eligible projects, because MDI allowances may continue to be available far into the future. Limiting MDI allocation to the prescribed time window of 2028-2035 recognizes the need for increased near-term support in light of economic uncertainty and lost federal incentives, and the accelerated GHG reductions needed to meet the 2030 and 2045 GHG reduction targets in light of potential delays in reductions for other sectors due to federal actions.

O-8.15b Comment:

CLFP also supports CARB's modified proposal to provide a manufacturing decarbonization incentive (MDI) allocation to mitigate emissions leakage risk while simultaneously accelerating GHG emissions at covered facilities by incentivizing long-term emissions reductions that facilities could not implement without additional financial support. We also support CARB's proposal to fund the MDI allocation through a new Manufacturing Decarbonization Incentive Fund (Fund) that is funded with 118.3 million allowances removed from the total Program budget. This is a significant improvement to the 45-day proposal to draw MDI allowances from future vintage years. This modified proposal allows CARB use available allowances to further increase near-term GHG emissions reductions and reduce emissions leakage risk, while still increasing the stringency of the Program by reducing the total Program budget.

We question, however, the reasoning for and utility of CARB's proposal to retire an MDI allowances that are returned to CARB because the allowance value did not achieve GHG emissions reductions. Retirement of returned MDI allowances unnecessarily reduces the ability of the MDI to accelerate GHG emissions reductions by reducing the available incentive pool. We ask CARB to consider amending the proposal to instead return those allowances to the Fund to make them available to incentivize and accelerate other decarbonization projects.

We appreciate CARB's expansion of the eligible project types to include carbon capture, utilization, and storage (CCUS) projects, and the proposal to allow the MDI allocation value to be used for not just capital costs for several project types (electrified equipment, renewable electricity generation or storage, solar thermal or geothermal generation, and CCUS), but also for costs of design, engineering, and permitting. We also appreciate CARB's clarification that the MDI allocation value may be used to cover capital costs to enable the use of exempt biomass-derived fuel, and we encourage CARB to similarly clarify that the value of MDI allocations may to be used to cover capital costs to enable the use of low-carbon hydrogen. (15d-CLFP-139.2)

Agency Response:

No changes were made in response to this comment. CARB appreciates the commenter's support for the updated MDI allocation proposal.

Regarding the treatment of unused MDI allowances returned to CARB, see Agency Response to comment O-8.15a.

Under section 95891(g)(2)(C) of the Proposed Amendments, eligible facilities may use MDI allowance value to procure low-carbon hydrogen fuel that reduces facility fossil fuel use. This provision does not extend eligibility for the use of MDI allowance value to cover capital costs for enabling the use of low-carbon hydrogen. This distinction prioritizes addressing the cost-premium for procuring low-carbon hydrogen instead of a fossil fuels to incentivize the deployment of low-carbon hydrogen use at industrial facilities. Capital costs to enable hydrogen use alone are not sufficient to ensure GHG emissions reductions from the use of MDI allowance value and thus changes were not made to include them.

Board Resolution 26-7 directs the Executive Officer to hold at least one public workshop on the implementation of the MDI program prior to the issuance of any MDI allowances, and to report to the Board and evaluate and propose, as appropriate, future amendments to the MDI program prior to receipt of MDI applications and issuance of any MDI allowances. Any changes to the use of MDI allowance value for low-carbon hydrogen, including eligibility criteria for capital costs, may be considered as part of that public process.

O-8.16 Comment:

We also recommend avoiding a post-hoc true-up mechanism, which can disrupt the timing and lender comfort in capital-intensive transition activities. Improved alignment between the timing of emissions reductions and the availability of an alternative CAF would help encourage early, good-faith action. (45d-SVM-386.4)

Agency Response:

Changes were made in response to this comment. The CAF Modifier no longer applies to the true-up portion of industrial allocation. This change addresses the uncertainty highlighted by the comment, administrative complexity and the two-year delay between when a facility receives an initial industrial allocation for a given production year and when it receives its true-up allocation for that year. In considering this comment and the true-up mechanism further, staff realized the mechanism could conceivably produce a negative true-up, which would be counter to the purpose of the MDI allocation. Therefore, staff removed the true-up mechanism and instead created a separate supply for the MDI allocation in the 15-day Amendments. This change also removes the possibility of a negative

true-up for MDI allocation, ensuring that the full value of MDI allowances received by a facility is understood upfront, providing the certainty needed to facilitate private investments in capital-intensive decarbonization technologies.

O-8.17a Multiple Comments: MDI CAF modifier

Invert the MDI modifier structure so that the higher modifier currently assigned to standard industries applies to industries classified as difficult to decarbonize, and vice versa. The current structure directs less investment support to the industries with the greatest decarbonization challenges — an inversion that is inconsistent with the MDI's stated purpose and conflates leakage protection with investment support. (45d-CSCME-352.12)

Comment:

Clarification of Cap Adjustment Factor Modifier: Additional clarity in the rule language may be necessary to clearly distinguish the assignment of the Cap Adjustment Factor Modifier and the Alternative Cap Adjustment Factor Modifier with reference to the columns in Table 9-2. We encourage CARB to provide illustrative examples in guidance documents that accompany the final rule to reduce ambiguity in compliance planning. (45d-RE-375.3)

Comment:

MDI should not operate independently of CAF and leakage classification. Where sectors experience measurable production decline or facility closure, MDI should function as an enhanced retention tool. We recommend adding language linking MDI modifier values or prioritization to sectors classified as high leakage risk pursuant to the objective leakage metrics described earlier. Suggested addition: "Facilities within sectors classified as High Process Emissions/High Leakage Risk pursuant to Section [CAF safeguard subsection] shall receive priority review of manufacturing decarbonization incentive applications and may receive enhanced allocation modifiers consistent with maintaining in-state production capacity." This integrates MDI into the broader leakage-risk safeguard architecture rather than treating it as a standalone incentive. (45d-CBC-446.11)

Comment:

The Proposed Amendments establish a two-tiered CAFM structure for the MDI: facilities on the standard CAF receive an MDI modifier beginning at 1.2 in 2027, while facilities on the alternate CAF receive a modifier beginning at 0.6. The rationale is that facilities on the standard CAF face a steeper allocation decline and therefore warrant stronger decarbonization incentives from the MDI.

PSG respectfully disagrees with this structure, for reasons that go to the heart of the MDI's purpose. The MDI modifier should reflect leakage risk, not the rate of allocation decline. These are related but distinct considerations. A sector on a steep allocation decline trajectory faces greater program stringency — but that does not necessarily mean it faces the greatest competitive pressure to relocate production. Conversely, a sector on the alternate CAF trajectory may face significant leakage risk warranting strong MDI incentives even though its allocation declines more slowly. (45d-PSG-107.10)

Agency Response:

Changes were made in response to these comments. The 15-day Amendments further clarify the Cap Adjustment Factor Modifier, which is used to determine MDI allocation for eligible facilities pursuant to section 95891(g). MDI allocation is now determined by a single Cap Adjustment Factor Modifier for all eligible sectors rather than a differentiated Alternate Cap Adjustment Factor Modifier for facilities that receive the Alternate CAF in Table 9-2.

The updated CAF modifier is set at a flat 0.8 in place of the CAF modifier schedule in Table 9-2a of the 45-day proposal that varied by budget year and sector. CARB staff project that, if future industrial production is maintained at 2024 levels, the flat CAF modifier of 0.8 provides all eligible facilities with the opportunity to receive MDI allocation over multiple compliance periods, beginning with the partial compliance period represented by budget year 2028. The flat CAF modifier is designed to support high-cost near-term facility investments in low-carbon production methods and fuels that reduce GHG emissions, independent of the sector’s leakage risk classification or qualification for the Alternate CAF in Table 9-2. This revised approach is necessary to provide consistent treatment across all eligible industrial sectors, recognizing the wide variety of technical challenges and investment opportunities for decarbonizing industrial manufacturing in California. This change also aligns with the requirement of AB 398, which set all industrial sectors as high leakage risk, with an assistance factor of 100%, for 2021 through 2030.

MDI allocation helps reduce emissions leakage risk, as emissions reductions directly lower a facility’s compliance cost burden, however the MDI allocation proposal is designed primarily to facilitate GHG reduction projects across all eligible industrial sectors.

O-8.17b Multiple Comments: MDI CAF modifier

Allowing for tailoring of the modified cap adjustment factor: CARB’s rulemaking documentation creates ambiguity as to whether MDI facilities receive a fixed CAF of 0.8 or a CAF of “up to 0.8.” If the CAF is fixed at 0.8, as suggested in the 15-Day Notice,

facilities are likely to be over-awarded relative to their reductions. By contrast, if facilities must apply for a CAF "up to 0.8," as reflected in the proposed amendments, CARB can reject applications that request excessive BUCAs relative to planned reductions. CARB should consider clarifying this ambiguity ahead of MDI implementation, for instance, by correcting the 15-Day Notice or through a Board Resolution. (15d-CPC-196.4)

Comment:

Provide additional guidance prioritizing cost effectiveness: to minimize the incidence of overallocation, CARB should treat the MDI as a competitive procurement process that rewards the fewest BUCAs for the most reductions. In that context, the Executive Officer should issue guidance ahead of each compliance period that outlines criteria that will be used in assessing whether to approve or deny a facility's proposed modified cap adjustment factor.

Furthermore, CAP California suggests that cost effectiveness be the primary criterion against which the modified CAFs are deliberated. As currently drafted, there is no clear criteria that distinguishes between facilities that plan to reduce more emissions for the same modified CAF. For example, two facilities could request a modified CAF of 0.6, while one could reduce one ton of emissions and the other one hundred, yet there is no preference within the proposed language that would prioritize the more cost-effective application or provide grounds to deny the less cost-effective application.

CAP California suggests that the Executive Officer should (1) publish guidance ahead of each compliance period for MDI applications that (2) prioritizes cost-effectiveness as a criteria and (3) empowers itself to deny applications if an excessive quantity of BUCAs is awarded per reduction. (15d-CPC-196.5)

Comment:

Modifications to the MDI proposal amend the cap adjustment factor modifier, forgoing a sliding time-based scale in favor of a single modifier across the duration of the program. Kern urges Staff to clarify the value of this new modifier, noting that proposed regulatory text for Section 95891(g) reads "…receive a cap adjustment factor modifier of up to 0.8…" indicating the value of the modifier granted to an eligible application is discretionary and may be less than 0.8. However, in Staff's Summary of Proposed Modifications that accompanied notice of the 15-day Amendments, the updated proposal indicates "…using a flat CAF Modifier of 0.8 which replaces Table 9-2a…" Kern supports the assignment of a flat modifier valued at 0.8 and requests Staff remove the phrase "up to" from the regulatory text. (15d-KE-190.5)

Comment:

The Manufacturing Decarbonization Incentive (MDI), which CARB has rightly included as a modernization and financial support tool, loses much of its intended effect without a defined long-term allocation framework. The MDI reflects the Board's own acknowledgment that declining allowance budgets alone will not drive deep decarbonization in hard-to-abate sectors, and the proposed amendments create a limited new MDI pathway for industrial activities otherwise listed as ineligible under Table 9-1a, including petroleum refining, industrial gas manufacturing, asphalt paving and block manufacturing, and other basic organic chemical manufacturing, in connection with qualifying GHG emissions reduction activities under §95891(g)(2)(H). This permits those facilities to use the MDI allowance value for capital, electricity, design, engineering, and permitting costs associated with carbon capture, utilization, and sequestration equipment, contingent on a future Board-approved quantification methodology. The MDI is available for budget years 2028 through 2035 and provides an eligible facility with a CAF modifier of up to 0.8 added to the applicable CAF "by budget year and sector as listed in Table 9-2." However, Table 9-2 contains no CAF values for budget years 2031 through 2035, more than half of the MDI's eligibility window. An MDI applicant cannot meaningfully model the value of the incentive over the life of a capital project when the underlying CAF values to which the modifier attaches have not been established. The Board's modernization and financial support tool is thus undermined by the proposed regulation's silence on the post-2030 period. (15d-LACBF-15.2)

Agency Response:

No changes have been made in response to this comment. Under the Proposed Amendments number of MDI allowances provided to each eligible facility is determined using a flat CAF Modifier of 0.8, which provides consistent treatment across all eligible industrial sectors, recognizing the wide variety of technical challenges and investment opportunities for decarbonizing industrial manufacturing in California.

MDI allowances are only released to the market in exchange for demonstrable investments in low-carbon production methods and fuels that accelerate the pace of industrial emissions reductions needed to achieve the State's 2030 and 2045 GHG reduction goals while minimizing the risk of emissions leakage, with specific eligibility criteria as set forth in the Proposed Amendments. The MDI allocation is only provided for applications that meet these specific criteria, as confirmed through Executive Officer approval, on a compliance-period basis. And, if not used for the intended purposes, or if a facility requested more MDI allowance value than is actually needed to complete the eligible GHG reduction project, the remaining allowance value must be returned to CARB and then retired.

Regarding the need for additional time to set post-2030 industrial allowance allocation, see Agency Response to comment O-5.4a.

Regarding cost-effectiveness of GHG reduction projects funded with MDI allowance value, see Agency Response to comment O-8.14a.

See Master Response 4 in the Response to Comments on the Environmental Impact Analysis regarding impacts of MDI allocation on emissions integrity of the Program and guardrails to provide accountability and transparency.

O-8.18a Comment:

ABC supports the proposed amendments to add a manufacturing decarbonization incentive allocation to the program and specifically supports inclusion of biomethane as an eligible technology. As identified in the ISOR, the cost to decarbonize many industrial facilities remains higher than allowance prices under the program. An additional allocation to support industrial decarbonization will help develop and deploy strategies needed to decarbonize these sectors, including biomethane projects, and help them become economically viable and be deployed more rapidly to support California's environmental goals. (45d-ABC-406.5)

Agency response:

No changes were made in response to this comment. Staff appreciate the support for the Proposed Amendments. The Proposed Amendments include exempt biomass-derived fuels, including biomethane, as eligible for the use of MDI allowance value under section 95891(g)(2)(A).

O-8.18b Comment:

We also support expanding biomass derived fuel opportunities, improving flexibility in offset programs, and ensuring implementation rules encourage investment rather than discourage it.

Dairy Institute thanks CARB for previous and current support of ongoing ag-focused greenhouse gas reduction emission -- reduction programs funded through the Greenhouse Gas Reduction Fund and we urge CARB to continue working with the industry to (inaudible) that reduces emissions while preserving (inaudible) (BH-DIC-203.2)

Agency Response:

No changes were made in response to this comment. Staff appreciate the support for the Proposed Amendments.

O-8.19 Multiple Comments: Remove historical baseline requirement for biomass procurement

Eliminate the rolling historical baseline applied to biomass procurement. The proposed three-year baseline functions as a deductible that penalizes early adopters, treats biomass differently from other MDI pathways, and increases exposure to biomass price volatility while adding unnecessary administrative complexity. MDI support should apply to all qualifying future biomass procurement, and biomass-related capital investments required to expand fuel substitution should be recognized as qualifying expenditures. (45d-CSCME-352.14)

Comment:

Modify eligibility of biomass fuel in MDI, to avoid penalizing early adopters and rewarding late adopters, by deleting the eligibility restriction on historical use.

Of the six categories proposed as eligible for MDI funding, biomass is the only category that has additional restrictions on eligibility for funding procurement. (Cap-and-Invest Proposed Regulation, Appendix A-1, pages 210-212)

The current language says MDI will only reimburse biomass procurement for incremental consumption above a historical baseline. This means that over the life of MDI (12 years), a producer starting from zero will be able to capture much more value than a producer who already has meaningful consumption of biomass fuels.

The practical impact of this design is that it penalizes early adopters and rewards late adopters. This is not good policy.

NCC is already a large consumer of biomass fuel. We have invested into our plant and the biomass supply chain as an early adopter in California. As a result, CARB’s proposal on biomass fuel procurement under MDI has an adverse and unfair effect on our business compared to others in the industry.

The alternative that we, and CSCME, propose is to simply delete the historical baseline requirement, to make it consistent with other categories currently listed in MDI. (45d-NCCC-418.4)

Comment:

Renewable Fuels and Biomass Suggestion: expand incentive allocation project eligibility Current MDI eligibility for renewable and biomass-derived fuels represents an important step in enabling covered entities to reduce their carbon intensity through fuel switching. To ensure this eligibility delivers fair and effective incentives, CARB should calculate emissions reductions against a conventional fossil fuel baseline, rather than against a facility's current fuel mix. Setting baselines based on existing renewable fuel purchases

would inadvertently penalize early actors; facilities that proactively adopted biomass fuels before the MDI program would receive less credit than facilities that delayed action. (45d-CLECA-417.7)

Agency Response:

Changes were made in response to these comments. The 36-month criterion for historic biomass-derived fuel use was removed, instead specifying that the biomass-derived fuel must be used to reduce the facility's covered emissions and that MDI allowance value may be used to cover capital costs and up to 50 percent of fuel costs for biomass-derived fuels use. This change ensures MDI allowance value appropriately incentivizes use of biomass-derived fuels with a cost premium over equivalent fossil fuels, while the 50 percent cap for fuels costs supports cost-effectiveness and focuses the use of MDI allowance value on covering that cost premium rather than subsidizing baseline facility energy use. See also Agency Response to comment R-2.3a.

In addition, Board Resolution 26-7 directs the Executive Officer, by July 1, 2028, to evaluate and propose future amendments, as appropriate, that would further align the MDI program with statutory climate targets such as sufficient support to help achieve the methane reduction targets under SB 1383.

O-8.20a Comment:

Furthermore, CARB should avoid prematurely allowing for exempt biomass-derived feedstocks to qualify for the Incentive Allocation at this point, given that the public health, land and biodiversity impacts of biomass-derived feedstocks needs further study. (45d-NRDC-376.12)

Agency Response:

No changes were made in response to this comment. Please refer to Agency Response 376-2 in the Response to Comments on the Environmental Impact Analysis. The Proposed Amendments maintain consistent treatment of biomass-derived fuels and feedstocks, which have been in place since the start of the Program. The inclusion of biomass-derived fuels in MDI aligns that incentive for biomass-derived fuel uses with the practical economics and deployment patterns of biomass-derived fuels and the decarbonization strategies for hard-to-decarbonize industrial sectors in the 2022 Scoping Plan Update. Furthermore, CARB analyzed natural resource impacts, including with respect to biological resources and land use, of the Proposed Amendments in the Environmental Impact Analysis.

However, CARB has strengthened the eligibility criteria for biomass-derived fuel eligibility in Section 95891(g)(2)(A). These changes include limiting eligible fuels

to those that reduce covered emissions, excluding fuels that are only partially biogenic, and introducing a 50% spending limit on biomass-derived fuel purchases. Together, these updates ensure that MDI value incentivizes biomass-derived fuel use and methane emissions reductions aligned with the 2022 Scoping Plan Update, which reduce facility covered emissions and support the State's progress toward achieving its 2030 and 2045 climate targets.

In addition, Board Resolution 26-7 directs the Executive Officer, by July 1, 2028, to evaluate and propose future amendments, as appropriate, that would further align the MDI program with statutory climate targets such as sufficient support to help achieve the methane reduction targets under SB 1383.

O-8.20b Comment:

I'm Leslie Martinez on behalf defensores del agua y el aire limpios, defenders for clean air and water.

Communities in the San Joaquin Valley have been forced to live near or next to more than 90 percent of the state's dairy cows and we bear almost all of the environmental impacts that come from these giant dairies, including, but not limited to, polluted air and water. As we have shown this Board many times, incentives and subsidies for biogas production only make this problem worse.

Rather than the State implementing real solutions for communities like ours, we have been forced to watch multiple incentives of multiple rounds go towards building and incentivizing biogas producers to create more manure methane and make a profit from it. The proposed Cap-and-Invest Regulations are in partic -- in particular that MDI will increase giveaways to harmful biogas production and allow polluting industries to double count supposed emissions reductions of biogas. Defensores del agua y el aire limpios came together to voice the concerns and recommendations of communities living next to the largest dairies in the world and advocate for policy solutions rooted in health outcomes.

Accordingly, defensores, or defenders strongly encourages this Board to reject the 15-day changes and eliminate the MDI. (BH-Martinez-308.1)

Agency Response:

No changes were made in response to this comment. Please refer to the response to comment O-8.20a and comments 45-42-2 and 45-46-2 in the Response to Comments on the Environmental Impact Analysis.

Regarding additional environmental impacts of MDI on facility emissions, local air quality, and public health, please refer to the Agency Response to Manufacturing

Decarbonization Incentive (MDI) Comments in the Supplemental Response to Comments on the Environmental Impact Analysis (pages 3-4).

O-8.21 Multiple Comments: 50% Spending Limit for Biomass-Derived Fuel Costs

Comment:

Manufacturing Decarbonization Incentive Allocation Framework Should Be Able to Pay the Full Premium for Renewable Fuels Above the Cost of Conventional Gas.

We do not support the limit added to the Manufacturing Decarbonization Incentive (MDI) Allocation in the 15-Day package to cover only 50% of total fuel cost for purchases of biomass-derived fuel. The Notice released with the 15-Day Package states that the 50% spending limit, “recognizes the cost premium for low-carbon fuels over fossil alternatives while not subsidizing baseline energy costs that the facility was already incurring.” However, imposing an arbitrary limit of 50% of the fuel cost is inappropriate as it is not directly tied to the cost premium for renewable fuel use...

We recommend that this limit be removed and that the MDI framework be structured to cover up to the full premium paid by industrial actors for the cost of renewable fuels above the cost of conventional fuels. (15d-RNGC-105.3)

Comment:

Remove 50% Fuel Cost Cap from MDI Allocation. Amp is generally supportive of the Manufacturing Decarbonization Incentive (“MDI”) allocation and the inclusion of biomethane as an eligible technology. However, we echo concerns from the RNG Coalition regarding the 50% limit on support for biomass-derived fuel costs. The cost premium for renewable fuels is fuel-specific and fluctuates with market conditions, and an arbitrary 50% cap risks under-incentivizing RNG procurement when conventional fuel prices are low. We urge CARB to remove this 50% limit and instead structure the MDI to account for the full premium paid by industrial actors for low-carbon fuels above the cost of conventional alternatives and allow flexibility under the MDI provisions for facilities to utilize the crediting in a way that best supports their path to decarbonization. (15d-AA-85.3)

Comment:

While ABC supports the overall MDI concept, ABC cautions against the proposed limitation that caps allocation to cover only 50% of the fuel cost for biomass-derived fuels. This proposed threshold appears arbitrary and is not directly tied to the actual cost of renewable fuel use. Furthermore, the justification provided for this limit – that the cap recognizes the cost premium for low-carbon fuels without subsidizing baseline energy costs – is not aligned with how renewable fuel markets function in practice. The cost of renewable fuels is variable and dependent on the prices of both conventional

and renewable substitutes; therefore, a fixed 50% cap may fail to provide sufficient incentive in cases where fossil fuel prices are low. Furthermore, a flat cap based on fuel cost fails to account for the varying GHG benefits across different pathways. By focusing only on cost, the proposed limit risks undermining the program's objective of maximizing GHG reductions. ABC therefore recommends removing the 50 percent cap and instead considering an approach that more directly reflects both market conditions and emissions reduction outcomes. (15d-ABC-95.2)

Agency Response:

No changes were made in response to these comments. The 50 percent spending limit for biomass-derived fuel costs is intended to recognize the cost premium for low-carbon fuels over fossil alternatives while focusing the use of MDI allowance value on cost-effective GHG reductions and not subsidizing baseline energy costs that the facility was already incurring regardless of its chosen mix of fossil and biomass-derived fuels. The 50 percent cost cap serves as a reasonably proxy for this cost premium over fossil fuel use and is administratively straightforward and provides a clear metric for entities using the MDI as it does not require establishing a fossil-equivalent cost baseline for each facility that uses of MDI allowance value for biomass-derived fuels.

Board Resolution 26-7 directs the Executive Officer, by July 1, 2028, to evaluate and propose future amendments, as appropriate, that would further align the MDI program with statutory climate targets such as sufficient support to help achieve the methane reduction targets under SB 1383. Any changes to the use of MDI allowance value for biomass-derived fuels may be considered for a future rulemaking as part of that public process.

O-8.22 Multiple Comments: Biogenic fraction of biomass-derived fuels covered by MDI allowance value

Comment:

The 15-Day Amendments cap biomass operating expense eligibility at 50% and exclude fuels that are only partially biogenic from the eligible expenditure category entirely. CSCME views the 50% cap on fuel expenditures as a reasonable alternative to the previously proposed approach of establishing an updating biomass fuel baseline, and we appreciate CARB's efforts to reduce the penalty for early adopters while still providing an incentive for expanding future use. However, the 15-Day Amendments introduce a new condition under which expenditures for partially biogenic fuels cannot be credited against the 50% cap. This creates an artificial and arbitrary cliff effect that is difficult to justify on environmental grounds. Many of the alternative fuels most accessible to California cement kilns are engineered fuels and blended fuel streams that are partially biogenic. These fuels still meaningfully reduce net GHG emissions relative

to fully fossil alternatives, and the extent of that reduction is directly proportional to their biogenic content. To use an extreme example, under CARB's proposed approach, a fuel that is 100% biogenic will receive full credit while a fuel that is 99% biogenic will receive none — an outcome that is neither analytically defensible nor consistent with the program's stated goal of incentivizing emissions reductions. CSCME urges CARB to credit biogenic fuel operating expenses in proportion to actual biogenic content. This approach would preserve the cost-sharing logic of the 50% cap, while eliminating the cliff effect and more accurately reflecting the GHG benefit of partially biogenic fuels. (15d-CSCME-174.4)

Comment:

One clarification that we believe is needed is in reference to the limitation of biogenic fuel and the use of axillary fuels during start up. The District suggests that the Regulations provide a small allowance (say, for example, up to 5%, which is allowed in the RPS Program) for the use of non-biogenic fuel during limited startup operations. This would accommodate the needs of some advanced biofuel technologies to sometimes use other fuels during certain startup sequences. We are concerned that one interpretation of "fully" using biogenic fuel, as provided in the Regulations, means a complete restriction on any use of non-biogenic fuel. Such an interpretation could negatively impact the operational processes at a facility, which would be detrimental to project efficiency and the achievement of a facility's optimal climate benefits. (15d-PCAPCD-155.6)

Agency Response:

No changes were made in response to these comments. Biomass-derived fuels that have a partial exemption from a Cap-and-Invest Program compliance obligation are not eligible for use of MDI allocation value to ensure that MDI allowance value targets biomass-derived fuel use and methane emissions reductions that reduce facility covered GHG emissions aligned with the deep decarbonization needed to support the State's progress toward achieving its 2030 and 2045 climate targets.

Non-biogenic fuels (e.g., fossil natural gas) used during startup operations are not an eligible use of MDI allowance value. However, per section 95891(g)(2)(A) of the Proposed Amendments, MDI allowance value can be used to cover up to 50 percent of the fuel cost for fully exempt biomass-derived fuels (e.g., eligible biomethane), regardless of any separate fossil fuel use by the facility. While MDI allowance value cannot be used for the non-biogenic fuel costs, the facility's use of non-biogenic fuels does not prohibit MDI eligibility.

O-8.23a Multiple Comments: Limit MDI project eligibility for biomass-derived fuels to only in-state fuel sources that support SB 1383 Targets

Comment:

The use of allowances to help decarbonize manufacturing in California could be hugely beneficial in meeting the SLCP reductions of SB 1383, but only if allowances are used for low carbon fuels produced from organic waste in California. This is why SB 1383 requires the Air Board and other state agencies to adopted policies and incentives to accelerate the instate production of renewable gas, including biogas and biomethane, from organic waste. If manufacturing decarbonization allowances are used to buy down the costs of out of state, undelivered fuels, those allowances will not help at all to meet the critical requirements of SB 1383, including the landfill diversion, dairy methane, and overall methane and black carbon reduction requirements. Not only will allowances not help to meet the requirements of SB 1383, but using them for out of state fuels would likely make it harder to meet the requirements of SB 1383 by creating unfair competition for instate projects. Spending allowances out of state would make an already unlevel playing field worse. California has stricter environmental, labor, pipeline injection, and other regulations that increase the costs (and benefits) of instate projects. Further subsidizing out of state fuels production by using allowances to drive down the costs of those out of state fuels will make it even harder for instate fuels to compete. This will result in a smaller market for instate fuels that are generated from diverted organic waste, dairy and other livestock waste, or forest and agricultural waste. The Legislature has been very clear and consistent since at least 2006 that biomethane and bioenergy should be generated and used instate or at least delivered to California to maximize benefits to the state. Beginning with the second RPS legislation, which phased out the use of undelivered power (equivalent to book and claim under the LCFS), the Legislature has required instate production and use or at least delivery of biofuels in every bill related to biofuels over the past 20 years. This includes SB 1383 and more than half a dozen other bills. SB 1383 requires state agencies to adopt policies and incentives to increase the instate production and use of bioenergy generated from organic waste. SB 1383 requires state agencies to adopt policies and incentives to significantly increase the sustainable produce and use of renewable gas, including biomethane and biogas. SB 1383 requires CARB, in particular, to adopt “additional policies to support the development and use in the state of renewable gas, including biomethane and biogas, that reduce short-lived climate pollutants in the state.” (emphasis added) Numerous other laws also require state agencies to adopt policies and incentives to increase the instate production of biogas and biomethane. Those include:

• AB 1900 (Gatto, 2012) requires the CPUC to “adopt policies and programs that promote the in-state production and distribution of biomethane. The policies and

programs shall facilitate the development of a variety of sources of in-state biomethane."

• SB 1122 (Rubio, 2012) requires the CPUC to "encourage gas and electrical corporations to develop and offer programs and services to facilitate development of in-state biogas for a broad range of purposes."

• AB 2313 (Williams, 2016) requires the CPUC to consider options to increase instate biomethane production and use.

• SB 840 (Budget, 2016) states that for "California to meet its goals for reducing emissions of greenhouse gases and short-lived climate pollutants, the state must . . . increase the production and distribution of renewable and low-carbon gas supplies."

• SB 1440 (Hueso, 2018) limits pipeline biomethane eligibility to fuels that are generated instate or provide specific benefits to California's environment from the production or capture of the biomethane.

The Legislature's consistent focus on instate biofuels production is to ensure that California receives the benefits of biofuels production and use, most of which occur during the production or capture of the biomethane and other biofuels. This is all the more important when shaping the use of incentives such as the allocation of allowances... In addition to reducing SLCP reductions, as required by SB 1383, instate production of biofuels provides many other benefits to the state that out of state production does not provide. Those benefits include the reduction of landfill waste, reduction of pollution from pile and decay of livestock waste or agricultural residues, mitigation of wildfires and reduction in open burning, and creation of jobs and economic development. Each of these is a significant benefit that only helps California if the fuels are produced instate. CARB has recognized these benefits in numerous climate and air quality plans. In particular, California's Short-Lived Climate Pollutant Reduction Strategy recognized that "The State's organic waste should be put to beneficial use, such as for …electrical generation, transportation fuel, and pipeline-injected renewable natural gas…Practical solutions must be developed and implemented to overcome barriers to waste gas utilization for pipeline injection and grid interconnection." The SLCP Reduction Strategy also recognized the significant public health benefits of reducing SLCP emissions and the economic benefits. As the SLCP Reduction Strategy found, "Building infrastructure to better manage organic waste streams could lead to billions of dollars of investment and thousands of jobs in the State...For all the reasons above, we urge CARB to revise section 95891(g)(2)(A) to limit the use of manufacturing decarbonization allowances used for biofuels procurement to fuels that are generated instate or at least delivered to the western electricity or gas grid. This will make the use of allowances for biofuels consistent with the requirements for renewable electricity and for hydrogen, both of which require the use of renewable power that is connected to the

western electricity grid. We urge CARB to add the following sentence at the end of Section 95891(g)(2)(A): For purposes of the manufacturing decarbonization incentive allocation, exempt biomass-derived fuels must meet at least one of the following:

(1) the fuel results in a reduction or avoidance of onsite fossil fuel combustion by the manufacturing facility;

(2) the fuel must be generated and used in California;

(3) the fuel must meet the requirements of Public Utilities Code section 399.12.6(b); or

(4) the production or capture of the fuel helps to meet the requirements of Health and Safety Code section 39730.6. (15d-BioAC-6.1)

Comment:

The proposed amendments do not allocate funding to help local jurisdictions develop the infrastructure required to meet the SB 1383 organic waste disposal reduction regulatory requirements. Local jurisdictions continue to face significant challenges in implementing SB 1383, including:

- Insufficient anaerobic digestion capacity
- Limited markets for finished compost and digestate
- High capital costs for new or expanded facilities
- Transportation and siting constraints in urban counties such as Los Angeles
- Lack of flexibility to allow for high diversion organic waste processing facilities and advanced thermal conversion technology facilities that process organic waste to be feasibly implemented.

Without dedicated funding, local jurisdictions risk falling short of achieving the SB 1383 regulatory requirements, which will help support the State's progress toward the SB 1383 methane reduction goals. Public Works respectfully requests that California Air Resources Board (CARB) work with California Department Resources Recycling and Recovery (CalRecycle) and the Legislature to establish dedicated, ongoing funding mechanisms for organic waste processing infrastructure, potentially supported by Cap-and-Invest revenues or complementary incentive programs such as the Manufacturing Decarbonization Incentive Allocation. (15d-LACDPW-28.1)

Agency Response:

No changes were made in response to these comments. The MDI allocation proposal provides eligibility for the use of biomass-derived fuels that are exempt from a Cap-and-Invest compliance obligation, which includes both in-state biomass-derived fuels, and out-of-state biogas and biomethane that meets the requirements of section 95852.1.1 of the Regulation. MDI allocation is thus

aligned with the broader incentive for biomass-derived fuels use imparted by the Cap-and-Invest carbon price signal.

CARB staff also note that the final MDI allocation proposal supports capital expenditures to facilitate biomass-derived fuels use for eligible facilities, e.g. anaerobic digestion capacity for organic waste generated by covered food or dairy processors, provided that the biomass-derived fuel produced from the capital expenditure is used to reduce the facility's covered emissions. These projects directly support in-state methane reductions and SB 1383 targets.

Board Resolution 26-7 directs the Executive Officer, by July 1, 2028, to evaluate and propose future amendments, as appropriate, that would further align the MDI program with statutory climate targets such as sufficient support to help achieve the methane reduction targets under SB 1383. Any changes to the use of MDI allowance value for biomass-derived fuels may be considered as part of that public process.

O-8.23b Multiple Comments: Limit MDI project eligibility for biomass-derived fuels to only in-state fuel sources that support SB 1383 Targets

Comment:

Good morning. Julia Levin with the Bioenergy Association of California.

We strongly support the concept of the Manufacturing Decarbonization Incentive. This is critical to decarbonize sectors like glass, cement, steel, and food processing that all Californians depend upon. We do urge the Air Board, either in the regulations themselves or in the resolution that you adopt later today, to make one critical change thought to comply with law and to meet the goals of the Cap-and-Invest Program, and that is to require that any biomethane or biomass procured for manufacturing decarbonization must be delivered to California. That's already required for renewable electricity or renewable hydrogen that are used to decarbonize the manufacturing sector, but there is no delivery requirement for biomethane and bioenergy. That violates the law, which requires that the Cap-and-Invest Program maximize the environmental and economic benefits in California of this Program. The way the MDI is written now, California could send billions of dollars worth of allowances to out-of-state biomethane producers and not even require that the biomethane be delivered to California. That means it won't help us mitigate wildfires. It won't help us reduce landfill waste, reduce dairy methane, open burning of agricultural waste and it won't even displace fossil fuel use in California.

That is a very bad policy for California to spend money on out-of-state projects that don't benefit our own economy and environment. So we urge you to adopt the MDI, but with

the qualification that all participating fuels must be delivered to California and actually reduce fossil fuel use in state.

Thank you. (BH-BioAC-140.1)

Agency Response:

No changes were made in response to these comments. Staff appreciate support for the Proposed Amendments. On potential deliverability requirements for MDI eligible biofuels, please refer to the Agency Response to comment O-8.23a.

O-8.24 Comment:

Special care should be taken to ensure that the MDI program does not inadvertently increase emissions through its proposed support for 50% of the costs of "exempt biomass-derived fuels" 95891(g)(2)(A). This stands to exacerbate the leakage problem and perverse interaction with the LCFS created by the fact that biomass-derived fuels are treated as zero emissions under the cap and invest program, rather than aligning with the emissions accounting under the LCFS. If the MDI program promotes substitution of biomass-derived fuels in the place of fossil fuels, the associated emissions will completely drop out of the coverage, lowering demand in the program which will depress prices. In addition, this will allow other entities to increase emissions by a corresponding amount even though the actual emissions reductions might be much less. This stands to erode rather than support California's climate goals unless the greenhouse gas accounting is corrected.

The most straightforward solution would be to align the accounting for granting allocations under the MDI with the emissions accounting under the LCFS. Furthermore, entities should not be able to claim LCFS credits for the same quantities of fuel supported by the MDI, given that this can distort incentives for cost-effective reductions under the LCFS. Finally, allowances should be canceled in the subsequent year to make up for any emissions that drop out due to the substitution of fossil for exempt biomass-derived fuels to ensure California stays on track for its climate goals. (15d-Lubowski-89.4)

Agency Response:

No changes were made in response to these comments. Please refer to Agency Response 89-2 in the Response to Comments on the Environmental Impact Analysis regarding this comment.

For further discussion of the general impacts of MDI allowance value on auction prices and the overall emissions outcome of the Program, including the notion that emissions reduced in one sector will raise emissions in another due to the fungible nature of GHG allowances, see Master Response 4 in the Response to Comments on the Environmental Impact Analysis.

The treatment of biomass-derived fuels in the MDI program is designed for consistency with existing treatment of biomass-derived fuels in the Program, with additional limitations to focus MDI allowance value provided to eligible facilities on biomass-derived fuel uses aligned with the deep decarbonization strategies identified for hard-to-decarbonize industrial sectors by the 2022 Scoping Plan Update. Emissions coverage under Cap-and-Invest is not determined using lifecycle analysis, and biomass-derived fuels used to reduce industrial covered emissions face different policy and economic considerations from biomass-derived transportation fuels that generate credits under LCFS.

Further, incentive stacking with LCFS credit generation is explicitly allowed by section 95852.1 of the Regulation, and the MDI program is designed to align with that policy structure and recognize the complementary role of the Cap-and-Invest and LCFS markets for incentivizing the increased use of low-carbon fuels, including biomass-derived fuels. Further discussion of the LCFS is outside the scope of this rulemaking.

O-8.25 Multiple Comments: Transparent calculation of MDI allowance value for low-carbon fuel providers

Comment:

We agree with CARB staff's position in the Initial Statement of Reasons that, "the cost of a number of manufacturing decarbonization activities continues to be greater than the allowance price." This is certainly true for manufacturing facilities considering renewable natural gas (RNG) use; therefore, we support updating the C&I framework to provide a stronger reinforcing signal for RNG use and other decarbonization activities at these facilities. Specifically, we support the Manufacturing Decarbonization Incentive (MDI) Allocation concept in the Draft Language. We believe that the general MDI concept is sound: allocating a greater number of allowances to industrial actors to create a pool of value that can fund manufacturing decarbonization projects. We also support covering ongoing costs for procuring low-carbon fuels, such as RNG, as one of the eligible activities in the MDI. However, it is not clear how to assess the details of the proposed framework on a facility-by-facility basis. We request CARB provide additional clarity so that RNG producers can estimate the amount of value available per year to each manufacturing party that opts in. Under the current proposal, unless an actor is party to the details of the allocation for the eligible manufacturing source, they cannot ascertain the number of additional allowances a source receives annually if they elect to participate. Providing more transparency to parties beyond the manufacturing actor receiving the MDI allocation would allow RNG producers (and other parties supplying decarbonization tools) the opportunity to better understand the magnitude of total incentive available from this new concept, increase the supply-side competition to serve

each actor receiving this incentive, and therefore maximize the cost-effectiveness of this concept. (45d-AC-396.19)

Comment:

We believe the proposal would benefit from further clarification and transparency around the allocation, so that biomethane or other low carbon fuel providers have greater insight into the potential value of the incremental allocation to support project development. (45d-AA-364.6)

Comment:

We agree with CARB staff's position in the Initial Statement of Reasons that, "the cost of a number of manufacturing decarbonization activities continues to be greater than the allowance price." This is certainly true for manufacturing facilities considering RNG use, therefore, we support updating the C&I framework to provide a stronger reinforcing signal for RNG use and other decarbonization activities at these facilities.

Specifically, we support the Manufacturing Decarbonization Incentive (MDI) Allocation concept in the Draft Rule. We believe that the general MDI concept is sound—allocating a greater number of allowances to industrial actors to create a pool of value that can fund manufacturing decarbonization projects. We also support covering ongoing costs for procuring low-carbon fuels, such as RNG, as one of the eligible activities in the MDI. However, our members are currently unclear on how to assess the details of the proposed framework on a facility-by-facility basis. We request CARB provide additional clarity so that RNG producers can estimate the amount of value available per year to each manufacturing party that opts in. Under the current proposal, unless an actor is party to the details of the allocation for the eligible manufacturing source, they cannot ascertain the number of additional allowances a source receives annually if they elect to participate. Providing more transparency to parties beyond the manufacturing actor receiving the MDI allocation would allow RNG producers (and other parties supplying decarbonization tools) the opportunity to better understand the magnitude of total incentive available from this new concept, increase the supply-side competition to serve each actor receiving this incentive, and therefore maximize the cost-effectiveness of this concept. (45d-RNGC-390.4)

Comment:

ABC suggests the proposal would benefit from additional clarification and transparency regarding the structure and potential value of the incremental allowance allocation. Greater visibility into how this allocation may support project development would help biomethane and other low-carbon fuel providers better assess the role the program could play in enabling investment. (45d-ABC-406.6)

Agency Response:

No changes were made in response to these comments. Allocation on a facility-by-facility basis contains information protected by confidential business information (CBI) for each individual facility. Resolution 26-7 directs Staff to make publicly available, annually, the number of MDI applications received and approved, and the number of MDI allowances issued in total and by sector, MDI allowances remaining, MDI allowances returned, and MDI allowances retired. The Board Resolution further directs staff to release additional information at the end of each compliance period including the types of projects supported by the MDI allowances, projects' need for financial incentive, and how the incentive accelerated near-term project implementation. See Agency Response O-8.45a for the information staff plans to provide pursuant to this Board Direction.

Furthermore, the15-day Amendments streamline the process and clarify how many allowances in total are available for MDI. The MDI is now populated with 118.3 million current vintage allowances which are available to eligible facilities until the account is exhausted. The number of MDI allowances provided to each eligible facility is determined using a flat CAF Modifier of up to 0.8, which replaces Table 9-2a in the 45-day proposal, which differentiated CAF Modifiers by sector and budget year. The consistent flat CAF Modifier across all years allows facilities to design and time MDI applications and investments in a manner that minimizes risk and maximizes chances of successful GHG emissions reduction projects and should help other entities more easily assess how much MDI may be available to a specific sector.

Third-party providers of eligible low-carbon technologies and fuels can estimate the value of MDI allowances available to eligible facilities by applying the flat CAF modifier to historically published information on industrial allowance allocation by sector and incorporating reasonable auction price assumptions in the year for which MDI allocation is provided.

O-8.26 Comment:

Secondly, the requirement under §95890(g)(2)(C)(1) should not be limited to only those entities who have received the federal tax credit under 45V, as this will limit applicability to only those years for which the tax credit is available and subject eligibility of this provision to uncertain and variable federal policy. For example, the 45V tax credit can only be applied to projects that begin construction prior to 12/31/2027, while CARB's proposed manufacturing credit incentivizes the use of low carbon hydrogen through 2038. We suggest that CARB take an approach similar to what was done in the recent Low Carbon Fuel Standard rulemaking, where eligibility was defined by a carbon intensity equivalent to the threshold defined under the 45V tax credit, but did not require

that the 45V credit be received. CARB should utilize the 4 kg CO2e/kg H2 produced as the eligibility threshold and reference that meeting this threshold can be demonstrated either utilizing the latest version of the CalGREET model or the version of the GREET model recognized by the federal government. (45d-AP-351.10)

Agency Response:

Changes were made in response to this comment. The phrase “or meets the eligibility criteria for” was added to section 95891(g)(2)(C)1. This change provides a path for a facility to use MDI allowance value to purchase low-carbon hydrogen if it can demonstrate that the low-carbon hydrogen meets the eligibility criteria in 26 U.S.C. § 45V(b)(2)(A)-(D), including the eligibility threshold of 4 kg CO2e per kg H2 produced. This change ensures that MDI allowance value can be used to support investments in low-carbon hydrogen by California facilities, regardless of the evolving federal policy landscape and the sunset date for federal tax credits under 26 U.S.C. § 45V.

O-8.27 Comment:

CARB should reduce the scope of qualifying onsite generation activities that can receive financing from the Incentive Allocation to ensure that incentivized activities don’t result in unaccounted GHG emissions or unnecessary co-pollutants.

The proposed amendments permit EITE facilities to receive financing for the following types of onsite hydrogen generation to qualify from the Industrial Allocation: "Low-carbon hydrogen. An eligible facility may use the value of manufacturing decarbonization incentive allocation allowances to purchase low-carbon hydrogen that meets at least one of the following requirements: 1. The hydrogen is produced through a process that has received a tax credit pursuant to 26 U.S.C. § 45V(b)(2)(A-D): Credit For Production of Clean Hydrogen (July 2024) herein incorporated by reference; or 2. The hydrogen is produced from exempt biomass-derived feedstocks as defined in section 95852.2(a); or 3. The hydrogen is produced from the electrolysis of water using 100 percent renewable electricity."

Using the first definition of hydrogen which cross-references 6 U.S.C. § 45V(b)(2)(A-D) is appropriate because it provides the necessary guardrails for ensuring proper accounting of actual greenhouse gas emissions reductions, as outlined NRDC’s comments submitted to the U.S. Department of Treasury on February 26, 2024. Should the 45V tax credit expire at the federal level, we would encourage CARB to continue using the criteria that is in 26 U.S.C. § 45V(b)(2)(A-D) alongside the 2025 regulations issued by the IRS. In contrast, the second and third definitions do not provide sufficient guardrails to prevent additional grid emissions, which would exceed the emissions associated with the first definition. (45d-NRDC-376.11)

Agency Response:

Changes have been made in response to this comment. Regarding hydrogen eligibility under section 95891(g)(2)(C)1., refer to Agency Response to comment O-8.26 concerning low-carbon hydrogen procured from projects meeting the criteria for a federal tax credit under 26 U.S.C. § 45V.

Regarding hydrogen eligibility under section 95891(g)(2)(C)2., the word “fully” was added to limit this eligibility category for low-carbon hydrogen procurement to only hydrogen produced from biomass-derived fuels that are fully exempt from a Cap-and-Invest Program compliance obligation. This change also aligns with the proposed limitation for MDI allowance value used for biomass-derived fuels in section 95891(g)(2)(A), where the use of a fuel that is only partially exempt based on a biogenic fraction cannot be claimed as an eligible use of MDI allowance value.

With the state’s clean energy policies combined with the 45v requirements, it is unlikely that upstream grid emissions would increase due to production of clean hydrogen.

These changes are intended to align the MDI eligibility criteria for low-carbon hydrogen with similar requirements in the Low Carbon Fuel Standard Program.

O-8.28 Comment:

Also, for the eligibility criteria in §95890(g)(2)(C)(2) and (3), CARB should clarify that only the hydrogen production feedstock need be from exempt, biomass-derived feedstocks or renewable electricity, and not that the process energy also is required to be 100% renewable. Given transient operating conditions and availability of renewable feedstocks/energy, these criteria, if applied to all energy use at a given facility would significantly limit or eliminate low-carbon hydrogen as a manufacturing decarbonization option. (45d-AP-351.11)

Agency Response:

No change was made in response to this comment. The Proposed Amendments specify that MDI eligible hydrogen must be produced from exempt biomass-derived feedstock. No clarifications are necessary because the Regulation defines what feedstocks are fully exempt (see section 95852.2), and in parallel, the MRR Regulation defines the terms feedstock and process. Further, the Proposed Amendments specify that the hydrolysis of water to produce eligible hydrogen must use 100% renewable electricity. These criteria apply to expenditures funded with MDI allowance value, not all energy use at an eligible facility.

To further incentivize low-carbon hydrogen projects through MDI, changes were made concerning hydrogen MDI eligibility from 26 U.S.C. § 45V eligible projects, as discussed in Agency Response to comment O-8.26.

O-8.29 Multiple Comments: Hydrogen – renewable electricity criteria

Under the amendments, hydrogen producers must demonstrate that electricity used for electrolysis is (1) sourced from an RPS-eligible renewable resource, (2) generated within the same local balancing authority (LBA) or delivered without substitution, and (3) time-matched on a monthly basis. Together these requirements go well beyond the existing verification and deliverability standards embedded in the RPS and WREGIS tracking system. RPS eligibility already ensures that renewable electricity is properly certified, tracked, and verified through CEC processes. To ensure clarity in eligibility, the CHBC requests that CARB add a citation to California Public Utilities Code Section 399.12 to the term “Eligible Renewable Energy Resources” aligning directly with the official RPS definition and the definition section. (15d-CHBC-149.2)

Comment:

Adding additional LBA-level deliverability and monthly matching requirements creates redundancy, restricts production of the cleanest hydrogen and exceeds federal standards without providing additional emissions-reduction value.

From a technical standpoint, the LBA-specific deliverability requirement does not reflect how the CAISO grid operates. California’s electricity system is designed around regional balancing, market-based dispatch, and system-wide renewable integration—not strict LBA-level matching. Requiring electrolytic hydrogen producers to demonstrate same-LBA generation or non-substitutable delivery introduces a level of granularity that is not required under the RPS, the LCFS, or federal 45V hydrogen tax credit guidance. This misalignment risks creating compliance pathways that are theoretically valid but operationally infeasible, particularly in regions with constrained transmission or limited renewable build-out.

The monthly time-matching requirement is also more restrictive than the LCFS quarterly matching standard that CARB cites as justification for alignment. The federal time matching requirement is scheduled to be phased in, with annual matching required until 2030. Monthly matching significantly limits the ability of hydrogen producers to rely on variable renewable generation profiles, especially during periods of seasonal resource variability. This requirement may unintentionally disadvantage electrolyzer projects that are otherwise capable of achieving very low CI scores but cannot meet the more stringent temporal granularity imposed here.

In combination, these amendments create a compliance structure that is more restrictive than necessary, duplicates requirements already embedded in RPS

certification and introduces cross-program inconsistencies that complicate planning for hydrogen producers participating in multiple CARB programs. Stakeholders are concerned that these overlapping constraints will slow deployment of low-carbon hydrogen, increase compliance costs, and reduce the effectiveness of the MDI allocation as a tool for industrial decarbonization. (15d-CHBC-149.3)

Comment:

The 15-Day Modifications to §95891(g)(2)(C)(3) Adding Monthly Time-Matching and Local Balancing Authority Deliverability Requirements Should Be Stricken

The 15-day Modified Text retains this pathway but adds two requirements that change its operational character. Renewable electricity must now be matched to hydrogen production on a monthly basis, and it must be sourced from a generation facility located within the same local balancing authority area as the hydrogen production facility. Both additions appear to be drawn from the federal 45V framework, where they exist as the temporal matching and deliverability pillars.

…We therefore recommend that the implementing guidance confirm two things. First, compliance with the §95488.8(i)(1)(A) three-quarter book-and-claim framework satisfies the temporal matching component of §95891(g)(2)(C)(3). Second, no temporal matching standard tighter than three-quarter book-and-claim is required for §95891(g)(2)(C)(3) eligibility. This preserves the environmental integrity of temporal matching, leverages existing CARB-administered verification systems, eliminates the operational infeasibility of a monthly standard, and aligns the MDI procurement criterion with the LCFS criterion that California's hydrogen producers are already meeting.

…D. The Recommended Fix

We recommend that subsections (a) and (b) of §95891(g)(2)(C)(3) introduced in the 15-day Modified Text be stricken. The balance of the 15-day text, including the clarifying reference to "an Eligible Renewable Energy Resource" as defined in §95802 should be added. Specifically, we propose that the provision read: The hydrogen is produced through the electrolysis of water using 100 percent eligible renewable energy resources, as defined in section 95802.

This formulation accomplishes the program's environmental objective (procurement of hydrogen produced from genuinely renewable electricity) while relying on California's existing statutory and regulatory definitions of qualifying renewable resources. It avoids the geographic contradiction with AB 825's regional market direction. And it aligns with the position the four California state agencies took in their February 26, 2024 letter to Treasury, which the Board can rely upon as a matter of consistency with its own previously stated views.

If staff retain a policy concern about ensuring temporal correspondence between renewable electricity generation and hydrogen production, that concern should be addressed through implementing guidance that aligns §95891(g)(2)(C)(3) with the LCFS three-quarter book-and-claim framework discussed in subsection A above. The LCFS framework is California's settled temporal-matching standard for the same activity, is implemented through existing tracking infrastructure, and is verified annually by accredited third parties. The implementing guidance should confirm that compliance with §95488.8(i)(1)(A) satisfies the temporal matching component of §95891(g)(2)(C)(3) and that no temporal matching standard tighter than three-quarter book-and-claim is required for §95891(g)(2)(C)(3) eligibility.

The concerns identified in these comments require operational specification beyond what the regulatory text alone resolves. We respectfully request that the Board, at the May 28-29, 2026 hearing, adopt a resolution directing staff to issue implementing guidance that incorporates the following:

1. Renewable electricity sourcing under §95891(g)(2)(C)(3). Staff guidance shall confirm that compliance with the three-quarter book-and-claim framework at Cal. Code Regs. tit. 17, § 95488.8(i)(1)(A), as implemented through quarterly reporting in the LRT-CBTS, REC retirement in WREGIS, and annual third-party verification under §§ 95500–95503, satisfies the temporal matching component of §95891(g)(2)(C)(3) eligibility, and that no temporal matching standard tighter than three-quarter book-and-claim is required for §95891(g)(2)(C)(3) eligibility. Staff guidance shall further confirm that within-local-balancing-authority deliverability is not a condition of §95891(g)(2)(C)(3) eligibility, consistent with California's existing electric system planning and procurement framework as described in the four California state agencies' February 26, 2024 letter to the U.S. Department of the Treasury and consistent with the regional energy market direction codified in AB 825 (Petrie-Norris, Ch. 116, Stats. 2025).

A resolution of this kind binds the agency to specific implementation outcomes on questions where the regulatory text leaves room for ambiguity. It does so without reopening the regulatory text itself, which we recognize is a practical consideration following a 15-day modified text package. The substantive work required to issue guidance on this timeline is well within staff capacity, and the legal effect of guidance issued under Board resolution is sufficient to give applicants the certainty they need to commit decarbonization capital. The alternative, in which each of these questions is litigated through individual MDI application disputes after September 1, 2026, would impose substantial administrative burden on staff and substantial commercial risk on participants without any corresponding programmatic benefit.

We recognize that some of the substantive direction represents a different operational outcome than what the Modified Text contemplates on its face. The resolution

mechanism allows the Board to confirm those operational outcomes through implementing guidance without altering the adopted regulatory text, which we believe is the cleanest procedural pathway for both the agency and the regulated community. (15d-CHC-152.2)

Comment:

Our primary concern is that the potential hydrogen incentives are so restrictive that they will unintentionally disincentivize hydrogen adoption. Narrowly limiting the type of hydrogen that can be offset to hydrogen produced exclusively that meets so-called “three pillars” guidance, regardless of the net result, is unnecessarily limiting and will render the hydrogen incentives prohibitive to the vast majority of projects. Hydrogen, like most climate innovation, needs to be assessed as a net benefit rather than seen through a very strict and overly restrictive lens.

Like all new climate innovations, we will have to rely on enormous private investment to deploy at scale. Therefore, we should create balanced, pragmatic policy incentives that enable California to embrace these technologies broadly. (15d-SBCTCC-154.1)

Comment:

GHC supports reference to California’s existing regulations around renewable energy resource eligibility but recommends including the specific statute and forgoing the inclusion of Section 3a and 3b in the 15-Day Amendments. As this is about allowing different options to count as low carbon hydrogen, we think reference to PUC 399.12 in the proposed amendments is a reasonable approach. By creating three avenues and allowing one of them to reference California’s already existing renewable portfolio standard eligibility rules, the Board provides a known and existing pathway that has already been vetted and affirmed by many stakeholders over a prolonged period. Additionally, Eligible Renewable Energy Resources is a term of art used by the California Energy Commission (CEC) with the Renewable Portfolios Standard (RPS). GHC supports the reference and believes aligning to the current guardrails in the RPS would be a fantastic way to ensure the MDI allowance is not unintentionally too restrictive for purchasers. The RPS Guidebook is generally considered a market-based policy approach that ensures the energy produced and utilized is verifiable and clean. Thus, it makes sense to offer as an additional option for providing low carbon hydrogen within the MDI. GHC would recommend citing PUC 399.12 when referencing Eligible Renewable Energy Resources to maintain consistency and avoid potential confusion. The 15-Day Amendments proposal does not include a definition for Eligible Renewable Energy Resources because the intent is not to create a new list of resources but to reference California’s existing provisions. This is evident in option 3(a) when the Board references a different part of PUC 399. If the goal is to reference the specific term of art,

then GHC recommends adding 399.12 after the phrase Eligible Renewable Energy Resources. GHC supports the modification of option 3 as follows:

3. The hydrogen is produced from the electrolysis of water using 100 percent renewable electricity generated by an Eligible Renewable Energy Resource *consistent with California Public Utilities Code section 399.12.*

~~a. The renewable electricity used to produce the hydrogen must be supplied to the grid or directly to the facility producing the hydrogen from within the local balancing authority where the electricity is consumed or delivered to that local balancing authority without substitution consistent with the requirements of California Public Utilities Code section 399.16, subdivision (b)(1).~~

~~b. The renewable electricity utilized must be generated in the same month as the electricity utilized by the hydrogen production facility.~~

The updated amendment ensures that the term of art being referenced is not misinterpreted and ensures alignment with changes to the code that could happen in the future.

Citing to PUC 399.12 would provide alignment with the state's definition and result in the incorporation of existing guardrails inherent in the RPS. The RPS already has existing provisions related to matching and regional deliverability. For matching, under the RPS, anything delivered into California from out of state already requires matching of the generation meter with the hourly eTag schedule. Specifically, Renewable Energy Credits (RECs) are tracked monthly, but hourly data is used to determine how much goes into buckets one, two, or three. This approach accounts for the lack of feasibility with hourly matching while giving the CEC flexibility to revise if conditions change. To that end, the CEC has already stated an intent to streamline future revisions and updates to the Guidebook. Therefore, any additional guardrails developed in the future would become a part of the low carbon option three. For deliverability, the RPS has balanced requirements that significantly constrain the ability for unbundled RECs while maintaining future flexibility for California's evolving renewable landscape. (15d-GHC-191.3)

Comment:

The GHC appreciates the Board's intent to align with other California environmental policies but is concerned that alignment with the low carbon fuel standard (LCFS) may be too restrictive. As the public notice noted, "This requirement is necessary to align the MDI eligibility criteria for low carbon hydrogen with similar requirements in the Low Carbon Fuel Standard Program." Trying to align with similar California policies on renewable energy makes sense, which is why the GHC supports referencing the

statutory language around Eligible Renewable Energy Resources. Going further and including matching and delivery provisions on top of it to align specifically with the LCFS runs the strong risk of causing market confusion for producers, increasing costs passed onto ratepayers, and preemptively hindering California's recent energy policies around a regional voluntary market.

Including LCFS components that are designed and contemplated for the transportation sector runs the risk of confusing the marketplace and hindering the production of low carbon hydrogen. The Board's own website highlights the LCFS as one of several policies designed to reduce California's GHG emissions and specifically "...to decrease the carbon intensity of California's transportation fuel pool and provide an increasing range of low carbon and renewable alternatives, which reduce petroleum dependency and achieve air quality benefits." The purpose of having different approaches is that it accounts for the distinctive characteristics of each program and their respective participants.

Imposing transportation fuel obligations, such as matching and delivery, on hard-to-abate industries like those in this program runs the risk of the MDI never being utilized, costing the state millions, and eliminating a proven pathway for reducing GHG emissions. The Cap-and-Invest program is broader than the transportation sector, and the purchasers contemplated represent some of the hardest-to-abate industries in California. At a time when the renewable hydrogen industry is struggling to find offtakers in California, due to the termination of federal funding and the additional constraints on the 45V tax credits, additional requirements placed on electrolytically produced hydrogen will severely hinder further development. GHC would recommend striking 3(a) and 3(b) requirements because the increased costs in producing LCFS-compliant electrolytic hydrogen, coupled with the loss in federal assistance, would create a scenario where MDI is not sufficient and the benefit envisioned by the program ends up never being used. (15d-GHC-191.4)

Comment:

The delivery requirement in 3(a) could unintentionally remove a substantial pool of renewable energy resources by limiting local balancing authorities. Assembly Bill 825 (2025) authorizes the California Independent System Operator to participate in an independently governed western regional energy marketplace with one of the stated benefits being an increase in shared renewable resources. A preliminary study noted that this expanded regional model could provide a reduction in natural gas generation within California and overall reduce emissions. Unfortunately, 3(a) could unintentionally frustrate those benefits by adding restrictions that may hamper resource utilization across balancing authorities. The CEC has already been on record requesting CARB amendments to accommodate the regional market structure envisioned in AB 825.

Referring to PUC 399.12 and aligning with AB 825 ensures the low carbon hydrogen is made from eligible renewable energy resources without overly limiting its source. (15d-GHC-191.5)

Comment:

Amendment 3(b) for low carbon hydrogen goes beyond the existing requirements in the LCFS. The inclusion of 3(b) would require electrolytic hydrogen producers to show matching on a monthly basis. Current LCFS requirements for matching are quarterly not monthly. “If a quantity of low-CI electricity (and all associated environmental attributes, including a beneficial CI) is supplied to the grid in the first calendar quarter, the quantity claimed for LCFS reporting must be matched to grid electricity used as a transportation fuel or for electrolytic hydrogen production no later than the end of the third calendar quarter.” Furthermore, the federal 45V matching requirements are annual until 2030. In both instances, the underlying policy justification is to give time to a nascent industry to scale and mature sufficiently enough to absorb these guardrails. With the renewable hydrogen industry facing significant economic challenges, it is not the right time to include these additional barriers to development and utilization. (15d-GHC-191.6)

Agency Response:

No changes were made in response to these comments. CARB appreciates that there are questions concerning electricity requirements for MDI-eligible low-carbon hydrogen. The 15-day Amendments include a change to section 95891(g)(2)(C)1, adding the text “or meets the eligibility criteria for”, providing a path for a facility to use MDI value to purchase low-carbon hydrogen if it can demonstrate that the low-carbon hydrogen meets the eligibility criteria in 26 U.S.C. § 45V(b)(2)(A)-(D), regardless of the end date for federal tax credit availability. See also Agency Response to comment O-8.26. This change provides a path for entities to produce MDI-eligible hydrogen that is not tied to receipt of the tax credit. Given these 15-day Amendments to extend 45V eligibility criteria for low-carbon hydrogen eligibility in MDI, and that eligible low-carbon hydrogen may qualify by satisfying any one of the requirements listed under section 95891(g)(2)(C), and that the 45V requirements include temporal matching requirements, which address the commenter’s feasibility concerns, further changes were not made.

However, Board Resolution 26-7 directs the Executive Officer to hold at least one public workshop on the MDI program prior to the issuance of any MDI allowances, and to report to the Board and evaluate and propose, as appropriate, future amendments to the MDI program prior to receipt of MDI applications and issuance of any MDI allowances. Any changes to the use of MDI allowance value for low-carbon hydrogen, including changes to definitions, delivery, or matching

requirements for renewable electricity to better align criteria with other programs and appropriately balance guardrails for electric grid emissions with incentives to deploy and scale electrolytic hydrogen production, may be considered as part of that public process.

Regarding adding references to PUC 399.12, see Agency Response to comment K-1.1a.

O-8.30a Comment:

Ensuring high climate standards for hydrogen eligible for Manufacturing Decarbonization Inventive Allocation.

In the ISOR, CARB proposed the Manufacturing Decarbonization Incentive Allocation, a new pathway for covered entities in the manufacturing industry to receive a greater rate of allowance allocation via an alternative cap adjustment factor to incentivize on-site decarbonization actions. In EDF's November 2025 comments responding to CARB's October workshop in which a concept for revising industrial allowance allocation was first outlined, we raised concern that this may be an unnecessary addition to the ongoing rulemaking process - particularly considering the successful track record of the existing output-based allocation system (OBA).

If CARB does continue to pursue this industrial decarbonization incentive, alongside the existing OBA system, there are important guardrails that will need to be established. This is true for any technology considered for this incentive, and particularly hydrogen, to ensure this incentive applies only to efficient and permanent on-site emissions reductions. As a general principle, CARB should account for the full emissions profile of hydrogen when considering eligibility applications, not only the on-site emission reduction potential, and should approve each production pathway independently. CARB should only award the Manufacturing Decarbonization Incentive Allocation (Incentive Allocation) to facilities sourcing hydrogen where upstream emissions, including methane where relevant, are fully quantified in the application, where projects are subject to an enforced leak detection and repair plan, and where electrification is not a feasible alternative.

a. Account for the climate warming impact of hydrogen releases when considering eligibility...

…Because of the significant climate impact of hydrogen emissions from leakage and operational releases, any uses of hydrogen as part of the decarbonization incentive must also capture information on hydrogen releases and factor its climate warming potential into the overall lifecycle assessment.

… CARB should also require, as a condition of Incentive Allocation eligibility, that manufacturers source their hydrogen from facilities with established hydrogen leak detection and repair (LDAR) plans. Several countries outside of the US, such as the United Kingdom and those within the European Union are already making significant progress in establishing regulation that monitors hydrogen emissions...

b. Upstream emissions, including methane, must be quantified to determine Incentive Allocation eligibility

...Accounting for the impact of both hydrogen and methane emissions can dramatically affect the overall climate benefit of hydrogen – and even whether it reduces overall emissions. For fossil-based hydrogen, a moderate level of hydrogen losses (10%) combined with upper end methane leakage (5.4%) can actually lead to an increase in warming in the near term by up to 50% compared to the fossil fuel applications they are replacing. For hydrogen produced via renewable powered electrolyzers, this amount of hydrogen losses could still reduce near-term benefits by 25%. CARB therefore should require manufacturers to account for both hydrogen and basin-specific upstream methane emissions associated with hydrogen use in the Incentive Allocation application process to substantiate any emission reductions claimed.

c. Ensure all electrolytic hydrogen eligible for the Incentive Allocation is 45V compliant

Any electrolytic hydrogen eligible for the Incentive Allocation must comply with the final 45V rules established by the U.S. Department of Treasury and the Internal Revenue Service. If eligibility includes imported hydrogen, CARB should ensure that such hydrogen is also 45V compliant. While electrolytic hydrogen produced within California is subject to the statewide emissions cap, imported hydrogen may not be from a jurisdiction with a cap on electricity sector emissions, potentially resulting in higher production emissions out-of-state. Ensuring imported hydrogen meets the same high integrity standard as in-state production prevents such an increase in emissions.

d. Hydrogen use should only be eligible for Incentive Allocation in applications where electrification is not a feasible alternative

...To avoid directing hydrogen to where it is not needed, CARB should require manufacturers to document that electrification is not technically or economically feasible before permitting hydrogen use within the Incentive Allocation.

e. Eligibility for Incentive Allocation should be determined independently for each hydrogen production process, consistent with 45V

Eligibility for hydrogen use should be determined for each hydrogen process separately. This approach prevents emissions reductions achieved in one process (which might yield near-zero emissions) from being combined with higher-emitting hydrogen

production processes, which would otherwise obscure actual emissions produced. By treating processes separately, CARB would encourage strategies that result in real emissions reductions rather than relying on emissions accounting gamesmanship. (45d-EDF-424.5)

Agency Response:

No changes were made in response to this comment. Please refer to Agency Response to Comment 424-1 in the Response to Comments on the Environmental Impact Analysis.

CARB further notes that each proposed application for MDI, including hydrogen projects, will be reviewed individually to determine whether it satisfies all applicable eligibility requirements, including 45V requirements. See Agency Response to comment O-26 for more details regarding changes to 45V eligibility criteria in MDI.

Regarding limiting hydrogen eligibility to applications where electrification is not technically or economically feasible, CARB does not agree that MDI eligibility should be restricted to a specific technology pathway. The MDI is designed as a performance-based incentive intended to support emissions reductions while providing facilities the flexibility to pursue eligible decarbonization strategies.

Board Resolution 26-7 directs the Executive Officer to hold at least one public workshop on the MDI program prior to the issuance of any MDI allowances, and to report to the Board and evaluate and propose, as appropriate, future amendments to the MDI program prior to receipt of MDI applications and issuance of any MDI allowances. Any changes to the use of MDI allowance value for low-carbon hydrogen, including changes to better align criteria with other programs and appropriately balance guardrails for upstream emissions with incentives to deploy and scale low-carbon hydrogen production, may be considered as part of that public process.

O-8.30b Comment:

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. It can be both intentionally released during production (i.e., through venting and purging) and

unintentionally emitted (i.e., through leakage) throughout its supply chain, causing atmospheric warming. Upstream methane emissions from fossil-based hydrogen vary substantially by basin, 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. 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. 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:

o Fully account for upstream methane emissions of fossil-based hydrogen by utilizing basin-specific leakage rates.

o Demonstrate high rates of carbon capture and permanent sequestration, with robust health, safety, and leakage guardrails…

o 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.

o Demonstrate that MDI manufacturing facilities and hydrogen source facilities have established and enforced hydrogen leak detection and repair (LDAR) plans.

o 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.

o 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. (15d-EDF-175.4)

Agency Response:

No change was made in response to this comment. Please refer to Agency Response to Comment 424-1 and Master Response 3 in the Response to Comments on the Environmental Impact Analysis.

Concerning electrification feasibility requirements, MDI hydrogen eligibility, and Board resolution directions, see Agency Response to comment O-8.30a.

The federal tax credit eligibility under 26 U.S.C. § 45V accounts for lifecycle emissions from the low-carbon hydrogen production process, whether from grid electricity emissions used in electrolysis of water or from upstream methane emissions associated with hydrogen produced throughs steam methane reformation paired with CCUS. Because CCUS in hydrogen production is addressed through 45V eligibility requirements, staff determined that no further changes were required. See Agency Response to comment O-8.26 for more details regarding changes to 45V eligibility criteria in MDI.

Regarding time matching requirements for renewable electricity supplied for electrolytic hydrogen production, see Agency Response to comment O-8.29.

Concerning leak detection and LDAR requirements for hydrogen eligibility under MDI. Staff agree this is a topic for future research and information gathering and potential future changes to the Mandatory Reporting Regulation, which is outside of the scope of this rulemaking. Work is ongoing at CARB, pursuant to SB 1075, to support the deployment of low-carbon hydrogen including analysis of potential leak detection systems.

O-8.31a Multiple Comments: Inclusion of CCUS for MDI allocation

Blue Planet similarly urges CARB to expand the list of eligible decarbonization strategies to explicitly include CCUS strategies. The Proposed Amendments currently focus on electrification, renewable energy, hydrogen, and low-carbon fuels, all of which are essential pathways, but supporting CCUS technologies will be essential to achieve significant emissions reductions in sectors with process emissions, such as cement. Indeed, CARB's 2022 Climate Change Scoping Plan highlights CCUS as a necessary technology that advances the objectives of the Incentive Allocation, stating, "Carbon capture and sequestration (CCS) will be a necessary tool to reduce GHG emissions and mitigate climate change while minimizing leakage and minimizing emissions where no technological alternatives may exist."

Adopting a technology-neutral framework that supports a broad portfolio of decarbonization solutions will help reduce overall compliance costs, improve program equity, and help the state reach its 2045 carbon neutrality goals. Including CCUS as an eligible technology will complement electrification and fuel-switching strategies while providing a more scalable solution to support in-state emissions reductions and avoid emissions leakage. (45d-BP-6.4)

Comment:

The Proposed Amendments establish a new manufacturing decarbonization incentive allocation that would provide additional allowances to eligible manufacturing facilities that invest in technologies to reduce their covered emissions. This is a meaningful provision, and we support its inclusion in the Proposed Amendments.

However, the list of eligible GHG emission reduction activities specified in section 95891(g)(2) does not currently include carbon dioxide removal. The current eligible categories address emissions reductions from energy use and fuel switching. Research shows that deploying CDR alongside emissions reductions lowers the overall cost of decarbonization. For manufacturing facilities with hard-to-abate process emissions that cannot be addressed through fuel switching or electrification, CDR is a cost-effective and viable pathway to deep decarbonization.

CARB notes that the purpose of the allocation is to “incentivize a set of GHG emissions reduction strategies that can achieve GHG emissions reduction at facilities thereby decreasing compliance costs and reducing emissions leakage risk.” CDR serves this purpose: a manufacturing facility that procures high-quality CDR credits to address its residual process emissions is, in effect, reducing its net GHG footprint and its compliance cost. Excluding carbon removal from the list of allowable activities constrains the pool of eligible decarbonization strategies and may inadvertently preclude more cost-effective pathways for certain industrial categories. We note that adding CDR to the list of eligible pathways would be consistent with the ISOR’s description of the decarbonization challenge facing California’s industrial sector, which explicitly identifies “capture and sequestration or use of CO2 emissions that cannot otherwise be abated” as one of the strategies that industrial sources will need to deploy to meet climate targets. (45d-ECDRSB-323.2)

Comment:

Include CCUS among the activities eligible for MDI funding. The MDI is designed to incentivize industrial decarbonization through 2038. Excluding CCUS from that framework means that the program's primary decarbonization incentive does not support the pathway that addresses the majority of cement sector emissions. At a minimum, CCUS-related capital expenditures (e.g., front-end engineering and design, environmental review costs, and capture equipment) should be eligible for MDI support. These are precisely the kinds of high-cost, long-lead-time investments the MDI was designed to unlock. (45d-CSCME-352.5)

Comment:

Expand the scope of eligible activities to include CCUS, expanded production of lower-clinker cements, and industrial waste heat recovery. The current list of eligible pathways

excludes the decarbonization strategies most relevant to the cement industry, which accounts for nearly 60% of GHG emissions among potentially eligible industries. (45d-CSCME-352.10)

Comment:

Include CDR As an Eligible Pathway Under the New Manufacturing Decarbonization Incentive

Charm supports the inclusion of a new manufacturing decarbonization incentive that allocates additional allowances to qualifying facilities that deploy technologies to lower their covered emissions in the Proposed Amendments. Given that the industrial sector accounts for roughly 18.6% of total statewide GHG emissions, addressing the process emissions of these facilities will prove integral.

To ensure this incentive achieves its stated purpose, it is critical that CDR be included as an eligible pathway to generate the progress needed to meet the state's climate requirements. However, as currently written, Section 95891(g)(2) limits eligible pathways to those that address emissions reductions from energy use and fuel switching.12 While these are essential pathways, California needs a portfolio approach to achieve our decarbonization goals. There are hard-to-abate industrial facilities where emissions reductions from energy use and fuel switching will not be feasible. Without recognizing CDR as an eligible pathway, the program risks constraining compliance options and increasing overall decarbonization costs for sectors that lack feasible abatement alternatives. Charm therefore recommends that CARB explicitly include CDR technologies consistent with SB 905 as an additional pathway for industrial carbonization. (45d-CI-354.2)

Comment:

CRC supports creation of the Manufacturing Decarbonization Incentive as a tool to reduce leakage and promote investment. However, the incentive should: 1. Be available to all emission-intensive, trade-exposed industries; and 2. Explicitly include CCUS as an eligible decarbonization activity. As proposed, the revised rule provides Decarbonization Incentive eligibility for a host of technologies that result in "…reduced or avoided onsite combustion of fossil fuels…". The Decarbonization Initiative should focus on decarbonization, not simply the reduction of use of a given fuel sources. CCUS, deployed to fossil fuels generation, achieves the goal of decarbonization and should be included with the existing 6 means of qualifying for the Incentive. If CCUS is excluded, the program effectively omits one of the Scoping Plan's primary decarbonization pathways. Oil extraction, refining, and certain forms of electric generation are identified in the Scoping Plan as sectors requiring CCUS for deep decarbonization. Yet, these are specifically excluded from the Decarbonization Incentive. Retrofitting existing steam and

cogeneration facilities with carbon capture is capital-intensive and unlikely to proceed without additional support. Expanding the Decarbonization Incentive to include CCUS in those sectors would:

- Accelerate deployment of essential infrastructure,
- Reduce compliance costs over time,
- Mitigate leakage risk, and
- Align regulatory design with CARB's long-term climate modeling. (45d-CRC-379.8)

Comment:

Expand eligibility of the Manufacturer Decarbonization Incentive (MDI) Program. MDI, as proposed, is a great start for supporting deep decarbonization technologies and investments. To maximize the benefits of MDI, CARB should: 1) expand the project types to address carbon capture, and 2) expand eligibility to project development (capital expenditures) and procurement (operational expenditures) consistently across all categories.

Carbon capture, utilization, and storage (CCUS) is a key investment category for cement. Even as related CCUS protocols may be in development by CARB, it is essential that CARB make this rulemaking, and the establishment of MDI, sufficiently forward-looking with the inclusion of CCUS as eligible in MDI. (45d-NCCC-418.3)

> **Agency Response:**
>
> Changes were made in response to these comments. In the 15-day Amendments, MDI-eligible expenditures were expanded to add a new eligible project category for CCUS related expenses. Project eligibility in this category was also extended to refineries and the oil and gas sector. This category is contingent on Board approval of a quantification methodology that accounts for the sequestration or utilization of captured CO_2 emissions projects and adoption in a subsequent rulemaking that incorporates the methodology into the Cap-and-Invest Regulation.

O-8.31b Comment:

To further strengthen the MDI, we recommend that CARB provide additional detail and guidance on how the allowance can most effectively support investment in carbon removal and sequestration technologies by eligible entities. There are a number of CDR technologies today that can play a key role in helping hard-to-decarbonize sectors reduce and remove GHG emissions, and ensuring that the MDI program is clearly designed to enable investments in these technologies is critical. (15d-CI-115.3)

Agency Response:

No change was made in response to this comment. To ensure the emissions integrity of CCUS projects funded with MDI allowance value, eligible CCUS technologies must meet a Board-approved quantification methodology, which has not yet been incorporated into the Regulation. Staff encourage the commenter to remain engaged in future rulemaking, including the SB 905 rulemaking.

O-8.32 Multiple Comments: General Support of Including CCUS in MDI

Maintain the eligibility of CCUS projects for the Manufacturing Decarbonization Incentive that CARB added in the 15-day changes (15d-BAC-61.10)

Comment:

We support the proposed 15-Day Amendments and are particularly heartened to see the expansion of the Manufacturing Decarbonization Incentive (MDI) to include key carbon removal and sequestration pathways. (15d-CI-115.1)

Comment:

Charm wishes to express its sincere appreciation for the development of the MDI and, most notably, for the adjustment to the eligibility criteria to include “sequestered or utilized captured carbon dioxide” in §95891(g)(2)(H). In our response to the proposed 45-Day Amendments, we highlighted that “there are hard-to-abate industrial facilities where emissions reductions from energy use and fuel switching will not be feasible” and “without recognizing CDR as an eligible pathway, the [Cap-and-Invest] program risks constraining compliance options and increasing overall decarbonization costs for sectors that lack feasible abatement alternatives." For this reason, we are appreciative of the inclusion of sequestered or utilized captured carbon dioxide as an eligible GHG emissions reduction activity in the Manufacturing Decarbonization Incentive Allowance Allocation. (15d-CI-115.2)

Comment:

We support the inclusion in the proposed 15-day amendments of “sequestered or utilized captured carbon dioxide” as an eligible activity within the Manufacturing Decarbonization Incentive (MDI) that entities in the program can use to support investment in and deployment of carbon cutting technologies and projects. (15d-CCSC-156.1)

Comment:

CRC appreciates that the 15-day amendments add a CCUS pathway to the Manufacturing Decarbonization Incentive (MDI) under Section 95891(g)(2)(H). This

change acknowledges CCUS as a core decarbonization pathway, critical to the 2022 Scoping Plan and achieving California's GHG targets. (15d-CRC-161.5)

Comment:

We strongly support CARB's direction to include carbon capture, utilization, and storage (CCUS) as a mechanism to achieve emissions reductions under the MDI framework. The notice proposes a new eligible project category for equipment that captures CO2 emissions that are verified as sequestered or utilized, contingent on development and Board approval of an appropriate quantification methodology and incorporation into the Regulation in a subsequent rulemaking. We support this approach and encourage CARB to continue advancing the necessary quantification and verification framework so that CCUS can be credibly and transparently implemented. (15d-1PF-168.2)

Comment:

We write in support of a compliance-grade pathway for carbon dioxide removal (CDR) within the proposed amendments to the Manufacturing Decarbonization Incentive (MDI) set forth in CARB's 15-day notice, issued April 14, 2026. Specifically, our organizations welcome the inclusion of language authorizing manufacturing facilities to apply MDI allocation allowances toward costs related to projects that capture and store CO_2 emissions, subject to a Board-approved quantification methodology incorporated pursuant to section 95852.3. (15-CRO-170.1)

Comment:

The amended language authorizing use of MDI allocation allowances to cover costs associated with the capture and storage of carbon dioxide sends a critical signal to CDR developers and investors that California is establishing compliance-grade pathways for carbon removal. This is precisely the kind of durable demand signal that early-stage CDR projects need to mobilize private capital, lower long-term costs, and accelerate commercialization. Integrating this mechanism into Cap-and-Invest will create a durable demand signal for engineered CDR and CCUS projects, unlocking private investment in California-based innovation. (15d-CRO-170.3)

Comment:

Manufacturing Decarbonization Incentive (MDI)

PG&E supports CARB's modifications to the 15-day package to expand technology eligibility to include carbon capture and sequestration (CCS) and exempt biomass-derived fuels. As CARB's 2022 Scoping Plan identifies, CCS and clean fuels are important decarbonization strategies that are needed to achieve California's carbon neutrality goal and including them as eligible for the MDI could increase opportunities for California industries to decarbonize cost-effectively. (15d-PG&E-199.9)

Agency Response:

No changes were made in response to these comments. Staff appreciates the commenters support for the inclusion of CCUS in the MDI.

O-8.33 Multiple Comments: Technical challenges for eligible MDI projects

Even if eligible, WOR would have difficulty taking advantage of the incentives because there are limited opportunities to improve operating efficiencies or to decarbonize operations, and limited capital available. Because WOR's primary products are materials used by construction industries, WOR operates with low product margins; prices for construction materials are highly influenced by infrastructure project and housing construction project demands. In addition, lower cost asphalts can be imported into the State of California via truck and rail. WOR must therefore carefully evaluate capital projects and expenditures to ensure that it remains competitive. As discussed during the meeting on March 4, electrification may be technically feasible for some process heaters and boilers; however, electrification projects face numerous hurdles including, but not limited to, cost effectiveness and constraints with California's electrical grid. WOR does not believe these hurdles can be overcome before the dramatic reduction in allocations that will occur in 2031 especially considering that WOR has had to make significant capital expenditures in recent years to comply with the emission reductions mandated by Rule 1109.1 of the South Coast Air Quality Management District (SCAQMD). These investments may not have been made had the facility known that so many of its allocations would disappear in 2031. (45d-LTC-358.3)

Comment:

It may be tempting to view MDI as purely an industrial policy instrument. It is not. If industrial modernization succeeds, California retains production of fuels, cement, steel, glass, and refined products. That stabilizes supply chains and moderates price volatility. If modernization fails and facilities close, imports fill the gap. Transportation costs rise. Import carbon intensity may be higher. Consumer prices increase. Every compliance design decision that increases unnecessary friction in MDI increases the risk that consumers ultimately pay more. Affordability through design therefore requires that MDI be structured as a practical capital-deployment mechanism, not as a theoretical offset to declining free allocation. (45d-CBC-446.12)

Comment:

Ag Council supports CARB's efforts to minimize leakage through a robust assistance factor, allowance allocation and various incentive programs. We also support CARB's inclusion of additional allowances for those who can move to electrification and for those who can utilize the Manufacturing Decarbonization Incentive Allocation, however, many in the food processing sector have already achieved as much as possible and any

additional projects will have minimal ROI when compared to the upfront investment costs. These entities will have to incur additional costs as part of the declining cap, without any room for further cost reductions. Additional alternative solutions should be considered when addressing leakage for those entities that have reached technological capacity on the climate front. (45d-ACC-433.7)

Agency response:

No changes were made in response to these comments. Emissions leakage risk has long been considered and addressed by the Cap-and-Invest Program. The Proposed Amendments increase near-term leakage mitigation support through an increased CAF for most industrial sectors from 2027-2030. CARB plans to continue assessing emissions leakage risk for covered facilities including any updated data and information available and evaluating if additional tools or mechanisms will be needed for the post-2030 Program in future rulemaking.

MDI allocation is designed to unlock high-cost investments in low-carbon production methods and fuels, including significant upfront capital costs needed to modernize production methods and reduce emissions from industrial manufacturing facilities in support of achieving the 2030 and 2045 GHG reduction targets. The most feasible GHG reduction projects will vary by facility, however the full list of MDI-eligible projects specified in section 95891(g)(2)(A)-(H) of the Proposed Amendments is aligned with the cost-effective emissions reduction measures identified in the 2022 Scoping Plan Update for achieving deep decarbonization in industrial sectors.

MDI allocation also helps further minimize emissions leakage risk by reducing facility covered emissions that incur a compliance obligation in the Cap-and-Invest Program. Potential changes to further strengthen the MDI program in support of these goals will also be considered in a future rulemaking.

O-8.34 Comment:

Coordinate with the CPUC to pair the Incentive Allocation with industrial electricity rate reform. Our analysis shows that electricity prices are the primary barrier to electrification for many facilities. Even accounting for the efficiency advantages of industrial heat pumps and other electric technologies, electricity is not cost-competitive with natural gas for industrial process heating under today's rates. Supporting industrial decarbonization therefore requires active coordination with the CPUC to make electrification the more cost-effective option over the long term. (45d-IL-UCSB-334.2)

Agency Response:

No changes were made in response to this comment. The California Public Utilities Commission is responsible for rate setting for electric investor-owned

utilities. As such, industrial electricity rate reform is outside the scope of this rulemaking and CARB's authority. However, CARB continues to coordinate closely with the CPUC on issues related to electricity sector decarbonization including electricity and electricity rate structures needed to support the industrial sector.

O-8.35 Comment:

We provide draft estimates of the maximum annual uptake of CARB's proposed Manufacturing Decarbonization Incentive (MDI). Based on our calculations, we estimate that at maximum 27.05 million Build Up California Allowances (BUCAs) would be allocated in 2028 if all 94 eligible facilities participated and if CARB issued the maximum allowed quantity of BUCAs. We view this as a probable upper bound for 2028 BUCA allocations. Further work will refine our maximum estimate into an expectation of BUCA allocation, which we anticipate will be lower than 27.05 million BUCAs in 2028. (15d-CPC-196.7)

Agency Response:

No changes were made in response to this comment. CARB staff cannot verify the validity of a third-party estimates for MDI allowance availability. However, staff note that actual MDI issuance for any compliance period depends on the number of applications received and approved, as well as actual production levels as MDI allocation is determined through the product-based allowance allocation methodology.

Board Resolution 26-7 directs the Executive Officer to annually make publicly available the number of MDI applications received and approved, and the number of MDI allowances issued in total and by sector, MDI allowances remaining, MDI allowances returned, and MDI allowances retired.

O-8.36 Multiple Comments: Clarify Future MDI Allowance Availability

It is unclear whether retired allowances, particularly those removed from the budget, will automatically flow into the Manufacturing Decarbonization Incentive fund, and if so, how those allowances will be structured (for example, by vintage year). While this approach appears to be applied in the near term (approximately 118 million allowances retired between 2027–2030 are directed into the incentive fund), clarification is needed on whether this mechanism will continue in future compliance periods. Understanding this is critical to assessing both the scale and timing of available funding. (15d-CFCA-76.3)

Comment:

There is limited information regarding how the fund will receive ongoing allocations beyond the initial 118.3 million allowances. If the program is intended to support long-term decarbonization investments, it must have a predictable and durable funding

stream rather than a one-time allocation. Without this, facilities will face significant uncertainty when evaluating whether to undertake multi-year, capital-intensive projects. (15d-CFCA-76.4)

Comment:

The currently proposed funding level is not commensurate with the scale of investment required across California's industrial sector. Refinery modernization and other emissions-reducing upgrades often require substantial capital expenditures, particularly for aging facilities operating at high utilization rates. Without a mechanism to both replenish and expand the incentive pool over time, the program risks being oversubscribed and insufficient to drive meaningful emissions reductions at scale. (15d-CFCA-76.5)

Comment:

California is already experiencing reduced refining capacity due to recent facility closures. At the same time, remaining refineries are aging and operating at high utilization rates, contributing to an increase in unplanned maintenance outages. Many of these facilities require significant capital investment to modernize infrastructure, improve efficiency, and reduce emissions. These upgrades would deliver dual benefits: lowering emissions intensity while improving operational reliability and reducing supply disruptions. However, these investments can only be justified if operators have confidence in both the availability of incentive support and the broader regulatory environment. The Cap-and-Invest program has a clear opportunity to align environmental objectives with operational realities by explicitly supporting facility modernization projects and ensuring that the decarbonization fund is sufficiently robust, scalable, and predictable over time. (15d-CFCA-76.6)

Comment:

Neste supports the proposal to not remove 118.3 million credits from the allowance budgets through 2030 and instead use these allowances to create the Manufacturing Decarbonization Incentive Allocation Allowances. … Neste recommends that CARB evaluate how to continue the Manufacturing Decarbonization Incentive Allocation after the 118.3 million credits are exhausted, especially in light of cuts in federal investments in renewable energy. (15d-N-77.1)

Agency Response:

No changes were made in response to these comments. Per section 95891(g) of the Proposed Amendments, MDI allocation is funded with no more than 118.3 million allowances in the Build Up California Reserve Account. MDI allowances are only offered for 2028-2035 industrial allowance allocation, or until the year in which the allowances in the Build Up California Reserve Account are exhausted,

whichever is first. MDI allocation to any individual facility is bounded by the flat CAF modifier of up to 0.8 as applied to the facility's standard industrial allocation calculated in section 95891(b) or (c), and will only be provided to eligible facilities with approved MDI applications that meet the requirements of sections 95891(g)(5)-(6). Please also refer to Agency Response to comment 15-76-2 in the Response to Comments on the Environmental Impact Analysis.

O-8.37 Multiple Comments: Unintended market impacts of MDI

The MDI rules create a clear incentive for early drawdown, which risks flooding the market with allowances. Under the proposed structure, compliance entities would submit proposals for a fixed dollar amount of investment in exchange for an equivalent dollar amount of allowances valued at the time of the proposal. With CCA prices currently at or near the auction floor and expected to rise over the compliance periods, this design creates a clear economic incentive to lock in commitments as early as possible — securing the maximum number of allowances while they are near the floor, knowing that they are likely to appreciate in value over time. (15d-CCF-50.3)

Comment:

Because the Reserve is finite and allocated on a first-come basis, compliance entities face a use-it-or-lose-it incentive: any volume they do not secure early may be claimed by competitors. That dynamic gives all entities, including those without a strong near-term project pipeline, a reason to apply as quickly as possible and identify qualifying investments later.

Rational participants will respond to the design incentives by front-loading applications. The likely result is a concentrated draw on the reserve in the first few years of the MDI program (2028-2030), rather than a measured release calibrated to the budget trajectory the Board adopts. A drawdown of that shape would inject substantial supply into the market over a short window, with knock-on effects for auction performance, GGRF revenue predictability, and price discovery — the same set of dynamics we flagged in our March letter regarding back-loaded budget reductions, operating now through an additional channel. (15d-CCF-50.4)

Comment:

Together, the price-arbitrage incentive and the competitive-claiming incentive point in the same direction — a concentrated, early run on the reserve that the current design does not constrain.

We see this as the most consequential design issue in the 15-day package. We respectfully recommend an adjustment to meaningfully reduce the supply volatility risk: An annual limit on issuance from the MDI, calibrated so that the release of MDI

allowances is distributed evenly across 2028-2035, rather than concentrated in its earliest. (15d-CCF-50.5)

Comment:

The proposed design of the MDI program risks creating unintended incentives to delay investments and gain windfall profits. As currently laid out, recipients of MDI allowances do not have to show any investment until two compliance periods have passed and then have the option to return allowances (at the average value of the quarterly auctions in the initial allocation year) for any unspent funds. This flexibility creates a strong incentive for all entities to apply for allowances and then to delay investments to provide time for potential allowance price increases. For example, if an entity receives one million allowances at a value of $30, the entity can wait two compliance periods to see if the price increases, which one would expect to be at least at 5% plus inflation assuming the price floor holds. If the price eventually increases to $60, for example, the entity can sell allowances, invest the $30 million as originally proposed and reap $30 million in windfall profits. If the price falls, the entity has no price risk and can return the allowances at the original year's price as recognized by CARB.

To prevent such incentives, CARB should require entities to sell all MDI allowances on consignment, providing transparency to CARB on the amount received. Further, they should be required to invest the full amount received in either decarbonization or compliance. If entities do not make the proposed investments within the allowed period, in addition to returning allowances, entities should also be required to pay back the monetary amount received with interest. (15d-Lubowski-89.3)

Agency Response:

No changes were made in response to these comments. The Proposed Amendments remove 118 million allowances from 2027-2030 annual budgets to align the Program with technical updates to the GHG Emissions Inventory, remove a total of over 1 billion allowances from 2027-2045 budgets to align with 2030 and 2045 targets, and provide up to 118 million allowances for MDI allocation. MDI allowances are only released to the market in exchange for demonstrable investments in low-carbon production methods and fuels that accelerate the pace of industrial emissions reductions needed to achieve the State’s 2030 and 2045 GHG reduction goals while minimizing the risk of emissions leakage.

MDI allocation is one of many Program mechanics that affect the allowance supply in any given year (such as allowance banking, holding limits, and allowance removals for up to 6% compliance offset use).

In addition, the MDI allocation mechanism includes guardrails on projects, usage limits, time limits, and eligibility criteria. Specifically, the entity needs to report on the use of MDI allocation allowance value no later than June 30 of the year following the end of a compliance period in which a facility received manufacturing decarbonization incentive allocation, and June 30 following each subsequent compliance period until the MDI allocation allowance value is fully spent or unused allowances are returned. Reporting includes describing the project progress, resulting changes in facility energy use and reductions in GHG emissions, and the status of all MDI allocation allowance value during the compliance period. The value of MDI allocation allowances received by a facility must be spent on eligible activities and achieve GHG emissions reductions by the end of two compliance periods following the compliance period of the MDI allowance budget year, providing 6-7 years for facilities to use MDI value. If an entity does not use all of the MDI allocation allowance value on its project, it must return that value to CARB. This protects against a potential windfall scenario the commenter raised.

Given the limited subset of eligible facilities and that MDI allocation is limited by both annual production and a flat CAF adder, is unlikely that more than 30 million allowances would be awarded in the first year. As noted in Resolution 26-7, and comments in O-8.12 preliminary third-party analyses have similar assessments. Further, Resolution 26-7 directs staff to evaluate, by July 1, 2030, to evaluate the impact of the MDI program on the effectiveness in reducing covered facility emissions, and to propose future amendments, as appropriate, on the following:

- the overall quantity of MDI allowances;
- compliance period limits on awarding of MDI allowances;
- further award limits by sector;
- eligible project types prioritizing those that could achieve both GHG and criteria and/or air toxics pollution benefits and/or other co-benefits including workforce transition; and
- any other appropriate changes to ensure the MDI program supports the program and continues to reduce emissions to help achieve the state’s climate targets.

CARB staff actively monitor and surveil the market to ensure that registered entities comply with the Regulation including all trade rules and will likewise do so for the requirements of MDI allocation.

Please refer to Master Response 4 in the Response to Comments on the Environmental Impact Analysis regarding impacts of MDI allocation on emissions integrity and Program revenues. See Agency Response to comment O-8.46 regarding consignment of MDI allowances.

O-8.38a Multiple Comments: Impact of MDI on emissions integrity, affordability, and Program revenues

Comment:

Remove the Manufacturing Decarbonization Incentive (MDI) mechanism from the proposal and retire 118M allowances so that regulations can be swiftly adopted to secure program outcomes this fall, without harming the integrity of the emissions cap or jeopardizing the 2030 climate target. (15d-Wechsler-59.1)

Comment:

I strongly oppose the proposed "manufacturing decarbonization incentive" and other giveaways to oil and gas industry players who have long profited while burdening Californians with dirty air and rising energy costs. As currently designed, the program sets the emissions cap too high to meet California's climate goals or meaningfully improve air quality for the communities most harmed by pollution. These funds should instead be directed toward electricity bill credits for ratepayers and community investment programs that deliver cleaner air and water, safe housing, and accessible transit. I urge CARB to lower the emissions cap, eliminate or significantly reduce industry giveaways, and increase direct credits on electricity bills. (15d-Clayman-81.1)

Comment:

The MDI could set a troubling precedent. If CARB sidesteps the official cap and issues a new pool of free allowances for certain stakeholders, other C&I stakeholders may also demand their own separate pools in the future. Moreover, once established, separate accounts like the MDI could persist and expand. If so, over time, the official C&I cap may stop serving as a meaningful measure of the program's overall climate ambition. (15d-Meng-88.2)

Comment:

CARB should put the MDI program under the official C&I cap. This can be done as simply as striking the new Section 95841(b) text in the 15-Day Amendments, which creates a separate tranche of allowances distinct from the official cap in Table 6-2. A more involved change would be for CARB to revert back to the January 2026 45-Day Proposed Amendments MDI language. Cap-and-invest programs have traditionally maintained a clean division between climate ambition (a fixed, binding cap) and redistribution (how value under that cap is allocated). The MDI as proposed in the 15-

Day Amendments muddies that division by allowing some compliance entities to individually expand the cap. I recommend that CARB preserves the foundational environmental integrity of California's pioneering C&I program by placing any MDI allowances under the program's official cap. (15d-Meng-88.3)

Comment:

Long-term climate investments depend on stable expectations of future prices. Accommodative measures like these to the MDI provide excessive allowances to emitters, increase the overall cap and distort the price of emissions. The mispricing of emissions naturally leads to the misallocation of capital, discouraging the investment in decarbonization technology that a steadily increasing price on emissions is designed to induce.

CARB should prioritize a consistent policy signal. Adopting the MDI as currently outlined will likely result in sustained low prices, reduced state revenue, and a failure to reach the marginal cost of abatement necessary for behavioral change. (15d-Litterman-94.3)

Comment:

The primary objective of the C&I program is to reduce emissions. The January 2026 proposal to remove 118.3 million allowances was not a result of increased ambition, but rather a necessary adjustment to account for updates to CARB’s GHG Emission Inventory. The April 2026 proposed amendments effectively reverse necessary technical adjustments by reintroducing up to 118.3 million allowances into the market via the Manufacturing Decarbonization Incentive (MDI) and Build Up California Reserve. This shift from removal to redistribution creates critical risks: Weakened and Distorted Price Signals: Reintroducing up to 118.3 million allowances represents a significant expansion of supply that distorts price signals. California allowances cleared at $27.94 during the February 2026 auction—less than half the price of EU, UK, and Washington markets. Allocations to the MDI risk pushing secondary market prices below the auction reserve price.

Revenue Loss: Analysis from UC Santa Barbara’s Environmental Markets Lab suggests that if fully utilized, the MDI could lower auction revenue by $4 billion over the next four years. This would result in a $2.3 billion reduction for the Greenhouse Gas Reduction Fund (GGRF) and $1.7 billion for the California Climate Credit. (15d-Litterman-94.2)

Comment:

While the program is a vital tool for California’s climate goals, the April 2026 amendments significantly weaken its ambition. At a minimum, CARB should remove and retire 118.3 million allowances from the 2027-2030 annual budgets without

reintroducing these allowances into the Build Up California Reserve. (15d-Litterman-94.1)

Comment:

Reduce give aways to the oil and gas industry, especially by eliminating the new "manufacturing decarbonization incentive" SUPER BAD CHOICE

Honor the letter on April 27, 2026 from 28 CA legislators to stay the course on rulemaking to meet the 2030 targets and

• Apply the same rigor and accountability to any compliance instruments generated under the MRI program as we do for offsets, namely, that they be REAL, PERMANENT, QUANTIFIABLE, VERIFIABLE, AND ADDITIONAL EMISSIONS REDUCTIONS, THERE MUST BE ACCOUNTABILITY ON PUBLIC SPENDING AND ENVIRONMENTAL JUSTICE

• Provide clarity that the 2030 target remains in force, and that the MDI program not be permitted to expand the emissions cap, including by limiting the total quantity of MDI related instruments and requiring a commensurate adjustment to the allowance budget (15d-ICANCCC-91.4)

Comment:

CARB's proposal, rather than adhere to the will of the Legislature and clear statutory direction, adds up to 118 million metric tons of allowances back into the market, providing at least $3.5 billion in subsidies that will only prolong our reliance on fossil fuels and their disproportionate impacts on public health in environmental justice communities. This contradicts CARB's Initial Statement of Reasons about what was required for California to reach our 2030 emissions target. ... In addition to diluting the market signal of the cap—increasing emissions and reducing demand for allowances—the proposed Manufacturing Decarbonization Incentive (MDI) under the newly created Build Up California Reserve lacks any enforceable mechanism to demonstrate real, permanent, quantifiable, and verifiable emissions reductions. The MDI resembles CARB's existing offsets program, but without any of the accountability measures required by law.

Speeding progress towards the 2030 emissions target will allow us to accelerate investments to provide lasting relief for the pain at the pump families are struggling to shoulder. Instead, this proposal entrusts the very oil industry that is profiteering from President Trump's war to somehow deliver savings to the California drivers they are holding over a barrel. The Legislature worked for more than a year to reform and reauthorize the program. We did so well in advance of the program's sunset to provide certainty to regulated industries, to stabilize the market for allowances, and to send a

clear signal that California is committed to the energy transition. The law reflects a hard-fought compromise, and a deliberate balance between ambition and affordability. AB 1207 reaffirmed our statutory commitment under SB 32 (Pavley, 2016) to achieve “at least 40 percent” below 1990 levels by 2030. This clear commitment includes unambiguous direction “to achieve the maximum technologically feasible reductions in greenhouse emission to achieve the requirements” of our 2030 and 2045 targets (Cal. Health & Safety Code §38566 and §38562.2). These are not optional suggestions: these targets are “requirements” that must be “achieved.” ... Cementing reliance on fossil fuels through costly, inefficient subsidies is not an affordability strategy and will not prevent the next gas price spike. Investments in electric vehicles, transit, livable communities, and innovation to help lower technology costs for working families will immunize us from the oil wars of the future, while creating jobs here at home. Moreover, the proposal also lacks any assurance that CARB, the Energy Commission or the Division of Petroleum Market Oversight will have the data or accountability tools they need to avoid saddling California taxpayers with further costs like the federal government’s “petroleum exclusion,” which shields refineries from Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) cleanup liability.

There are better options available to stabilize in-state fuel supply through the energy transition that preserve the integrity of California’s carbon market. We anticipate many such solutions will be highlighted in the Transportation Fuels Transition Plan and Transportation Fuels Assessment, due this month, and we are ready to engage with the Administration and industry to build on our work. CARB must stay on course in this rulemaking to meet the 2030 targets while doing the following:

1. Apply the same rigor and accountability to any compliance instruments generated under the MDI program as we do for offsets—namely, that they be real, permanent, quantifiable, verifiable and additional emissions reductions—there must be accountability on public spending and environmental justice.

2. Provide clarity that the 2030 target remains in force, and that the MDI program not be permitted to expand the emissions cap, including by limiting the total quantity of MDI-related instruments and requiring a commensurate adjustment to the allowance budget. (15d-SHS-9.1)

Comment:

The creation of the BUCRA account separate from the program allowance budgets sets a dangerous precedent for the integrity and predictability of the program, paving the way for new special purpose reserves in the future.

The proposal reduces 118.3 million from the allowance budgets through 2030 but then proposes to essentially shift or "backload" these volumes to later years through the MDI

program. Limits on annual MDI allocations should ensure that emissions cannot exceed California's statutory climate goals.

Even if this requires a follow-up rulemaking process, it would strengthen program credibility and be more consistent with prior practice for CARB to set the allowance budget to account for the BUCRA "under" rather than "outside" of the cap, just as the APCR and all other free allocation is accounted for. This would also be consistent with the policy direction to account for offsets under the cap to help assure the environmental integrity. This could be implemented together with stricter requirements on MDI as discussed below. (15d-Lubowski-89.2)

Comment:

While there are serious concerns about MDI implementation details — eligibility rules, the size of allocated MDI allowances, resulting auction revenue implications,1 etc. — those are, in my view, subordinate to a more fundamental concern: the MDI, as currently structured, creates a separate allowance account outside the program's official cap that a subset of regulated entities can use for compliance. In effect, the MDI is a subsidy that allows certain regulated entities to individually relax the cap.

The environmental integrity of any cap-and-invest program rests on a bedrock principle: the aggregate emissions cap is fixed and not subject to manipulation by individual regulated entities. The MDI proposal departs from this principle. Rather than allocating MDI allowances from within the existing cap (i.e., Table 6-2 in the C&I regulations), the proposed regulation creates a separate "Build Up California Reserve Account" allowance pool that is distinct from the cap. Compliance entities that make qualifying clean energy investments receive these allowances for free and may use them for compliance. This enables regulated entities to individually expand the supply of allowances, relaxing the aggregate emissions constraint through their investment decisions.

While other existing C&I provisions allow CARB to increase the supply of allowances, this feature of the MDI — that polluters can individually expand the cap — is novel to C&I. For example, the price ceiling and Allowance Price Containment Reserve tiers also release cap-busting allowances, but those are triggered by a system-wide circumstance (the market allowance price), not by the behavior of an individual regulated entity. Offsets are the closest analogue, but even they differ: offsets lower compliance costs and may increase global emissions when non-additional, whereas the MDI makes compliance profitable (why else would an entity apply?) and unambiguously increases global emissions. (15d-Meng-88.1)

Comment:

…to ensure the program is effective, we emphasize the importance of establishing clear and robust guardrails should the MDI proposal be adopted. As such, the following MDI-related considerations warrant priority attention from CARB: Preserving Market Signals: We believe it is critical for CARB to avoid near term oversupply of BUCAs, which could undermine Program integrity and cause market distortion. We hope the proposal will meter out BUCAs in modest increments over several compliance periods at the least to avoid oversupply.

Market Oversight: We strongly support CARB's plans to carefully track any MDI allowances that are awarded as well as their subsequent retirements to ensure the market has full knowledge of the initiative's impact on investments and GHG reductions. We encourage CARB to manage the MDI in a manner that supports CARB's ongoing interest in a transparent and well-run market-based program.

Commitment to Statutory Targets – and Careful Monitoring & Adjustments: Since BUCAs are distributed "outside-the-cap", they have the potential to undermine California's ability to meet its statutory 2030 and 2045 emissions targets without careful monitoring and adjustments. It is encouraging to see that the MDI FAQ sheet mentions that CARB is ready to "make adjustments as needed" to stay on track for its statutory climate targets. We recognize that BUCAs need to be considered in context with other elements of the revised regulation including the additional allowance retirement provisions per AB 1207. Therefore, we urge CARB to assess the net impact to the annual caps from both the Offsets Under the Cap Provision and the MDI and consider adjusting future caps downwards if necessary. Cost-Effectiveness: CARB is proposing a unique approach in distributing allowances in the form of an incentive value for decarbonization investments, with reporting requirements for use of the incentive value and requirements to return unspent value through return of allowances. Hence, IETA suggests that cost effectiveness, total estimated GHG reductions, and scale-up potential be key considerations as part of the application process. Given that CARB's proposal to direct 118 million allowances to the MDI through the 15-day changes was unexpected, C&I stakeholders and market participants are requesting greater clarification and certainty on several matters.

IETA believes that CARB is in a position to alleviate concerns by providing information on the following as part of the rulemaking and/or subsequent implementation process: MDI Mechanism: CARB should provide clarification on potential project types, approval criteria, invalidation/cancellations, etc. as part of the implementation process as soon as possible. We suggest that electricity generators are included as qualified MDI recipients.

Market Impacts: IETA supports the publication of any analysis CARB has conducted on MDI market impacts for greater transparency. Recent analysis from Clean and Prosperous California reveals that under an assumption of maximum uptake of the MDI,

27 million allowances BUCAs would be drawn in 2028.3 This means that even if the MDI is used at its maximum, the 118 million allowances available as BUCAs would be allocated over five years with likely retirement of the allowances occurring over an even longer period as the projects they support are implemented. Similar analysis and communications from CARB would allay concerns that a sudden influx of allowances could undermine Program integrity. (15d-IETA-86.3)

Comment:

Among the programs that would be defunded under this proposal is the state's investment in wildfire resilience and forest health. California faces an escalating wildfire crisis. The economic costs of catastrophic wildfires — including property destruction, destabilization of insurance and real estate markets, public health impacts, infrastructure damage, degradation of the state's critical watersheds, and carbon releases— are borne disproportionately by rural communities and low-income households, as well as the state as a whole. GGRF-funded programs have supported fuels reductions, prescribed fire, and community preparedness investments that are essential to reducing wildfire risk. Draining the GGRF to fund industrial subsidies with no guaranteed emissions reductions would eliminate or severely curtail these investments precisely when the need is greatest. This is a direct and foreseeable harm to Californians' health and safety, our forest ecosystems, and the communities that depend on them — and it runs counter to the state's own goals for forest carbon sequestration and climate resilience. Healthy forests are not only a fire risk mitigation tool; they are California's largest, most immediate and cost-effective natural climate solutions. Weakening the policy and funding infrastructure that supports forest stewardship is completely counterproductive. (15d-PFT-80.9)

Comment:

Furthermore, the MDI lacks the accountability and environmental integrity measures that California law requires of compliance instruments. Unlike offset credits under the existing program which must be real, permanent, quantifiable, verifiable, and additional, the MDI contains no enforceable mechanism to ensure that participating industries deliver genuine emissions reductions. Authorizing the use of such instruments for compliance purposes without these safeguards would undermine the legal and environmental foundation of the program. (15d-PFT-80.5)

Comment:

The proposed Manufacturing Decarbonization Incentive (MDI) is not a minor technical adjustment or clarification of existing rules. It is a substantial new policy mechanism that would create a new category of compliance instruments outside the emissions cap, extend generous new incentives to industrial emitters including petroleum refiners, and

redirect billions of dollars in program value away from the Greenhouse Gas Reduction Fund (GGRF). In fact, it does not appear to be an “incentive” to drive emissions reductions, rather the opposite. (15d-PFT-80.3)

Comment:

California’s Cap-and-Invest program is the state’s most significant market-based mechanism for achieving its statutory greenhouse gas reduction targets and a model for the nation, and indeed, globally. AB 1207 and SB 840, enacted in 2025, reauthorized the program through 2045 and reaffirmed the state’s commitment to achieving at least 40 percent below 1990 levels by 2030. These targets are not aspirational — they are legal requirements under California Health & Safety Code §38566 and §38562.2.

CARB’s own Initial Statement of Reasons (ISOR) identified the retirement of at least 118.3 million allowances as necessary to meet the 2030 target. The proposed 15-day amendments reverse this position by reintroducing these allowances into the market through the newly created Build Up California Reserve Account. This change would significantly reduce the program’s capacity to drive actual emissions reductions, further oversupply an already price-depressed market, and weaken the carbon price signal. CARB cannot credibly reconcile this proposal with its statutory mandate. (15d-PFT-80.2)

Comment:

Tangible emissions reductions now are much more valuable than promises of emissions reduction years from now in the uncertain future; and are achieved by retaining the simple straight line declining allowances. Any such promises have to be heavily discounted in deciding on the appropriate level of short-term subsidy to polluting industry that can confidently be counted on to make things better. We need to stay on the straight line. (15d-Forbes-60.7)

Comment:

And it is an obvious part of the definition of using future vintage allowances that it involves restricting allowance supply for future allocation and this does not constitute reasoning that the consequences of such reallocation create more total emissions than the obvious point that introducing new allowances increases emissions. (15d-Forbes-60.5)

Comment:

In the Notice of Public Availability of Modified Text, the main reason given for introducing new allocations in current period rather than using future vintage year allowances is stated in paragraph (O) 17 as: The 45-day Amendment approach would have introduced administrative complexities related to the duration of true-up value for allowance transfers and retirements. The updated approach is necessary to provide a

prescribed pool of incentive value and to avoid relying on future vintage allowances that would restrict allowance supply for future allocation. Administrative complexities are not a basis to fundamentally change the nature of Cap and Invest. To state that something is necessary is not an explanation of why it is necessary. (15d-Forbes-60.4)

Comment:

The amendment has fundamental differences from the January initial statement of reasons. I quote two clauses of the January proposal where I see a disconnect: “The staff Proposed Amendments use future vintage year allowances for Incentive Allocation in order to support needed emissions leakage risk protection and accelerate the deployment of low-carbon technologies in hard-to-decarbonize industrial sectors” Creating new allowances is a fundamentally different from reallocating allowances from future vintage years. Creating new allowances, on assumption that industry will only spend to just meet regulatory requirements and no more, has the effect of increasing total emissions by the amount of the new allocation. "The exact amount of Incentive Allocation is unknown but could exceed a total of 40 million allowances over the proposed 12-year period” The April proposal instead makes 118 million allowances available immediately. I interpret the original text to indicate an intention to make modest adjustments to the straight- line downward trajectory of the emissions budgets not considering MDI. Now proposing to make it flat is not within this interpretation. (15d-Forbes-60.3)

Comment:

Emissions limits are not declining in the proposal. AB1207 requires that the state board “shall adopt a regulation that establishes a system of market-based declining annual aggregate emissions limits”. The proposed rules remove approximately 118 million allowances from the 2027-2030 annual budgets as in the January proposal but now concurrently introduce 118 million new allowances under the MDI. The net result is a flat, not declining, short term trajectory for the emission limits. This is inconstant with the statute and fails basic sanity check on whether the specific proposal to incentivize industrial investment in emissions reductions is reasonable. (15d-Forbes-60.2)

Comment:

I outline my concerns below but as a procedural point the period of time for written public comment, even with the five-day extension, is inadequate given the magnitude of the changes compared to the Initial Statement of Reasons from January. The remedy is not, in my view, to extend the comment period because it remains important that the core of the January proposal to retire 118 million allowances from the 2027-2030 budgets is passed in a timely manner, but rather to remove the contentious part of the 15-day amendments relating to the Manufacturing Decartionization Incentive (MDI) for

now to allow full analysis and debate of the merits and demerits of this component and to consider alternatives to accomplish the underlying objective. (15d-Forbes-60.1)

Comment:

Independent analysis released this month underscores the scale of the supply implications. In an April 27, 2026 post on the Energy Institute at Haas blog, Professor Meredith Fowlie of UC Berkeley, Chairwoman of the IEMAC, estimates that under the 15-day amendments, a qualifying refinery could receive free allowances "well in excess of its GHG emissions" — with combined baseline plus MDI allocation reaching roughly 6.1 allowances per barrel against a benchmark emissions rate of approximately 3.89 tons per barrel. Whatever weight one places on a single illustrative sector, the structural point is straightforward: allowance issuance through MDI is not constrained by — and in some cases may exceed — the underlying emissions the cap is intended to bound.

Two refinements would substantially address this: 1. In the final rule and accompanying findings, reaffirm in plain terms that the emissions cap is the binding constraint on overall supply, and that all compliance instruments, including those issued through the MDI program, or successor mechanisms will come from within established annual budgets that the CARB board approves. 2. Reaffirm that the established budgets are established consistent with hitting the state's statutory 2030 and 2045 emissions targets, and that the cap remains the mechanism by which the program is held to those commitments. (15d-CCF-50.7)

Comment:

A defining feature of a well-functioning cap-and-invest program is that total supply is set in advance and is not contingent on the discretionary actions of covered entities. As we read the 15-day amendments, the volume of allowances flowing into the market through the expanded MDI program is determined principally by the pace at which compliance entities apply and CARB approves projects — not by the budget trajectory the Board adopts. That is a meaningful change in how supply has been managed under the program to date. MDI, if well designed, can be a useful tool for addressing leakage risk and accelerating capital deployment in hard-to-abate industrial sectors, and we do not oppose the concept. Our concern is that, as currently structured, the budget is no longer the binding constraint on supply — the application pipeline is. That changes how investors and covered entities plan in the program, and it is consistent with continued auction weakness that we've observed in recent months: prices at or near the floor, undersubscription, and hesitation rather than confidence. (15d-CCF-50.6)

Comment:

Even before the 15-day amendments, the program was carrying a material inventory of unused allowances which has continued to increase, as evidenced by the February

2026 current auction clearing at the reserve price, and the advance vintage auction not selling out. Against that backdrop, expanding allowance issuance through Manufacturing Decarbonization Incentives (MDI) outside of the established budgets is difficult to reconcile with the market's structural conditions today, regardless of the underlying decarbonization benefits. (15d-CCF-50.2)

Comment:

Our focus is whether the proposed changes preserve two things this program depends on: the integrity of the cap and its alignment with both the state's statutory 2030 and 2045 emissions targets. As we read the 15-day package, both are weakened. Allowances would flow into the market from outside the established annual budgets, and the cap would no longer reliably tie program supply to the emissions trajectory mandated by the Legislature. That damages program integrity in a way the market can read. Weak auction performance, GGRF revenue, and investor confidence can be observed in recent months, all of which could continue to deteriorate due to the proposed changes. Markets respond to structure, not intent — and small design choices in this package will have outsized effects on whether the program continues to function as designed. (15d-CCF-50.1)

Comment:

CARB’s proposal, rather than adhere to the will of the Legislature and clear statutory direction, adds up to 118 million metric tons of allowances back into the market, providing at least $3.5 billion in subsidies that will only prolong our reliance on fossil fuels and their disproportionate impacts on public health in environmental justice communities. This contradicts CARB’s Initial Statement of Reasons about what was required for California to reach our 2030 emissions target. It also effectively zeroes out future Greenhouse Gas Reduction Fund investments. In addition to diluting the market signal of the cap—increasing emissions and reducing demand for allowances—the proposed Manufacturing Decarbonization Incentive (MDI) under the newly created Build Up California Reserve lacks any enforceable mechanism to demonstrate real, permanent, quantifiable, and verifiable emissions reductions. The MDI resembles CARB’s existing offsets program, but without any of the accountability measures required by law. ....Moreover, the proposal also lacks any assurance that CARB, the Energy Commission or the Division of Petroleum Market Oversight will have the data or accountability tools they need to avoid saddling California taxpayers with further costs like the federal government’s “petroleum exclusion,” which shields refineries from Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) cleanup liability. There are better options available to stabilize in-state fuel supply through the energy transition that preserve the integrity of California’s carbon market. We anticipate many such solutions will be highlighted in the Transportation Fuels

Transition Plan and Transportation Fuels Assessment, due this month, and we are ready to engage with the Administration and industry to build on our work. CARB must stay on course to meet the 2030 targets by doing the following:

1. Apply the same rigor and accountability to any compliance instruments generated under the MDI program as we do for offsets—namely, that they be real, permanent, quantifiable, verifiable and additional emissions reductions—there must be accountability on public spending and environmental justice. (15d-AM Ortega-42.1)

Comment:

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. (15d-GI-35.1)

Comment:

CARB's proposed amendments are not consistent with the state's legislative direction and intent. While the state has historically relied on a suite of complementary tools to meet emissions targets, many of those tools are currently under threat due to actions by the Trump Administration, including attacks on federal climate programs and California's Clean Air Act waiver authority to regulate vehicle emissions. In the absence of these tools, weakening Cap-and-Invest further undermines the state's ability to meet its statutory obligations. If emissions are not reduced through Cap-and-Invest, California remains legally required to meet its targets, which will necessitate more costly and burdensome direct mandates and regulatory actions.... Taken together, the proposal presents an unacceptable tradeoff of a weakened and potentially ineffective emissions cap, a significant reduction in public investment through GGRF, and additional uncompensated value to regulated industries. This outcome is inconsistent with both the intent and the design of Cap-and-Invest. We urge CARB to revise the 15-Day Amendments to ensure the program remains a credible, enforceable mechanism for emissions reduction and a reliable source of public investment. Specifically, CARB should: Ensure that the emissions cap represents a real, declining limit that is not offset by off-cap allowances. The proposed MDI program and updated allocation for high-emitting industries must be revised to ensure progress toward our 2030 goals is achievable, and that the market mechanism will function as intended. Industry allowances should be allocated according to demonstrated need and measurable emissions reductions. The proposal's structure raises concerns about the integrity of the

cap. By significantly increasing allowance supply and creating an estimated 118 million allowances outside the cap through the Manufacturing Decarbonization Incentive (MDI), the amendments effectively offset the planned decline in emissions between 2027 and 2030. A cap that is functionally neutralized in this way cannot be relied upon to drive the emissions reductions required under state law. The MDI was never envisioned in statute and represents a substantial departure from legislative direction. As proposed, it functions as a large-scale subsidy program for industry, including oil refiners, funding activities such as fossil-based hydrogen production and out-of-state biofuels at the expense of legislative priorities set out in SB 840. The program lacks clear accountability measures and does not ensure that emissions reductions are real, permanent, or additional... Taken together, the proposal presents an unacceptable tradeoff of a weakened and potentially ineffective emissions cap, a significant reduction in public investment through GGRF, and additional uncompensated value to regulated industries. This outcome is inconsistent with both the intent and the design of Cap-and-Invest.

We urge CARB to revise the 15-Day Amendments to ensure the program remains a credible, enforceable mechanism for emissions reduction and a reliable source of public investment. Specifically, CARB should: Ensure that the emissions cap represents a real, declining limit that is not offset by off-cap allowances. The proposed MDI program and updated allocation for high-emitting industries must be revised to ensure progress toward our 2030 goals is achievable, and that the market mechanism will function as intended. Industry allowances should be allocated according to demonstrated need and measurable emissions reductions. (15d-CLCCC-34.1)

Comment:

Retire at least 118.3 million allowances to protect cap integrity and meet 2030 and 2045 climate targets. The recent 15 day notice departs significantly from the ISOR by reversing the proposal to retire 118.3 million allowances from the carbon market. The removal of a minimum of 118.3 mi allowances is necessary to reach the mandated 2030 target; failure to do this removal will jeopardize CARB’s ability to reach the mandated 2030 target as is clearly stated in CARB’s October 25, 2025 workshop (slide 17) and webinar, and again in the ISOR on pages 34, and 327. (15d-TCC-29.1)

Comment:

Remove the Manufacturing Decarbonization Incentive (MDI) program from the current proposal and implement it through a future rulemaking with stronger guardrails to increase emission reductions and innovation, using allowances drawn from within the emissions cap. The MDI program as proposed in the April 14 revisions would provide a huge windfall to oil companies that are already earning windfall profits due to President Trump’s war on Iran. University of California economist Meredith Fowlie estimates that

the proposed revision would increase the allocation to refineries from 2.25 allowances per barrel produced to over 6.1 allowances per barrel, which is more than the refinery benchmark emissions rate of 3.89 tons per barrel. There is no justification for such a lavish subsidy, particularly on top of the $1-2/gal tax credit for Sustainable Aviation Fuel proposed in the Governor's budget. While WRI supports the concept of an MDI program to incentivize industrial electrification, carbon capture and storage, and carbon removal, the proposed program awards allowances based on money spent, not on emissions reduced or innovation supported. Rather than set aside half of the allowances in the MDI for the refinery sector, as proposed in the April 14 revisions, a revised MDI should set aside a portion of its allowances to clearly defined innovative projects, such as carbon dioxide removal, and allocate the remaining allowances through a competitive process based on emissions reductions, such as a reverse auction. The allowances for the MDI should be drawn from within the cap (after retiring 118.3 million allowances), either from future years, as originally proposed, or from allowances that would otherwise be allocated for free in the current year. (15d-WRI-23.2)

Comment:

The World Resources Institute is greatly concerned that elements of the April 14, 2026, revisions to the proposed rule will undermine the effectiveness of the emissions cap and provide unjustified subsidies to oil refiners, rather than drive innovation and effective emissions reductions from the industrial sector. To avoid these bad outcomes, we recommend that CARB Retire 118.3 million surplus allowances immediately as initially proposed. CARB's original analysis found that at least 118.3 million surplus allowances need to be retired to ensure that the cap-and-invest program fulfills its intended role in meeting California's mandatory emission reduction targets. CARB should revert to its original proposal to retire this amount of surplus allowances. Using them to incentivize emission reductions from the industrial sector, even if fully effective, just shifts emissions from one sector to another without accomplishing the needed overall reductions that would be achieved by retiring these allowances. (15d-WRI-23.1)

Comment:

TNC requests that CARB fully consider options to ensure that the Manufacturing Decarbonization Incentive (MDI) does not compromise the cap and attainment of the State's 2030 greenhouse gas reduction goal TNC supports the Cap-and-Invest Program as a market-based approach and tool to reduce greenhouse gas emissions (GHG) cost effectively, and we appreciate CARB's adherence to this principle. The legislative package enacted in 2025 to reauthorize the Cap-and-Invest Program includes direction to CARB to update the Program to ensure that it reduces greenhouse gas emissions, prioritizes affordability, maximizes cost effectiveness, mitigates emissions leakage, and avoids adverse impacts on industrial competitiveness. We acknowledge the complexity

of this task, particularly amidst federal uncertainty and volatile market conditions, and we appreciate CARB staff's efforts to balance these priorities.

We recognize that the intent of the Manufacturing Decarbonization Incentive (MDI) is to serve as a tool to support cost effectiveness and encourage covered entities to invest in decarbonization technologies and activities to accelerate emission reductions. At the same time, recent analyses of the MDI by the Environmental Market Lab at University of California Santa Barbara suggest that this mechanism, if fully utilized, could undermine the State's 2030 goals by adding additional emissions allowances beyond the 2030 cap, and could significantly reduce Cap-and-Invest auction revenue that could fund important activities, such as nature-based solutions and wildfire resilience, through the Greenhouse Gas Reduction Fund. A range of suggestions have been offered to address this issue, including the addition of a requirement that utilization of the MDI be contingent on achievement of verified GHG reductions. We ask CARB to consider these options fully to ensure that the Cap-and-Invest Program remains an effective backstop for achieving the State's GHG goals and continues to provide funding to support investments in wildfire resilience.

Additionally, we acknowledge CARB's commitment to monitor, evaluate, and report publicly on the use of the proposed MDI and statewide emissions trends to ensure that the State remains on track to achieve our climate targets. If the regulatory amendments ultimately include the use of the MDI and should usage of the MDI approach a level that could compromise California's achievement of our 2030 GHG goals, we urge CARB to make regulatory adjustments to the Cap-and-Invest Program to ensure the State meets our 2030 goal. (15d-TNC-202.2)

Comment:

We share several constructive concerns that have been raised about MDI implementation, including the case for tying allocation more directly to verified emissions reductions, applying additionality screens, introducing competitive scoring for project selection where multiple applicants seek limited Reserve allocation, and instituting standardized cost and performance reporting. These are implementation refinements, not structural objections, and we encourage CARB to incorporate them. (15d-CBC-201.16)

Comment:

The 15-day changes propose a supplemental allocation of up to 118.3 million allowances to qualified industrial emitters. Notably, these new allowances are created on "top" of (i.e., in addition to) annual allowance budgets through 2045. This would have the practical effect of increasing the supply of allowances relative to the ISOR proposal

by up to 118.3 million, with a cumulative allowance budget of up to 3,911.3 million allowances.

This proposal is inconsistent with staff's assertion in the ISOR that a reduction of 264 million allowances is required to align with the 2022 Scoping Plan Update, with a cumulative allowance budget of 3,793 million allowances. (15d-Cullenward-200.3)

Comment:

In theory, the MDI could be designed to have no net impact on cap levels, but that outcome would require "additionality" and "conservativeness" as described below: Additionality of reductions: The reductions caused by the BUCAs must exceed what the carbon price or other climate policies would have achieved. This is similar to the concept of "additionality" in the carbon offsets literature and "marginality" in the economics literature.

Conservativeness of BUCAs: CARB issues one BUCA for one reduction caused by the MDI (sometimes referred to as a "one-to-one" requirement). This is similar to the concept of "conservativeness" in the carbon offsets literature. As proposed, the MDI requires neither additional or conservativeness. Therefore, the quantitative impact of MDI on cap levels depends on whether CARB discretionarily adheres to these principles and, if not, which principles above are relaxed.

• If CARB does not target additional reductions, then all BUCA allocations would increase the cap. While additional reductions contribute to achieving the cap, "non-additional" reductions that are awarded BUCAs do not, and instead effectively increase the cap. In the extreme, if MDI is fully subscribed and used for "non-additional" reductions, then the MDI would effectively increase the cap by 118.3 million tons.

• If CARB does not issue a "conservative" quantity of BUCAs, then the impact on the cap depends on the degree to which CARB "overawards" BUCAs. For example, if CARB awards three BUCAs for one ton of additional emissions reduction, then the cap would effectively increase by two tons. In this example, if MDI is fully subscribed, then the MDI would effectively increase the cap by 78.87 million tons (118.3 million BUCAs - 39.43 million reductions). A core constraint in the design of the MDI is that MDI-eligible facilities are already covered by the cap-and-invest program and therefore subject to the carbon price, which in itself is designed to incentivize emissions reductions. Therefore, any emissions reduction that is truly additional should, by definition, be more expensive than today's carbon price–otherwise it would have already occurred. This creates a design tension. CARB could (i) strictly impose additionality and one-to-one conservativeness requirements, in which case MDI uptake is likely to be constrained to a narrow set of projects that cost more than the carbon price but less than two times the carbon price, or (ii) relax additionality and conservativeness requirements, which is

likely to result in systematic over-allocation of BUCAs relative to emissions reductions and an increase in the effective cap.

In the context of the MDI, the Executive Officer could clarify CARB's intent to use additionality and conservativeness as criteria for applying facilities by issuing guidance for applying facilities. On that basis, the Executive Officer can accept applications that are additional and conservative, while rejecting those that are not. (15d-CPC-196.3)

Comment:

The possible reintroduction of 118.3 million allowances through MDI undermines emissions accounting that is central to CARB's cap setting. Per CARB's ISOR Staff Report, "Removing 118 million allowances from 2027-2030 allowance budgets is needed to account for updates to CARB's GHG Emission Inventory." (Staff Report, p. 30, Jan. 20, 2026). The GHG Emission Inventory informs cap setting by establishing the share of total statewide emissions that fall within the scope of the cap-and-invest program, which is then applied to statewide statutory targets to derive allowance budgets. As CARB explained in its October 20254 informal workshop, "Updates made in the 2022 GHG Inventory identified a downward adjustment that would have impacted allowance budgets adopted in the 2016 Cap-and-Invest Rulemaking," which set the 2020-2030 annual budgets. CARB estimated this downward adjustment equals roughly 118.3 million allowances. By CARB's own estimates, the 118.3 million allowances that are being removed from pre-2031 budgets should never have been introduced in the first place. Therefore, once removed, this quantity of allowances should not be reintroduced as currently contemplated by the proposed amendments. Based on our understanding, any significant changes to the MDI would trigger a second 15-day commenting period, almost certainly delaying the May Board hearing and probably precluding implementation in 2026. For this reason, if the MDI moves forward as implemented, then CARB would be required to reduce future caps commensurate with the quantity of allocated BUCAs. This would be easiest implemented at the level of compliance periods, such that the quantity of allowances of allocated BUCAs in one compliance period is counterbalanced by an equal reduction in caps for the next compliance period. Our analysis suggests that MDI would allocate 27 million allowances annually at maximum. (15d-CPC-196.2)

Comment:

If California continues to weaken its own climate rules each time the industry pushes back, we undermine the credibility of the entire system. We should be strengthening our commitment to emissions reductions, not retreating from it. I urge you to reject these amendments and maintain CARB's commitment to meaningful climate action. (15d-D-19.3)

Comment:

I'm writing to oppose the proposed amendments that would add 118 million metric tons of allowances back into the cap-and-trade market. From both a climate and policy perspective, this move doesn't make sense. We're supposed to be cutting emissions, not expanding allowances to subsidize oil and gas companies that are already seeing record profits. The timing concerns me. The fossil fuel industry is in a strong financial position right now, and rather than holding them accountable, CARB is providing them additional allowances. This seems counterproductive to our stated climate goals. (15d-D-19.1)

Comment:

To preserve both the environmental integrity and economic effectiveness of the program, we urge CARB to consider tools at its discretion to mitigate risks associated with the MDI before the May 28 vote to ensure successful timely implementation.

At its core, the program should deliver three things:

1. Protect the integrity of the cap. The cap is the foundation of the program’s climate ambition, and the final regulations must ensure that the emissions ceiling is fixed and enforceable. Any mechanism introduced alongside it should reinforce—not weaken—that foundation. Allowances used for compliance should reflect real, additional emissions reductions and remain aligned with the overall emissions trajectory.

2. Provide market certainty. Clear rules, transparent implementation, and well-defined limits on how the MDI and BUCAs will be managed by CARB are essential to maintaining confidence among market participants. Ambiguity around how and when BUCAs may enter the market risks undermining price signals and reducing the program’s effectiveness.

3. Continue to drive meaningful investment. California’s cap-and-invest program has been successful in part because it channels capital into emissions reductions and clean technologies. Any updates should strengthen, not dilute, those incentives. If the MDI is retained as a tool to support industrial decarbonization, it must be designed to reward BUCAs for genuine, additional emissions reductions, not simply the commitment to invest. (15d-CE-181.6)

Comment:

…as currently written, the MDI carries inherent risks for the cap-and-invest program to effectively function as both an economic and climate tool, undermining the program's ability to deliver on its legally binding obligation under SB 32: reducing GHG emissions to 40% below 1990 levels by 2030. CARB took an important step towards achieving 2030 targets by removing 118 million metric tons (MMT) of allowances to tighten the

cap, deemed necessary in the Initial Statement of Reasons (ISOR). The subsequent proposed 15-day amendments in the Final Statement of Reasons (FSOR) introduced the Manufacturing Decarbonization Incentive (MDI) program as a new reserve of 118 MMT created outside and above the official statewide cap in a newly established “Build up California Reserve Account” (BUCA) that industrial entities may apply and use for compliance if they undertake specific clean investments. As currently designed, the MDI risks introducing a structural flaw into the program by allowing facilities to access additional allowances outside the cap based on proposed investments rather than verified emissions reductions. In effect, this shifts the cap from a fixed limit to a potentially expandable one through the actions of individual facilities who may use the MDI for compliance. The introduction of the MDI raises fundamental questions for the cap-and-invest program: where do these new compliance allowances (BUCAs) come from, and what effect will reinjecting them have on the market? These questions come as there are already signs of strain in the market. An estimated $3 billion in potential 2025 revenue was foregone by California as auction demand fell amid delays in updating the program. Auction undersubscription is a concern, and uncertainty about how the MDI will be implemented and administered may further undermine program credibility and market confidence. New modeling from Greenline Insights confirms the risk that adding 118 million allowances above the cap would flood the market, depressing prices and slashing auction revenue that fund the GGRF and California Climate Credit, thus creating a significant risk of reduced GGRF revenues by diverting allowances away from auction. In contrast, their analysis shows that in situations when the cap is preserved, undersubscription is avoided, price signals strengthen, and GGRF revenue is maintained or grows through 2045. A UC Santa Barbara Environmental Markets Lab analysis reaches a similar conclusion, finding that full MDI utilization over the next four years could cut auction revenues by $4 billion. Without guardrails, the MDI functions as a compliance subsidy that relaxes the cap, erodes the carbon price signal in one of the world's largest economies, and puts California's legally binding 2030 emissions reduction target at risk (15d-CE-181.4)

Comment:

CARB must strike the “Manufacturing Decarbonization Incentive” and associated “Build Up California Reserve” allowance tranche from the proposal. This excessive handout for high emitting industries undermines the proposed cap decline and severely exacerbates the emissions allowance oversupply. The Manufacturing Decarbonization Incentive (MDI) would create a pool under the new “Build Up California Reserve” of roughly 118 million allowances that exist outside of the emissions cap, which will be awarded for clean energy investments. This new incentive pool is equivalent to CARB’s proposed cap decline of approximately 118 million allowances between 2027 and 2030. Any claim that this proposal effectively lowers the emissions cap overall is misleading; the added

off-cap allowances effectively offset the intended reductions and undermine the program's real-world emissions limits. Concerningly, the MDI program alone is projected to lower auction revenue by $4 billion dollars should the incentives be fully utilized over the next four years. An addition to the Cap-and-Invest program of such substantial scale warrants further stakeholder input and impact analysis than the current comment period allows. We urge CARB to remove the MDI program and linked allowance tranche for consideration in future rulemakings. (15d-CEV-178.2)

Comment:

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... Greenline Insights modeled a scenario in which 44 million allowances54 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...

b. Option 2: Implement a one-for-one allowance retirement policy for each MDI allowance released into the market... 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... 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. (15d-EDF-175.6)

Comment:

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... (15d-EDF-175.5)

Comment:

I. CARB must permanently remove the bare minimum 118.3 million allowances from the 2027-2030 allowance budgets to align with the 2030 climate target and eliminate “above-the-cap” compliance instruments.

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...

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

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.

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

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.” 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...

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...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...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" 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. 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.

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...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. Covered polluters are already paying the minimum possible price for their emissions, resulting in an estimated $3 billion in lost GGRF revenue in 2025...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...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...

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

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. (15d-EDF-175.2)

Comment:

CARB's proposed Build Up California Reserve is of dubious egality under statutory GHG limits because the 118 million allowances allocated to the new reserve are required to achieve the SB 32 statewide GHG reduction target in 2030, according to the ISOR (pages 34 and 329-330): "The Cap-and-Invest Program supports achieving State climate goals by establishing cumulative budgets and emissions trajectories that are aligned with the path needed to achieve State GHG emissions reduction targets... The updated allowance budgets in the Proposed Amendments accomplish this objective by removing a total of approximately 118 million allowances from 2027 through 2030 budgets... Alternative 1 removes 118 million allowances from the pool of pre-2030 allowances reserved for cost-containment to support meeting the statutory target to reduce GHG emissions by 40% by 2030 relative to 1990 levels. This removal is the minimum needed to align the supply of allowances for this decade with the updated AB 32 GHG Inventory... the Proposed Amendments remove the same number of allowances as Alternative 1 through 2030... The SB 32 emissions reduction target (HSC 38566) is legally inviolable as long as allowance auction prices remain within the price ceiling (HSC 38562(c)(A)(ii)(II) and 38562(c)(A)(iii)). The industry's ISOR comment letters from Chevron, PBF Energy, and Marathon do not propose or advocate for the Build Up California Reserve. Their main complaint is that CARB's proposed Cap-and-Invest regulation could make in-state refineries economically uncompetitive against more highly-polluting imports. PBF Energy stated that "Unless CARB puts in-state refineries on an equal footing with importers, which we think can be accomplished this year, we will be forced to address the viability of our in-state operations, along with every other refiner in the state." CARB should consider alternatives for remedying this situation without breaching allowance budgets. (15d-CRPSVC-172.1)

Comment:

In response to feedback received on the ISOR proposed back in January, CARB has revised the proposed program design in a way that effectively relaxes the GHG emissions cap and expands the share of allowances allocated to industry. In principle, such changes could be justified based on concerns about emissions leakage and industrial competitiveness impacts. In practice, the analytical basis for the magnitude of these adjustments has not been clearly articulated. Given the scale of the transfers involved, greater transparency around the underlying rationale would strengthen confidence in the program. (15d-Fowlie-16.1)

Comment:

If CARB decides that the MDI is an essential feature of this rulemaking and insists on its inclusion in the final regulations, CARB must revert the MDI to the structure proposed in the January ISOR – which funded the MDI by allocating allowances from future budget

years. This structure ensures that any additional compliance flexibility created in the near term is offset by equivalent reductions in later budget years, and that all allowances issued for the incentive are drawn from within the existing cap trajectory. This approach would preserve the integrity of the cap– although it is important to note that we would still have significant concerns about oversight, guardrails, and negative impacts to the near-term ambition of the program as a result of pulling allowances forward from future budget years. Near-term ambition is what matters most for the climate: early emissions reductions in long-lived climate pollutants, like carbon dioxide, are critical to minimize the cumulative build-up of climate pollution in the atmosphere and limit overall warming. Stronger emissions reductions before 2030 are also important to invest in and spur a green economy, putting California in a stronger position to achieve its net-zero target by 2045. (15d-CEEJTPHAG-132.7)

Comment:

This new proposal also poses risks to the critical affordability benefits Cap-and-Invest delivers to California households. Since the program launched in 2014, it has delivered over $17 billion in credits on household utility bills through the California Climate Credit and funded critical investments through the GGRF in clean transportation, public health, and climate resilience, with a portion of those funds mandated to support disadvantaged communities. These benefits depend on a stable and healthy allowance market. Over the past year with delayed action on program updates, auction demand has declined; California lost an estimated $3 billion in 2025 as a result.

CARB's April proposal makes this problem significantly worse. New modeling from Greenline Insights finds that creating 118 million additional compliance instruments would flood the market, further depressing demand and prices and reducing the revenue available for GGRF investments and Climate Credit bill savings. For example, Greenline Insights' modeling finds the program delivers over $6 billion in net savings to households earning $100,000 or less each year – if CARB preserves the integrity of the cap and permanently removes 118 million allowances. But if the new manufacturing incentive creates an extra 118 million allowances, above the cap, those household savings are cut in half. That's because these changes create an oversupply of allowances and result in weaker auctions. When auctions don't sell out, Californians lose the revenue that would have been used to lower their utility bills.

A separate analysis from UC Santa Barbara's Environmental Markets Lab confirms that these changes would reduce funding to the California Climate Credit and the GGRF. If the MDI is fully utilized over the next four years, the analysis finds, auction revenues could be cut by $4 billion. (It is worth noting that CARB has also offered this $4 billion transfer figure in its own MDI FAQ).

This compounds with CARB's simultaneous proposal to reduce the rate of decline for the cap adjustment factor over the next four years, a change that CARB has estimated will provide about $800M in industry assistance in the form of free allowances. At the exact moment California should be strengthening the program's ability to fund climate progress and deliver relief to households, this proposal would shift billions of dollars away from household affordability and legislatively authorized climate investments, towards additional subsidies for industry. (15d-CEEJTPHAG-132.5)

Comment:

In January, CARB proposed removing 118.3 million surplus allowances from the market before 2030, identifying this as the minimum number of allowances that must be retired to meet California's 2030 statutory climate target.

The April 14th amendments would take the program in the opposite direction. CARB has now proposed extending the MDI to a broad array of industrial polluters, to be funded with 118.3 million new allowances created outside of the allowance budget in the newly proposed "Build Up California Reserve Account." This novel mechanism is untested and comes with few guardrails or guarantees. In effect, CARB is opening up the market to a new class of compliance instruments that operate outside of the emissions cap; this poses a fundamental threat to the integrity of the Cap-and-Invest program's cap on emissions.

CARB must remove the MDI from this regulation and could revisit the concept as part of the post-2030 allowance allocation rulemaking. This is the most direct path to resolving the cap integrity problem created by the April draft, and would allow CARB the time required to thoroughly address the other significant structural flaws with the current proposal for the MDI including insufficient eligibility guardrails and the absence of a meaningful accountability mechanism. This would require immediately putting forward a second 15-day amendment proposal removing the MDI from the regulation. (15d-CEEJTPHAG-132.4)

Comment:

To uphold program integrity, meet California's 2030 climate commitment, and save households money, we, the undersigned organizations, request that CARB update and finalize the regulation in time to implement changes this fall with the following critical revisions: Remove the Manufacturing Decarbonization Incentive (MDI) mechanism from the proposal immediately and retire 118M allowances so that regulations can be swiftly adopted to secure program outcomes this fall without harming the integrity of the emissions cap or jeopardizing the 2030 climate target. (15d-CEEJTPHAG-132.2)

Comment:

The revisions we are requesting are the minimum necessary to ensure this program does what the Legislature directed it to do: deliver cost-effective emissions reductions aligned with California's climate targets and protect and strengthen affordability benefits for California families. CARB has the ability and the time to make these surgical changes before issuing a final regulation for a Board vote, without delaying the implementation of rule updates this fall. California cannot afford to get this wrong. At a time when federal climate leadership has collapsed and the costs of inaction are rising for communities across the state, California's ability to meet its climate commitments requires a Cap-and-Invest program that functions as designed, with a real and declining emissions cap. (15d-CEEJTPHAG-132.10)

Comment:

We write to you now with extreme concern that elements of the latest rulemaking proposal, released on April 14th, 2026, run counter to the legislation because they fundamentally undermine the integrity of the emissions cap, put California's ability to meet its statutory 2030 climate target at risk, and jeopardize billions of dollars in funding to support climate investments and energy affordability. Proposed partially in response to massive lobbying efforts by fossil fuel interests – some of the most profitable companies in the world – these amendments reflect a major departure from the legislative intent of AB 1207 and SB 840. (15d-CEEJTPHAG-132.1)

Comment:

It is beyond disappointing to see CARB propose to give the fossil fuel companies which caused our climate crisis yet another break when previously CARB gave them plenty of time to plan for phaseout and gave them a break on paying for the damage they continued to cause. The recently proposed amendments put both our 2030 targets and the stability of the Greenhouse Gas Reduction Fund at risk. They also depart from the spirit of our landmark agreement from last year by seeking to achieve affordability goals without accountability. CARB's proposal, rather than adhere to the will of the Legislature and clear statutory direction, adds up to 118 million metric tons of allowances back into the market, providing at least $3.5 billion in subsidies that will only prolong our reliance on fossil fuels and their disproportionate impacts on public health in environmental justice communities. This contradicts CARB's Initial Statement of Reasons about what was required for California to reach our 2030 emissions target. It also effectively zeroes out future Greenhouse Gas Reduction Fund investments. (15d-Broome-13.1)

Comment:

Retire 118M tons of free allowances immediately and not allow any for the MDI. Otherwise, you will not make your legal requirement of 40% below 1990 levels by 2030. (15d-Stewart-12.2)

Comment:

Output-based free allocation for EITE sectors directly targets leakage risk by virtue of being proportional to output levels. As noted in our previous comments, approaches to support industrial decarbonization projects have potential to protect against leakage but also could reduce emissions intensity for industrial emitters, reducing their compliance burdens while not providing any incentives to preserve output. Also, to the extent these projects are all reducing emissions from covered entities already covered under the cap, the "waterbed" effect within the cap (which could be considered a different form of leakage) means that this would in most situations not reduce overall emissions (unless the result was to avoid releases of units from the APCR or price ceiling). This contrasts with other potential state investments to reduce emissions from natural and working lands or other emissions sources outside the cap. The MDI could even increase emissions on net due to the inconsistent accounting for biogenic emissions, as noted above.

A minimum safeguard should be to require consignment of all industrial free allocations to bolster the ability of the auction reserve price to provide a predictable price signal for investors. Ideally, to ensure additional emissions benefits, California would also retire a number of allowances equal to the number of emissions reductions estimated to have been directly paid for using state resources.

In addition, we recommend that any investments in industrial decarbonization projects be 1) well targeted at avoiding leakage risk and 2) cases where there is a demonstrable case that the project will avoid reductions in output. Care should also be taken not to award so many MDI allowances relative to the emissions of any particular entity that this becomes a subsidy to increase output and associated emissions beyond what would have occurred without any carbon price. A cautionary example of this is discussed in Box 5-7 (Technical note: Impacts of output-based allocation) in PMR-ICAP (2021). (15d-Lubowski-89.5)

Comment:

Dear CARB Staff and Board Members, Californians are feeling the real impacts of climate disasters that are not just devastating our communities and lands but also driving an affordability crisis. Families are bearing the costs of a warming climate through insurance premiums and utility bills, health expenses and hospital bills, higher prices on household goods, and are held hostage by Big Oil's price gouging at the

pump. Cap-and-Invest is one of our state's biggest climate programs and is a critical source of funding for close to home community investments like transit, parks, clean cars, charging infrastructure, electrifying homes, and critical disaster response. The April proposal amending the program will slow our climate progress and gut the annual program revenue $2 billion a year at a time when our state is cutting safety net services across the board for Californians. CARB must immediately amend the proposal to ensure that the Cap-and-Invest program will benefit Californians, not provide polluters with excessive handouts. At a time when California's leadership can provide a backstop against federal attacks and rising costs that are burdening families, we cannot afford to give corporate polluters more handouts. Now is the time for the agency to put Californians first and ensure that industry giveaways are not being adopted into one of our most significant and cost-effective climate programs. California must move with a proposal that defends the integrity of Cap-and-Invest and safeguards our state against the climate crisis. Thank you as a student, a recreationalist, and GenZ person fighting for our healthy future that is harder to see due to changes like these. (15d-Hickey-10.1)

Agency Response:

No changes were made in response to these comments. Please refer to Master Response 4 and Agency Response 15-88-1 in the Response to Comments on the Environmental Impact Analysis. See also Agency Response to comments O-8.51 and O-8.52.

MDI allocation is designed to be a targeted leakage minimization tool by deploying deeper investments in certain industrial decarbonization technologies, as envisioned by the 2022 Scoping Plan Update, which will be needed to achieve the 2030 and 2045 GHG targets while supporting clean production in California. MDI-eligible entities include manufacturers—such as food processors, cement plants, glass manufacturers, and refiners—that invest in projects that reduce covered emissions at their facilities. Reductions in the industrial sector in the near term are even more critical to compensate for any delays in the reduction of emissions in the transportation sector given the abandonment of GHG regulation and decarbonization incentivization by the federal administration and staying on track to achieve the state’s 2030 target.

The MDI allocation helps backfill the loss of federal decarbonization incentives and accelerates near-term industrial emissions reductions. Any reductions achieved by the MDI are only counted once in the AB 32 GHG Inventory for tracking progress towards California’s GHG emissions targets. For Program accounting purposes, reductions of these emissions are not relevant for an additionality test since they are already covered by the Program. The MDI allocation provides the opportunity for earlier deployment of long-lived emissions-reducing infrastructure as discussed below. As any reductions achieved through

the use of federal incentives would count toward a reduced compliance obligation, any reductions resulting from the use of the MDI program would also count toward a reduced compliance obligation. The MDI allocation has no potential to increase GHG or air pollutant emissions beyond the existing conditions baseline.

The MDI allocation mechanism includes guardrails on projects, usage limits, time limits, and eligibility criteria. Entities seeking to apply for MDI allocation must meet specific eligibility requirements and submit applications by specified deadlines for review and approval by the Executive Officer. Applications pertain to one compliance period, and additional applications may be submitted for subsequent compliance periods if MDI allowances remain available and are justified pursuant to regulatory requirements. Any MDI allowances that do not achieve GHG reductions by the spending deadline must be returned to CARB and will be retired. These guardrails enable CARB to ensure MDI allowance value is used to reduce industrial GHG emissions, which are verified through the post-compliance period reporting process with documentation showing changes in facility processes and fossil fuel use. Facilities receiving MDI allocation will also continue to be subject to all annual emissions reporting and verification requirements under MRR.

Regarding the relationship of MDI allocation and GGRF revenues, see Agency Response to comment W-1.3b.

For further discussion on the concept of “additionality” as applied to MDI allocation, and interactions between MDI allocation and compliance offsets, see Agency Response to comment O-8.39a.

Regarding criteria for evaluating or prioritizing MDI project application approvals, see Agency Response to comment O-8.14a.

Regarding consignment of MDI allowances, see Agency Response to comment O-8.46.

Regarding the comparison between MDI allowances and the Price Ceiling and Allowance Price Containment Reserve (APCR), note that the APCR is populated with allowances from within annual allowance budgets. The price ceiling comparison is discussed in Agency Response to comment 15-88-1 in the Response to Comments on the Environmental Impact Analysis.

Regarding public transparency, reporting, and tracking of MDI allowance value and the disposition of allowances in the Build Up California Reserve Account, see Agency Response to comment O-8.45.

Regarding the policy trade-offs of further rulemaking delay, see Agency Response to comment V-1.2b.

Regarding affordability and concerns on industrial entities not passing through the savings to consumers, the MDI is creating incentives to help business reduce compliance cost pressure and accelerating near-term industrial emissions reductions. Broader concerns about volatility in petroleum markets and refinery profits are outside the scope of the Proposed Amendments.

Board Resolution 26-7 directs the Executive Officer to evaluate and propose, as appropriate, future amendments to the MDI incentive program prior to receipt of MDI applications and issuance of any MDI allowances.

Finally, Board Resolution 26-7 directs the Executive Officer by July 1, 2030, to evaluate the impact of the MDI program on the effectiveness in reducing covered facility emissions, and to propose future amendments, as appropriate, on the following:

- the overall quantity of MDI allowances;
- compliance period limits on awarding of MDI allowances;
- further award limits by sector;
- eligible project types prioritizing those that could achieve both GHG and criteria and/or air toxics pollution benefits and/or other co-benefits including workforce transition; and
- any other appropriate changes to ensure the MDI program supports the program and continues to reduce emissions to help achieve the state's climate targets.

Additional parameters to strengthen the MDI program and its role in achieving GHG emissions reductions in the Cap-and-Invest Program may be considered as part of that public process.

O-8.38b Multiple Comments: Impact of MDI on emissions integrity, affordability, and Program revenues

There is no guarantee CARB's proposal will result in lower gas and energybills for consumers. Giving the energy industry a break on estimated auction proceeds instead of investing in proven programs is penny-wise and pound foolish and a step backwards to meeting our goals. (BH-Cortese-10.3)

Comment:

Extending reliance on fossil fuels through costly and inefficient subsidies doesn't ensure affordability but it does ensure more social and environmental injustice. The 15-day changes — however they are represented in the resolution released at 8 AM this

morning — are a major retreat from California's commitment to its climate goals, and a multi-billion dollar gift to Big Polluters at the expense of regular Californians and our severely pollution-impacted communities. The MDI is absolutely the wrong path to go down. Please reject these changes. (BH-Wechsler-41.1)

Comment:

Every climate activist I know is uniformly alarmed by the idea of issuing additional allowances for a market that already can hardly get off the price floor. The results of the recent auction make that plain. I understand the motivation for supplying more allowances, but this plan goes way too far. It's difficult to not conclude that Plan B will constitute a setback for the 2022 Scoping Plan's emissions reduction goal for 2030. Another result will be more air pollution in communities that already deal with a disproportionate and unfair amount. Both of these probabilities are disastrous. Please reject the 15-day changes proposed by staff. They must design a plan that doesn't fall far short of our climate goals and the air quality for already burdened communities. (BH-Walden-62.1)

Comment:

Approve the proposed regulations contingent upon direction to the Executive Officer to remove the MDI. (BH-Haider-74.1)

Comment:

Good morning, CARB Board members and staff. Katie Valenzuela from Communities for a Better Environment and a broad coalition of environmental justice organizations urging you to reject the current 15-day proposal as written. I'm really glad that staff started off by reminding us that AB 32 passed 20 years ago this year, because for almost every single one of those 20 years, environmental justice advocates have been fighting you over Cap-and-Trade.

And I want to make very clear that that's not our concern today. We remain concerned about market mechanisms broadly, but these changes fundamentally adjust this program in a manner that's shifting billions of dollars to polluting industries and away from the Climate Credit and the investments that we need to make our communities resilient for their climate future. You are the governing Board of this agency. This is a staff proposal. You are completely within your rights to tell staff to amend this proposal in your resolution. And if they don't, I encourage you to reject this proposal. We can and must do better. We can't undue these allowances being allocated once this vote proceeds today. So we really are hoping that you'll stand with environmental justice communities who were really not consulted because you actually don't have an EJAC right now in the development of this proposal and really stand firm to protect ratepayers.

I have to stay that at one point, one of the business groups who testified before us said that MDI will send an important market signal to industry to decarbonize. Well Cap-and-Trade was supposed to send that market signal. And if it's not sending a sufficient market signal, we should be looking at how to make that system stronger, not adding an additional incentive to companies who are making billions of dollars in profits overwhelmingly going to the oil and gas industry in order to say, hey, let's decarbonize further. They don't need this extra $30 a ton to decarbonize. What they need are stronger rules and regulations to ensure our targets are going to be met.

So we implore you to reject the MDI proposal. And if you can't get that out of this resolution today, please reject this and tell staff to come back in June with a different proposal. It is within your power as a Board to do that. Thank you. (BH-CBE-135.1)

Comment:

It is imperative that the integrity of the Cap-and-Invest marked be maintained by ensuring the -- that budget allowance allocations align with target emission reductions and goals. This cap is and must continue to be binding and is currently at risk with these proposed regulations. We need ambitious bold policies that prioritize affordability and cost containment for California consumers and align with the State's climate goals. California is committed to advancing climate ambition, while protecting consumers and supporting the overburdened communities most impacted by pollution and climate change. The Climate Center found that $8.6 billion has already been transferred to oil companies through Cap-and-Trade since 2013. With no evidence of lower gas prices or prevented refinery closures. Let's not further subsidize industry at the expense of affordability programs for Californians. We specifically recommend to remove the MDI mechanism and retire at least 118 million allowances no later than 2030 to protect cap integrity and meet our 2030 and 2040 climate targets. We support efforts to make electricity more affordable and accelerate the transfer of fossil gas at auction revenues to electric utilities. We also recommend to end post-2030 free industry allocations pending updated leakage analysis and revised economic conditions. (BH-TCC-183.1)

Comment:

CARB must deliver cost-effective emissions reductions aligned with California’s climate targets. These changes do not do this. CARB must correct course, to do so we ask that CARB: Reject the 15-day changes proposed by the staff and ask staff to create a revised proposal that keeps the integrity of the program intact; and . Postpone the decision on this important environmental and social justice issue to a later Board Hearing to allow for full engagement of the public and various stakeholders. Delivering programmatic changes at a later date will not prevent the Public Utilities Commission from its current phase of the California Climate Credit proceeding which is scheduled to wrap up this Winter. In fact, eliminating the MDI, is likely to result in a higher, more

steady Climate Credit. A delay in adopting programmatic changes will also not hinder CARB's ability to continue the program under current regulations, including exploring linkage with other jurisdictions. With three years until we are expected to hit the 2030 climate targets, and with affordability concerns at the front of everyone's mind, California must get this right. Please take the time to ensure these program changes will meet our state's goals and commitments. (BH-CBE-79.2)

Comment:

While CARB has argued that this proposal will improve market stability, there is no guarantee it will lead to lower gasoline or energy bills for consumers. The petroleum market is highly complex and volatile, driven by global forces that far exceed the influence of this program. Any modest potential price effects from allowance adjustments are outweighed by the significant risk of reducing funding for public transit. While I appreciate CARB's effort to respond creatively to the Legislature's directive and address legitimate concerns about affordability and market stability, these amendments overcorrect in ways that place other successful programs at risk. For these reasons, I urge CARB to consider alternative pathways that preserve program integrity while ensuring stable and reliable funding for public transit. (BH-Papan-103.2)

Comment:

There are several concerns that have been raised including, but not limited to, the significant repercussions of the proposed Manufacturing Decarbonization Incentive (MDI) on our 2030 emissions target, and on the GGRF. (BH-CSSRB-3.3)

Comment:

At a time when oil companies are making windfall profits, the proposal to give this polluting industry 118 million new emission allowances makes no sense. Their profits could more than pay for the clean energy investments this proposal hopes that the companies will make good on.

Instead, this unneeded expansion of emission allowances will set back investments funded by California's cap-and-invest program that are the backbone of our climate action plan. Essential components like public transit, clean mobility and transit-oriented development are the structural solutions we must keep on track with this funding.

The climate crisis is as real as a wildfire in your back yard. It demands a substantial and reliable commitment for any hope of leaving our children a livable future.

I strongly urge you to scrap the plans for the MDI proposal now. (BH-Strumpell-32.1)

Comment:

1. Remove the MDI mechanism and retire at least 118.3 million allowances no later than 2030 to protect cap integrity and meet 2030 and 2045 climate targets. … The recent 15 day notice departs significantly from the ISOR by reversing the proposal to retire 118.3 million allowances from the carbon market. The removal of a minimum of 118.3 mi allowances is necessary to reach the mandated 2030 target; failure to do this removal will jeopardize CARB's ability to reach the mandated 2030 target as is clearly stated in CARB's October 25, 2025 workshop (slide 17) and webinar, and again in the ISOR on pages 34, and 327. What changed? We need to prioritize communities, affordability, meeting the state's statutory climate targets over subsidies to industries.

The MDI is not necessary to assist industry as the proposed amendments are ready include:

• On top of existing subsidies to refineries and other industries through the allocation of free allowances, the new proposal also increases Allowances for Industry by changing the formula for calculating the allowances for industry (including by increasing what is known as the "cap adjustment factor"), thereby increasing the number of their allowances. (These changes are in addition to the MDI allowances.)

• It also allows for a Delay for Refinery Compliance. Independent merchant refineries could delay certain compliance obligations by two years.

We hope that the board will approve the April amendments, with clear direction to Executive Officer to retire the 118M allowances and removing the MDI completely from the final rulemaking. (BH-TCC-40.1)

Comment:

CARB's Cap-and-Invest plan contravenes the SB-32 Legislative mandate requiring that "the state board shall ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below the statewide greenhouse gas emissions limit no later than December 31, 2030" (HSC 38566). The proposed Build Up California Reserve to fund the Manufacturing Decarbonization Incentive (MDI) gives no assurance that allowances released from the reserve will result in the GHG reductions required to comply with SB 32. (BH-CRPSVC-89.1)

Comment:

The Kern Energy refinery processes 27,000 barrels of crude oil per day across the street from my small, unincorporated community of Fuller Acres southeast of Bakersfield. The San Joaquin Valley Air Pollution Control District gave the public notice of its intent to approve Kern Energy's permit to set up a new hydrogen power generation operation. The plan was not presented to the local community steering committee, even

though the area is part of California's AB 617 program. Residents living just feet from the fence line were neither consulted nor informed in advance. Fence-line air monitoring shows daily exposures to benzene, hydrogen sulfide, ammonia, and nitrogen dioxide — chemicals linked to cancer, respiratory illness, and death. Flares and noxious odors frequently trigger emergency responses. Since 1995, the refinery has been under a state clean-up and abatement order for its significant spills and leaks. From 2018 to 2023 alone, it accumulated extensive air quality violations. The damage is cumulative. Fuller Acres' drinking water contains high levels of TCP-1,2,3 and arsenic from historic industrial pollution. Regulators recently found PFAS, "forever chemicals," in the groundwater. While Kern Energy has paid fines, residents see no direct cleanup or benefits. Fuller Acres is treated as a sacrifice zone, where toxic exposure is normalized by industry and elected leaders. The cap and invest program provides continued free allowances for refineries like this one to keep polluting. I urge you to reject the 15-day changes and remove the MDI which would continue to make Fuller Acres a sacrifice zone. (BH-Cortez -100.1)

Comment:

We strongly support Cap-and-Invest, but we have significant concerns with the current proposal. Our primary concern is with the Manufacturing Decarbonization Incentive and CARB's proposal to fund this incentive by creating 118 million new allowances above the emissions cap. We ask that you approve the proposed regulations contingent upon direction to the Executive Officer to remove the MDI. For the past 13 years, Cap-and-Invest has acted as an emissions backstop, but the proposal before you today threatens to undermine that function. CARB has proposed creating exactly 118.3 million additional allowances to fund the MDI outside the cap, the precise number of allowances that must be removed from the cap to keep us on track for our 2030 targets. This undermines the cap's role in actually limiting climate pollution, which is the core function of this program. Multiple independent analyses project that flooding an already weak market with these additional allowances would cut GGRF revenue in half. That means billions of losses for the California Climate Credit, for AB 617 clean air programs, and for the community investments this program has just reauthorized to deliver. This is a massive value transfer from households to industry. This is not an affordability solution. However, you can still fix this today. By making your approval contingent upon removing the MDI, this Board can strengthen this program and permanently reduce emissions in line with our climate goals, while also shoring up critical climate and affordability revenue. In short, CARB can fulfill it's duty to the law, to Californians and to the climate. We urge you to direct the executive officer to remove the MDI and to approve these regulations contingent upon that removal. (BH-EDF-166.1)

Comment:

The Nature Conservancy (TNC) strongly supports the State's ambitious 2030 and 2045 climate goals and we support the Cap-and-Invest Program as a market-based approach and tool to reduce greenhouse gas emissions cost effectively. TNC appreciates CARB's adherence to this principle. We acknowledge the complexity of the -- of CARB's task to balance the various priorities identified in the reauthorizing legislation, particularly amidst federal uncertainty and volatile market conditions. We appreciate CARB staff's significant efforts and engagement on the regulatory amendments. We recognize that the intent of the MDI is to -- in the regulatory amendments is to serve as a tool to cost effective -- to support cost effectiveness and encourage covered entities to invest in technologies and activities to accelerate emissions reductions. At the same time, recent analyses suggest that if the MDI is fully utilized, it could undermine the State's 2030 goals by adding additional emissions allowances beyond the 2030 cap. In the regulatory amendments -- if the regulatory amendments are adopted include the MDI and should the usage of the MDI approach a level that could compromise the achievement of our 2030 goals, we encourage CARB to make regulatory adjustments to the Cap-and-Invest Program to ensure that California meets our 2030 goal. (BH-TNC-191.1)

Comment:

Union of Concerned Scientists has been a strong supporter of the Cap-and-Invest Program and believes it is an essential tool to ensure the State achieves is necessarily ambitious climate goals, especially in light of recent federal actions that have taken away the State's ability to enforce life-saving regulations in the transportation sector. We believe it is critical to complete this rulemaking on to time to avoid any delays to implementation. We appreciate the work CARB staff has put into this proposal and the time that the Chair and Board have taken to meet with us and other environmental and environmental justice stakeholders. CARB improved the ratepayer benefits of the program and supported decarbonization of homes and buildings in the 15-day changes by more quickly and fully shifting the natural gas credit to electricity. However, we remain deeply concerned with the treatment of the manufacturer decarbonization incentive in the 15-day changes. The most important aspect of the Cap-and-Invest Program is its cap. The integrity of this cap is of paramount importance as it is the one thing that actually makes sure the state is reducing emissions in line with the state's near-term emissions targets, and keeps the State on track to achieving carbon neutrality by 2045. The changes to the MDI could allow for emissions above the cap, which undermines the achievement of these critical goals and will potentially jeopardize billions of dollars in funding for critical climate and affordability investments. The MDI as proposed does not include sufficient guardrails and is in addition to the 100 percent industry assistance factor that already represents $800 million free allowances to industry. There is not time for the detailed discussion on what guardrails could ensure

that the MDI does not undermine the cap. Because of this, when voting to pass Cap-and-Invest, we urge the Board to require the Executive Officer to strike the MDI and retire the associated 118 million allowances in line with the SIP's 2030 emission reduction target. (BH-UCS-164.1)

Comment:

Yes. Hello. I'm Brian Shobe with the California Climate and Agriculture Network. We are a network of farmers, ranchers, scientists and ag professionals in California who work to advance agricultural climate solutions. Our network supported the reauthorization of the Cap-and-Invest, both in 2017 and 2025 for two reasons.

First, we believe that the Program would set meaningful limits on GHG emissions that are causing ever greater droughts, floods and wildfires that increase the cost for farmers and increase food prices for everyone.

Second, we believed that the Program would continue to provide investments to help farmers and ranchers voluntarily adopt practices that reduce their emissions through programs like FARMER and CORE, and CDFA's climate smart ag programs. We oppose the proposed MDI and its associated allowances, because it both weakens the climate integrity of the program and will make it impossible to fund agricultural climate programs and other clean air, clean water and wildfire programs that are critical to the health and safety of rural communities.

Now, we recognize that importance of decarbonizing the industrial sector, but this proposal prioritizes incentives for a few hundred large businesses in one sector. At the expense of thousands of small businesses in every other sector of the economy. We've heard a lot about leakage today. We lost 10 percent of California's farms and ranches between 2017 to 2022. So why do oil refineries get billions of dollars in subsidies to avoid leakage in this proposal, but California farmers and ranchers get nothing? Is that fair and balanced? How does CARB plan to address ag's eight percent of statewide emissions, which fall outside of the cap without incentive funding? Does CARB plan to directly regulate 60,000 farmers and ranchers. We urge you to consider the implications of this vote as you eat lunch provided to you by California's farmers, ranchers, farmworkers and rural communities. (BH-CCAN-169.1)

Comment:

Good afternoon, Chair Sanchez, CARB Board members, and staff. My name is Stephen Rosenblum. I'm the Energy Policy team lead for Climate Action California, a grassroots advocacy group with 7,000 members in California who are all concerned with solutions to the climate crisis.

I would like to align my comments with the many previous speakers from climate, environmental, environmental justice, and transit organizations. We were among the 40 organizations that co-signed the NextGen letter mentioned by Chloe Ames.

We're deeply concerned that the April amendments to CARB's rulemaking proposal undermine California's Cap-and-Invest Program and put our climate targets at risk. Particularly, the Manufacturing Decarbonization Incentive proposed in the April 14th rulemaking proposal runs counter to our climate goals, because it fundamentally undermines the integrity of the emissions cap, puts California's ability to meet its statutory 2030 climate target at risk, and jeopardizes billions of dollars in funding for household affordability, clean air, transit and housing investments.

I'd also like to address some of the underlying assumptions of this proposal. Transportation makes up 38 percent of California's GHG emissions. We will only achieve our 2030 and 2505 GHG goals with a carefully managed phaseout of internal combustion vehicles. This difficult process must be undertaken immediately with cooperation from all stakeholders, which includes vehicle drivers, refineries and their workers, and local refinery communities. Discussion of leakage is only a distraction from the long-term goal of a just transition from fossil fuels.

In conclusion, we should not be trying an untested mechanism like MDI without further discussion and debate. We respectfully request that the Board strike the MDI from the proposal and retire the 118 million allowances.

Thank you. (BH-CAC-233.1)

Comment:

MDI would jeopardize California's climate targets, as well as billions of dollars in funding that should support public climate investments (affordable transit-oriented housing and major public transit projects, transit services, fare-free and discounted transit passes, and community air quality initiatives). Rather than removing dangerous pollution from our air, CARB proposes adding 118 million new allowances. This allows for more pollution rather than less, and jeopardize billions of dollars in funding for the aforementioned projects that make California more affordable by lowering rents and transportation costs. The truth is that all the benefits would go to Big Polluters, including the state's electricity and gas utility companies and some of the most profitable companies in the world. Californians would pay all the costs, and CARB would be weakening one of the most successful emissions caps in the world. Addressing the climate emergency was always going to be painful. We can't just give up. We have to stay the course, and use programs such as our successful Cap-and-Invest program to ease the economic transition and the green energy transition. To do otherwise means putting the short-term economic convenience of polluters over the suffering that will be

endured by our youth who will have to live with the climate catastrophe that CARB is supposed to be preventing. I urge you to immediately abandon plans to implement the MDI mechanism now. (BH-Moldow-23.1)

Agency Response:

No changes were made in response to these comments. Please refer to Agency Response to Comment O-8.38a.

Regarding increased CAFs for industrial allowance allocation through 2030, see Agency Response to comment O-5.10.

Regarding the optional one-time compliance deadline delay for independent merchant refineries, see Agency Response to comment O-3.6a.

Regarding impact of MDI on facility emissions, local air quality, and public health, please refer to the Agency Response to Manufacturing Decarbonization Incentive (MDI) Comments in the Supplemental Response to Comments on the Environmental Impact Analysis (pages 3-4).

Regarding the impact of the MDI on the Climate Credit, see Agency Response to comment O-8.40.

O-8.39a Multiple Comments: Impact of MDI on the Compliance Offsets Program

California's Compliance Offset Program is the country's most significant nature-based climate finance mechanism. Forest projects have provided the largest share of offset credits, generating carbon sequestration, watershed protection, and economic opportunity for landowners — including Tribal nations—to restore greater and lasting carbon sequestration. While there is room for improvement, the program's integrity rests on a legally mandated standard: credits must be real, permanent, quantifiable, verifiable, and additional. That standard is the foundation on which regulated entities, project developers, and forest landowners have made long-term investment and stewardship decisions. The MDI would introduce a parallel class of compliance instruments that does not meet these standards — allowances issued to industry without the verification, permanence, or additionality requirements that offset credits require. As members of the Legislature have noted, the MDI resembles the existing offset program in structure but without the accountability measures required by law. By flooding the market with additional no-cost compliance instruments, it would suppress the carbon price and reduce demand for offset credits, starving nature-based solutions of the private capital they depend on. If the goal of the MDI is to lower compliance costs, then CARB should take the opportunity which SB 840 directed it to do, which is evaluate and add additional offset mechanisms that meet compliance standards. (15d-PFT-80.7)

Comment:

However, the proposed MDI actually forecloses this opportunity to lower costs while still achieving the desired impact of actually, credibly and permanently lowering emissions. Section 38562.3 of the Health and Safety Code, added by SB 840, directs CARB to report to the Legislature by December 31, 2026 with an evaluation of several aspects of the offset program, including recommendations for "alternative valuation methodologies or criteria for in-state offset projects, particularly projects that support the goals" of California's Nature-Based Solutions Climate Targets (H&SC §38561.5) and its 30x30 biodiversity conservation strategy (PRC §71450(b)). This provision reflects a deliberate legislative judgment that the offset program should do more to direct co-benefits — cleaner water, wildfire resilience, protected biodiversity, sustained rural jobs — to California rather than exporting them to other states.

That mandate opens the door to a fundamentally better model than the existing offsets alone do. Pacific Forest Trust has urged CARB to use the SB 840 report to evaluate a state-directed, conservation easement-based offset program — Nature-Based Climate Credits (NBCCs) — in which the state selects projects rather than leaving siting and overarching co-benefit quality to the private market. State agencies, in partnership with accredited land trusts, would identify conservation easements on working forests, agricultural lands, and rangelands that deliver maximum strategic benefit to California. The resulting credits would meet all existing legal standards — real, quantifiable, verifiable, permanent, and additional — while being designed to prioritize wildfire resilience, ecological connectivity, watershed protection, and 30x30 conservation goals that the current market-driven program cannot systematically target. A self-sustaining revolving fund structure would recycle sale proceeds into new easements, restoration and adaptation, building a durable engine of in-state nature-based climate investments.

The MDI, introduced through a 15-day notice before that study is complete would further suppress carbon prices and undermine the market demand that makes any conservation-based offset program viable — foreclosing the legislative opportunity before CARB has had a chance to fulfill the mandate the Legislature assigned to it. CARB should reject the MDI and direct its offset reform efforts to the SB 840 study process, where they belong. (15d-PFT-80.8)

Agency Response:

No changes were made in response to these comments. Please see Master Response 4 in the Response to Comments on the Environmental Impact Analysis regarding concerns about impacts of MDI allocation on GHG emissions, auction prices, and Program revenues.

Covered entities may continue to use compliance offsets to fulfill up to 6% of their compliance obligations under the Proposed Amendments, as established and

continued by AB 398 and AB 1207, and compliance offsets continue to be a key mechanism for providing cost-effective compliance in the Cap-and-Invest Program. Updates to and/or new compliance offset protocols directed by SB 840 are outside the scope of this rulemaking and will be addressed in a future rulemaking. CARB appreciates the commenter's support for the environmentally robust Compliance Offsets Program.

CARB staff note that the concepts of emissions additionality and permanence as applied to the Compliance Offsets Program are not applicable to MDI because MDI incentivizes emissions reductions that are already covered by the Cap-and-Invest Program and thus by definition cannot be additional and do not operate in the program as an offset. Like other grant or incentive programs that reduce GHG emissions in covered sectors, MDI is designed to increase support and deployment of near-term emissions reduction projects as a complement to the steadily increasing carbon price signal imparted by the Cap-and-Invest Program. The concept of permanence is likewise largely inapplicable to MDI. In the context of MDI emissions reductions, such as those associated with installation of heat pumps, the emissions reductions will occur because the heat pump replaces fossil fuel use and associated GHG emissions that would have otherwise occurred,

O-8.39b Multiple Comments: Impact of MDI on the Compliance Offsets Program

California's Compliance Offset Program is the nation's most significant market-based mechanism for directing private capital toward nature-based climate solutions. Forest offset projects have generated carbon sequestration, watershed protection, and sustained economic opportunity for landowners — including Tribal nations in my district — who manage working landscapes for long-term carbon storage. The program's integrity rests on a legally mandated standard: credits must be real, permanent, quantifiable, verifiable, and additional.

I am concerned that the proposed amendments would introduce a parallel class of compliance instruments — through the Manufacturing Decarbonization Incentive — that does not meet these standards. By making available additional low-cost or no-cost compliance options that are not subject to the same verification and additionality requirements as offset credits, the proposed changes would suppress carbon prices and reduce demand for offsets. (BH-Rogers-7.2)

Comment:

California's Compliance Offset Program is the nation's most significant market-based mechanism for directing private capital toward nature-based climate solutions. Forest offset projects have generated carbon sequestration, watershed protection, and

sustained economic opportunity for landowners — including Tribal nations in my district — who manage working landscapes for long-term carbon storage. The program's integrity rests on a legally mandated standard: credits must be real, permanent, quantifiable, verifiable, and additional.

I am concerned that the proposed amendments would introduce a parallel class of compliance instruments — through the Manufacturing Decarbonization Incentive — that does not meet these standards. By making available additional low-cost or no-cost compliance options that are not subject to the same verification and additionality requirements as offset credits, the proposed changes would suppress carbon prices and reduce demand for offsets. (BH-PFT-42.2)

Agency Response:

No changes were made in response to these comments. See Agency Response to comment O-8.39a.

O-8.40 Comment:

CARB should increase ratepayer assistance through the California Climate Credit -- but must also maintain the strength of the program to maximize the Credit. The California Climate Credit is a valuable tool in addressing the cost impacts of a robust and ambitious Cap-and-Invest program, and it can provide much-needed relief to Californians struggling to make ends meet. CARB should increase allowances that result in an increase to the California Climate Credit, and on the surface, these changes appear to do so. However, the entirety of this Proposal is not likely to result in cost savings for ratepayers. In fact, the proposed changes are likely to lower revenue by $1.7 billion or 17% for the Climate Credit due to lower demand for allowances sold at official auctions, ultimately reducing cost savings for ratepayers. (15d-EJC-124.4)

Agency Response:

No changes were made in response to this comment. Please refer to Master Response 4 in the Response to Comments on the Environmental Impact Analysis regarding MDI allocation and the price and demand for allowances sold at auction. Please also refer to Agency Response to comment W-1.3b regarding potential impacts of MDI on auction revenue and California Climate Credit funding. The primary factor that determines the value provided to ratepayers through the California Climate Credit is the number of allowances allocated to utilities, not MDI allocation for GHG reduction projects by eligible industrial facilities.

O-8.41a Multiple Comments: Additional MDI guardrails

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

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...

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...

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...

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. (15d-EDF-175.3)

Comment:

Clawbacks based on reductions rather than expenditures: As drafted, the regulations require an MDI facility must return allowances to CARB based on the proportion of unspent monetary value of BUCAs. This provides a layer of accountability but an imperfect one because facilities that spend money on eligible activities but never reduce emissions (e.g., breaking ground on a CCUS project that never materializes), or reduce fewer emissions than expected, would not be penalized. (15d-CPC-196.6)

Comment:

Maintaining flexibility through uncertain economic and political conditions. Alongside placing offsets under the cap, the proposed amendments taken together with the January ISOR, will remove around one billion allowances through 2045. Specifics on post-2030 allowance allocations have been deferred to future consideration, retaining

flexibility to respond to emerging developments amid ongoing economic and geopolitical uncertainty. Balancing near-term affordability with continued environmental ambition is especially challenging at this moment, and we appreciate that CARB is trying to strike a balance in light of the “short-term economic uncertainty caused by federal disruption, loss of federal incentives, global events and volatile market conditions” noted in the April 2026 fact sheet. Supporting industrial and hard-to-decarbonize sector emissions reductions while limiting the potential for leakage of manufacturing to other, often more emissions-intensive regions, is a common feature of cap programs. CARB has proposed to place up to 118 million allowances from the 2027-2030 budgets, subject to potential utilization and requirements of the Build Up California Allowances (BUCAs), as a Manufacturing Decarbonization Incentive. This approach allows time to formalize and strengthen BUCA requirements while better understanding the implications of BUCA usage. We are mindful that new program features introduced in one jurisdiction are likely to be considered in other aligned jurisdictions. The flexibility to continue refining BUCA requirements, along with consideration of post-2030 allowance allocations (including industrial assistance factors that may reflect the degree to which BUCAs produce measurable outcomes) as well as ongoing updates to allowance budgets, are important mechanisms CARB can calibrate. Because BUCAs, like offsets prior to this rule-making, are not within the cap but are additional, CARB should carefully ensure the value nexus of BUCA-directed investments. To do this, we encourage CARB to establish clear guidelines that require and rigorously track the nexus between these investments and emissions reductions, as well as important co-benefits such as jobs and affordability. Long-term solutions for addressing the impact of BUCA utilization could include subjecting BUCAs to equivalent rigor and accountability as offsets (real, permanent, quantifiable, verifiable, and additional); or removing from the post-2030 budget an equal number of new allowances (or integrating them into an Emissions Containment Reserve) to retain the original stringency of the cumulative emissions cap. (15d-CP-192.3)

Comment:

E2 encourages CARB to address these issues by considering the following options during the implementation phase: Reducing the allowances distributed through the Build Up California Reserve Account. CARB should be rigorous about the qualifications and application process when implementing MDI, including these three key categories: MDI should be targeted for industries with the potential to reduce (not avoid) onsite facility-level emissions. MDI should be prioritized for competitive, cost-effective project applications. MDI allocations and usage should be monitored and granted where it can achieve verified, durable emissions reductions. CARB should require robust standardized reporting requirements and should publicly provide aggregated data about

projects to better inform industrial decarbonization costs, barriers, and reasons for non-participation. (15d-E2-54.5)

Agency Response:

No changes were made in response to these comments. Please see Master Response 4 in the Response to Comments on the Environmental Impact Analysis regarding impacts of MDI allocation on emissions integrity and Program revenues. Note that as the market administrator CARB does not predict prices and cannot speak to the validity or results of third-party modeling exercises. Additionally, in order to assess any specific modelling results CARB would need to be able to assess the assumptions used and modeling methodologies employed. CARB was not provided with these details by the commenters. Modeling methodologies, projections of future emissions, allowance supply, and assumptions around market dynamics can all significantly impact modeling results as can be seen in the range of third-party modeling results submitted by commenters to CARB in this rulemaking including results that predict both high and low prices.

Note that, per section 95891(g)(8) of the Proposed Amendments, the value of MDI allowances received by a facility must be spent on eligible activities and achieve GHG emissions within six or seven years, depending on the length of the compliance period for which the manufacturing decarbonization incentive allocation allowances were provided. This deadline recognizes the timelines needed to complete complex financing, engineering, and permitting processes for major industrial capital projects, while providing clear and predictable oversight by CARB for any MDI allowance value that is not spent on an approved GHG reduction project. For any value of MDI allocation allowances that remains unspent on eligible activities as of this spending deadline, or upon meeting the requirements for return of allocation, the facility must return an equivalent number of allowances to the Executive Officer by November 1 of the following calendar year.

GHG emissions reductions achieved through the use of MDI allowance value are verified through the facility's annual MRR reporting and verification process and through MDI program reporting following each compliance period. The mechanism for the return of unused MDI allowances discussed above ensures that facilities receiving MDI allocation are accountable for implementing the projects in their approved applications and delivering GHG reductions that support progress toward the State's 2030 and 2045 climate targets.

Regarding additional criteria for prioritizing MDI applications, including cost-effectiveness, see Agency Response to comment O-8.14a. Regarding public

reporting, tracking, and transparency for the use of MDI allowance value and the disposition of allowances in the Build Up California Reserve Account, see Agency Response to comment O-8.45.

Board Resolution 26-7 directs the Executive Officer, by July 1, 2028, to evaluate and propose future amendments, as appropriate, ensuring that facilities that fail to achieve the GHG reductions specified in their applications shall be required to return the value of the MDI allowances for the portion of GHG reductions not achieved in their applications. Any needed changes to further align the MDI program with this direction will be considered in a future rulemaking.

O-8.41b Multiple Comments: Additional MDI guardrails

Regarding CARB's proposal to fund decarbonization investments, we believe additional robust guardrails are necessary to ensure that the new incentive aligns with the structure and intent of the Cap-and-Invest program. However, it is important to acknowledge that CARB has been asked to complete a difficult task during a time of unique economic and geopolitical uncertainty, all while the federal government has completely abdicated leadership on climate. (BH-CSAIPN-8.2)

Comment:

Cap-and-Invest is a bedrock of the State's climate strategy and its continued contribution to climate action is essential. E2 recognizes the critical role Cap-and-Invest plays in cost effectively reducing emissions. Its success is reflected in the statewide economic growth that has accompanied the program. California's GSP more than doubled from 2000 to 2023, even as greenhouse gas emissions fell by 21 percent. The proposed package demonstrates CARB's commitment to aligning Cap-and-Invest with the State's 2045 climate goals. E2 also supports the inclusion of affordability measures, including updates to the California Climate Credit. However, the 15 day changes include a concerning departure from California's climate ambition. The proposed expansion of the MDI redirects allowances previously set for retirement and expands access for the state's refineries. E2 urges the Board to adopt the Program and address these issues during implementation to ensure MDI projects deliver verified durable emissions reductions and meet robust reporting requirements. In conclusion, California risks its climate leadership if the State fails to adopt these regulations on time. We urge the Board to adopt the amendments without delay. (BH-E2-138.1)

Agency Response:

No changes were made in response to these comments. See Agency Response to comment O-8.41a.

O-8.42 Comment: Against MDI and MDI-eligible project categories

(3) Eliminate the Manufacturing Decarbonization Incentive (MDI) and the Build Up California Fund…

Manufacturing Decarbonization Incentive and the Build Up California Fund provide unwarranted support for polluting industries and false solutions at the expense of Californians…

Environmental justice organizations have repeatedly raised emissions and safety concerns regarding biomass-derived fuels such as crop and livestock-based biofuels and biomethane, and carbon capture and sequestration. The use of the MDI to bolster these fuels creates both environmental degradation and market distortions that hinder the development and deployment of real climate solutions. The 15-Day Changes double down on investing significant financial benefits to the tune of billions of dollars in these false solutions that harbor risks such as:

● Biomethane: Dairy Biomethane pathways incentivize dairy producers to increase production, inevitably resulting in increased criteria pollutants and CO2 levels near dairy operations, and detrimental effects on nearby communities.

● Biomass-derived fuels: Biofuels contribute to toxic air pollution for fenceline communities near refineries, and at the tailpipe when combusted, in addition to their feedstock's land use change effects.

● Low-carbon hydrogen: The low-carbon hydrogen requirements in the proposed changes are overinclusive by allowing biomass-derived feedstocks and a range of CO2 emission levels without specificity.

● Carbon sequestration: The legislature directed CARB to evaluate the safety and viability of CCUS and develop monitoring and reporting schedules to ensure safety and efficacy under SB 905 (2022). Until CARB has developed a regulation for CCUS, the inclusion of carbon sequestration in the MDI is premature and likely dangerous…

Handouts to industry take money away from programs that actually benefit Californians.

Stacking 100% leakage assistance and the MDI will have significant GGRF implications. Conservative calculations indicate that the incentives alone would result in $2.3 billion less in GGRF through 2030 on top of the significant free allowances from leakage policies that CARB has elected to extend. Throughout the lifetime of the program, leakage assistance to oil refiners alone has resulted in over $6 billion in giveaways to the industry that would have otherwise benefited Californians through environmental justice programs funded by GGRF. In a staggering blow to the Program and environmental justice communities, the MDI and additional leakage support could result in refineries receiving free allowances well in excess of their GHG emissions. The

generous MDI on top of the leakage assistance in the 15-Day Changes is also likely to lower prices on the secondary market below the price floor, impacting demand and reducing GGRF revenue. Under the hierarchy of appropriations created under SB 840 (2025), programs that directly benefit Californians and address affordability concerns, such as the Safe and Affordable Drinking Water Program, Affordable Housing and Sustainable Communities Program, Community Air Protection Program (AB 617), and transit programs, are likely to go unfunded. (15d-EJC-124.3)

Agency Response:

No changes were made in response to these comments. Please refer to the response to Comment 15-124-1 in the Response to Comments on the Environmental Impact Analysis and Agency Response to comment and W-1.3b. Note that the value of all MDI allowances provided to an eligible facility must be spent on an eligible project and must be returned if not spent in accordance with the regulation; MDI allowances are not “free allowances” for direct compliance support. Any company receiving MDI allowances does so knowing that if not used for the intended purpose, the value must be returned to CARB.

O-8.43a Comment: Against MDI and Increased CAFs

As written, the proposal risks compromising the integrity of the program itself. An oversupply of allowances reduces the real need to undertake emissions reductions and creates downward pressure on allowance prices. The proposed Manufacturing Decarbonization Incentive (MDI) which would create an allowance pool under the new “Build Up California Reserve” would further undermine the cap by introducing large volumes of allowances outside the emissions limit that equal the proposed cap decline, effectively offsetting emissions reductions and calling into question whether the program will deliver real climate progress. ... This proposal fails to deliver meaningful emissions reductions or durable climate investments, while providing excess allowances to the oil and gas industry with no guarantee of lower fuel prices for consumers. Even with an oversupply of allowances, petroleum prices will continue to spike during global supply disruptions or refinery outages, leaving Californians exposed to ongoing market volatility. While gas prices soar due to international supply shortages, oil companies are raking in record profits. It is unacceptable to create handouts for the oil and gas industry at the expense of our communities. We request that CARB swiftly update and finalize the regulation in time to implement changes this fall with the following critical revisions:

● Eliminate the Manufacturing Decarbonization Incentive (MDI) and Build Up California Reserve, which introduce off-cap allowances that undermine the emissions cap and have not been sufficiently evaluated through public process.

● Correct allowance oversupply by revising allocation levels and lowering the cap adjustment factor, ensuring the program maintains a strong and credible price signal for emissions reductions. (15d-CLPC-75.2)

Agency Response:

No changes were made in response to these comments. Regarding the impact of the MDI allocation proposal on emissions integrity, affordability, and Program revenues, see Agency Response to comment O-8.38a. For public process concerns, see Agency Response to comment V-2.4. Regarding increased CAFs for industrial allowance allocation for leakage protection, see Agency Response to comment O-5.10.

O-8.43b Comment: Against MDI and Increased CAFs

My research team analyzed retail gas prices at the pump, and found that more allowances to refineries do NOT result in lower gas prices. However, Subsidizing refineries with allowances does increase their already high profits and payouts to executives. I live in Richmond near the Chevron refinery, and they are not good neighbors. For example, Chevron fought installing wet scrubbers, which is an industry standard to reduce toxic emissions that harm nearby communities. Chevron has made false economic statements in arguing that additional regulations will result in their leaving California. Meanwhile Chevron's toxic emissions cause health problems, especially for children and elders. CARB needs to do better at reducing refinery GHG emissions and not reward refineries with more allowances and MDI. These subsidies ensure the refineries will continue to produce dirty oil products indefinitely with vulnerable AB-617 communities suffering from health problems and receiving inadequate GGRF funds to help them improve air quality and public health. CARB's current plan is a big handout to Big oil and a big step back from helping communities. I urge the Board to direct CARB to end refinery allowances and remove the MDI, to meet climate goals and protect the public health of our frontline communities. Thank you for your service to California residents and environment. (BH-Brown-43.1)

Comment:

Okay. Sorry. Sorry about that. So, I'm Sara Theiss, a volunteer with Fossil Free California and CBE. And I want to thank the Board for your attention to my comments and those of others. I can't imagine how you're focusing, but I thank you for doing so.

According to CARB's website, its mission is to quote, "Promote and protect public health, welfare and ecological resources through the effective reduction of air pollutants while recognizing and considering effects on the economy."

My husband and I live in Richmond, as do my daughter and her family. Among the five of us, three have conditions made worse by air pollution, CPPD, asthma and diabetes.

CARB's proposed plan would increase pollution. And the last thing we need here in Richmond, home of the Chevron refinery, is more toxic air.

So this is really personal to me. I ask that you live up to your mission to protect public health and reject this 15-day packet and eliminate the Manufacturing Decarbonization Program, and also that, per your mission, you quote, "Recognize and consider", that oil and gas companies are making record profits. For example, Chevron's gross profit increased 174 percent to 49 billion in just the first quarter. And this was after a 38.7 increase in the prior 12 months.

Let's see. Finally, oil prices are set on the world market. It's not clear to me how giving the oil and gas sector more allowances will actually lower the price of fuels. And if we want to subsidize something related to energy, we should be supporting renewable energy. Thank you so much for listening. (BH-FFCCBE-265.1)

Agency Response:

No changes were made in response to these comments. See Agency Response to comment O-8.43a.

Please refer to W-1.3b for agency response to comments regarding general impacts on GGRF.

Regarding the impact of MDI on emissions integrity, affordability, and Program revenues, see agency response to comment O-8.38a.

Please refer to Master Response 4 in the Response to Comments on the Environmental Impact Analysis regarding decarbonization and the displacement of fossil fuels.

O-8.44 Comment:

While the 15-Day Amendments make meaningful improvements to the MDI and materially enhance its practicality as a decarbonization tool, the mechanism’s ultimate effectiveness will turn heavily on clear implementation details and credible long-term signals from CARB.

As with many novel regulatory mechanisms, the value of the MDI will depend on whether it can bridge the gap between a theoretical compliance option and a usable tool with real-world application. For the mechanism to influence capital decisions, covered entities must be able to incorporate it into project planning with reasonable confidence regarding eligibility criteria, approval standards, qualifying investments, and implementation timelines. Clear communication regarding program expectations can help ensure the MDI functions as a credible investment signal rather than a conceptually attractive incentive with uncertain practical value. This need for predictability is heightened by the 15-Day Amendments’ publication of cap allocation

factors only through 2030. For emissions-intensive, trade-exposed industries making long-lived capital investments, decisions are not made on short-term horizons. The absence of longer-term visibility into allowance allocation reinforces the importance of clear signals from CARB regarding how the MDI is intended to operate and how it fits within the broader trajectory of industrial decarbonization and leakage protection under the program.

The usefulness of the MDI may also hinge on implementation timelines aligning with the realities of permitting, engineering, and deployment for major industrial decarbonization projects, which often unfold over many years. That is particularly important because the MDI is intended, in part, to support investments whose benefits may extend decades into the future. For those investments to materialize, regulated entities need not only an incentive structure, but confidence that the mechanism can be used in a sufficiently predictable and timely manner. Clear implementation expectations can help translate the MDI from a regulatory incentive into a usable investment signal.

In short, while the 15-Day Amendments represent meaningful progress, realization of the MDI's potential will be shaped in significant part by implementation that is predictable, administrable, and capable of supporting long-term investment planning. (15d-CCoC-158.6)

Agency Response:

No changes were made in response to this comment. Staff appreciate the support on the proposed changes to the MDI allowance allocation proposal. The MDI allocation mechanism includes guardrails on projects, usage limits, time limits, and eligibility criteria. Entities seeking to apply for MDI allocation must meet eligibility requirements and submit applications by specified deadlines. Sections 95891(g)(6) and 95891(g)(7) provide clear instructions on application and reporting requirements that are predictable, administrable, and capable of supporting long-term investment planning.

See Agency Response to comment O-8.41a regarding the extended deadline for spending MDI allowance value on eligible facility GHG reduction projects.

CARB will provide transparent public reporting on the MDI program. See Agency Response to comment O-8.45 for details about planned public reporting.

Finally, Board Resolution 26-7 directs the Executive Officer to hold at least one public workshop on the implementation of the MDI program prior to the issuance of any MDI allowances.

O-8.45 Multiple Comments: MDI public reporting and transparency

Should the MDI be retained in the final regulations, we urge CARB to put forth resolution language to implement guardrails around MDI management with consideration for the following:

- Transparency on MDI implementation, including timely public disclosure on the number of applications received, allowances awarded, vintages, and projects supported
- Ongoing monitoring of program performance against GHG targets; annual tracking and verification tied to SB 32 attainment, with reporting on adjustments as needed
- The 2027 CARB Scoping Plan update as a natural checkpoint for comprehensive program review (15d-CE-181.5)

Comment:

Seize the opportunity to learn more about industrial decarbonization opportunities. If California is going to commit significant public resources to industrial decarbonization, it should also use this opportunity to build an evidence base. Standardized reporting on project costs, performance, and emissions impacts would generate valuable information about investments in industrial decarbonization where empirical evidence on abatement costs remains limited. (15d-Fowlie-16.4)

Agency Response:

No changes were made in response to these comments. The proposed Regulation already contains extensive reporting requirements on costs, performance, and emissions impacts (see section 95891(g)(7)). Per Board Resolution 26-7, CARB will report publicly on MDI program implementation and GHG reduction projects funded by MDI allowance value, including:

- Summaries of approved MDI applications by facility, including information on the project type and expected emissions reductions, while protecting any confidential business information consistent with applicable legal requirements.
- Annual reporting on the number of MDI applications received and approved, and the number of MDI allowances issued in total and by sector, MDI allowances remaining, MDI allowances returned, and MDI allowances retired.
- Separate tracking of MDI allowances in the registry system, with MDI allowances included as their own category in the Quarterly Compliance Instrument Report.
- Reporting after the end of each compliance period on the types of projects supported by the MDI allowances, projects' need for financial incentive,

and how the incentive accelerated near-term project implementation; results in and progress toward project GHG emissions reductions as third-party verified; any unused MDI allowances still in circulation; any unused MDI allowances returned to CARB for retirement; how the MDI allowances supported project implementation as described in approved applications; and, the results in and progress toward meeting the expected GHG emissions reductions.

O-8.46 Comment:

The auction reserve price is an important feature of the program, helping to support program revenues and provide a predictable price signal to drive investment by managing the potential variability of prices. However, the ability of the ARP to provide a "soft" floor on the secondary market is weakened by the proposed increases in the quantities of free industrial allowance allocations, particularly from the Build Up California Reserve Account (BUCRA). In addition, the uncertain timing and quantities of BUCRA allowances to be allocated each year under the Manufacturing Decarbonization Incentive (MDI) Allocation program will contribute to market uncertainty. This at the same time as the added free allocation and MDI allocations stand to reduce demand for the auction, potentially more than one for one if each allowance allocated reduces emissions by at least one ton in addition to expanding the allowance budget by one ton. The combined effect will be to depress the price, potentially below the auction floor price.

Maintaining the ability of the auction reserve price to provide a soft floor on the market is important not only for program revenues but for supporting a stable gradually rising price signal that drives investment, potentially countervailing the purpose of the MDI program.

A logical solution would be to require that all industrial entities that receive free allocation consign their free allocation for sale during the auctions in the same way as investor-owned utilities. In particular, all entities receiving MDI allowances should be required to monetize these via consignment auctions, rather than selling them on the secondary market or using them directly for compliance. This would bolster the ability of the price floor to stabilize the market.

As we have noted in prior comments, in the context of declining auction volumes, this would bolster the ability of the auction reserve price to assure a predictable price signal to drive investment in line with California's climate goals. These consignment requirements would also increase liquidity and price transparency and correspondingly reduce potential for market manipulation in the context of smaller overall allowance budgets. (15d-Lubowski-89.1)

Agency Response:

No changes were made in response to this comment. MDI allowances are provided to eligible facilities through applying a flat Cap Adjustment Factor modifier to the standard industrial allocation formula in section 95891(b) or (c) of the Regulation. Facilities receiving industrial allowance allocation have not historically consigned allowances to auction, and opening consignment accounts and navigating the consignment process would present a notable administrative burden for CARB staff and for each industrial facility potentially eligible for MDI, which could discourage participation and the investments MDI is designed to support. The proposed MDI allocation structure, where eligible facilities may either hold MDI allowances for future compliance or sell them to other registered entities, provides flexibility for eligible facilities planning project financing and Program compliance strategies that further facilitates participation in the MDI program and lowers costs and emissions leakage risk.

See Master Response 4 in the Response to Comments on the Environmental Impact Analysis regarding MDI impacts on auction prices and revenue.

O-8.47 Comment:

Kern understands that by incentivizing electrification of equipment, Staff is seeking to (1) replace existing equipment with electrified equipment to reduce or avoid fossil fuel combustion, and (2) allow MDI allowances to cover the cost of electricity powering this replacement equipment. The inclusion of “new” and “newly installed” in the amended Section 95891(g)(2)(B) obscures Staff’s intent that this provision applies to replacement equipment. Kern recommends, for clarity of intent, Staff consider revising this section to read “…costs of replacement equipment powered by electricity…provided that the replacement equipment results in a reduction or avoidance of onsite fossil fuel combustion.” (15d-KE-190.6)

Agency Response:

No changes were made in response to this comment. The Proposed Amendments recognize that electrified equipment that directly reduces facility fossil fuel use may augment, rather than fully replace, existing equipment powered by fossil fuels. For example, a facility may choose to keep the existing fossil fuel equipment as a backup option to hedge against energy reliability concerns. The proposed regulatory text specifies “new” or “newly installed” equipment which covers both full replacements of fossil fuel equipment and installations of electrified equipment that do not coincide with fully decommissioning the fossil fuel equipment. This rationale is described in the Notice of Public Availability of Modified Text and Availability of Additional

Documents and/or Information for section 95891(g)(2)(B) of the 15-day Amendments.

O-8.48 Comment:

Kern urges Staff to reassess the limitations imposed by the narrow specificity in Section 95891(g)(2)(D) that electricity generation or storage must be renewable in order to be eligible for these MDI allowances. In Staff's Summary of Proposed Modifications, emphasis is on emissions reductions associated with reduced or avoided fossil fuel combustion. The specificity of "renewable" narrows opportunities to achieve this foundational goal by assuming renewable electricity is the only means to realize these reductions. Project applications must provide demonstrable emissions reductions relative to baseline, which should ultimately be the deciding factor of project merits. This opportunity for decarbonization and full use of MDI allowances is better served by removing the "renewable" qualifier on the generated or stored electricity in favor of technology-neutral language such as "non-combustion-based." (15d-KE-190.7)

Agency Response:

No changes were made in response to this comment. Renewable electricity is a concept that is already defined in the Cap-and-Invest Regulation and aligns with other State policy incentivizing GHG emissions reductions in the electricity sector. Further, this text ensures MDI allowance value is used in a manner that aligns with the deep decarbonization strategies for industrial manufacturing envisioned in CARB's 2022 Scoping Plan Update.

O-8.49 Comment:

CMTA appreciates CARB's continued inclusion of a Manufacturing Decarbonization Incentive. Given the loss of federal funding opportunities and the high cost of industrial decarbonization technologies, this mechanism is increasingly important. We note several constructive revisions in the 15-day package, including: Applicability to budget years 2028–2035; Replacement of the prior modifier schedule with an "up to 0.8" modifier; Clarification that modifiers apply only to initial allocations and not to true-ups; Expanded eligible activities, including methane reductions, exempt biomass-derived fuels, alternative materials that reduce process emissions, and carbon capture utilization or sequestration; and Revised application deadlines of June 1 of the preceding year. CMTA particularly welcomes the inclusion of alternative materials projects, including investments to use new or increased amounts of lower-emission materials that reduce benchmark process emissions.

However, additional clarification and refinement are necessary. CMTA recommends that CARB: Establish transparent prioritization criteria if applications exceed available allowances; Clearly define how proration will occur if requests surpass available sector allowances; Provide detailed application guidance and sufficient lead time for

compliance; Establish a mechanism for facilities to petition for inclusion of additional qualifying project categories on a case-by-case basis as technologies evolve; and Create a reasonable lookback period allowing qualifying capital projects already undertaken in good faith, and still on active depreciation schedules, to be eligible for consideration. (15d-CMTA-204.5)

Agency Response:

No changes were made in response to this comment. CARB appreciates the commenter's support for the 15-day Amendments to the MDI allocation proposal.

Regarding MDI allocation in any year in which the Build Up California Reserve Account is exhausted, note that section 95891(g)(9)(C) of the Regulation outlines the process for prorating allowances to all eligible facilities by sector grouping with an approved MDI application. This mechanism reduces each facility's MDI allocation proportionally to provide equal opportunity for all eligible MDI projects in the final year where MDI allowances are available.

Per Board Resolution 26-7, CARB will hold at least one public workshop on the implementation of the MDI program prior to the issuance of any MDI allowances.

Regarding flexibility for MDI project applications beyond the scope of projects listed in section 95891(g)(2)(A)-(H), see Agency Response to comment O-8.14a.

Regarding the effective date for MDI spending eligibility and consideration of a "lookback period," see response to comment O-8.2a.

O-8.50 Comment:

Several 15-day revisions addressed our April recommendations, for which we are grateful: EDU allowance allocations for 2027–2030 were increased for most utilities, stabilizing the California Climate Credit and addressing a portion of the $4.9 billion gap the Joint Utility Group documented. A new §95893(d)(8) provision directs 30 percent of NGS allocation value to low-income residential ratepayers beginning January 2028, acknowledging that low-income gas customers bear disproportionate transition burden.

The Manufacturing Decarbonization Incentive ties additional allocation to demonstrated decarbonization investment. The U.S. Acid Rain Program achieved SO2 reductions ahead of schedule and below projected costs by giving industry the certainty to invest rather than exit. MDI works on the same premise. A qualifying facility that modernizes is a California employer, regulated under California standards, producing for California consumers. The alternative is grim, as two refinery closures, more than a dozen food processer exits, and reduced output for cement, glass, and other exposed commodities have already demonstrated. The MDI gives CARB a tool to prevent regrettable – and in the case of fuel, potentially catastrophic – outcomes. That said, MDI incentives must

maintain the program's environmental integrity by being subject to clear accountability standards, like offsets, that ensure they will provide additional GHG emission reductions or removal. (15d-CPSC-101.1)

Agency Response:

No changes were made in response to this comment. CARB appreciates the support for the 15-day Amendments to utility allocation and general support for the MDI allocation proposal as a tool to support decarbonization of California manufacturing facilities and reduce GHG emissions while keeping efficient production and jobs in-state.

Regarding environmental integrity and guardrails for the MDI program, see Master Response 4 in the Response to Comments on the Environmental Impact Analysis.

Regarding "additionality" of GHG reductions funded with MDI allowance value, as compared to compliance offsets, see response to comment O-8.39.

O-8.51 Comment:

The proposed amendments confound our ability to achieve our climate goals and preserve the integrity of the cap. What evidence, oversight, and recourse will CARB use to ensure that one Manufacturing Decarbonization Incentive allowance will represent one bona fide ton of emission reductions? ...

Q1: Do the proposed amendments put us on track to achieve the requirements of SB 32 & AB 1279? How does 11% annual reduction in GHG emissions compare to historic program performance?

Q2: The ISOR recognized that more stringent allowance budgets were needed 2027-2030 to reflect recent updates to the GHG Emission Inventory, and it proposed removing approximately 118 million allowances accordingly. Do the 15-day amendments remove enough allowances from circulation to achieve our 2030 GHG target?

Q3: Since the spending deadline for the value of MDI allowances is at least six years (i.e. two full compliance periods) after the allowances are granted, how will CARB account for those emissions in the period between when allowances are given and when projects are delivered?

Q4: What evidence, oversight, and recourse will CARB use to ensure that one MDI allowance will represent one bona fide ton of emission reductions? (15d-SCBSDEGRSD-176.2)

Agency Response:

No changes were made in response to this comment. As requested, CARB discussed these questions with the Senate Environmental Quality Committee and Senate Subcommittee No. 2 On Resources, Environmental Protection and Energy on May 5, 2026.

Regarding alignment with SB 32 and AB 1279 targets, please refer to Master Response 4 in the Response to Comments on the Environmental Impact Analysis regarding the removal of allowances, increased program stringency, and the allowance budget trajectory supporting State's GHG reduction targets.

The 11% annual reduction from 2027-2030 refers to the year-over-year decline in the allowance budgets. Relative to 2024, the most recent year of verified MRR emissions data, total covered emissions in the Program need to achieve a 4% annual decline through 2030 in order to support meeting the statewide 2030 target, which is consistent with annual covered emissions declines in recent years.[2] Increased Program stringency through 2030 and 2045, including the removal of 118 million allowances from 2027-2030 budgets to reflect the GHG Inventory adjustment and over 1 billion allowances removed through 2045, supports continued progress toward the 2045 target. The MDI also acts to reduce the uncertainty of achieving the 2030 target by supporting more reductions sooner in the industrial sector as federal actions delay implementation of state vehicle regulations.

Up to 118 million MDI allowances are offered to eligible facilities from 2028-2035 in exchange for demonstrable investments in low-carbon production methods and fuels that reduce their covered emissions and support accelerated progress toward the 2030 and 2045 GHG reduction targets in light of potential delays in reductions for other sectors due to federal actions. MDI allocation is offered on a compliance period basis and is capped for each facility by a flat CAF modifier of up to 0.8. Any MDI allowances provided to eligible facilities for approved applications before 2030 do not increase emissions or jeopardize achieving the 2030 target, as these allowances are one minor factor among many that determine the total allowance supply available to compliance entities (including the cumulative budgets, allowance banking, holding limits, and allowance removals for offset use per AB 1207), and because many factors beyond the allowance supply influence the actual emissions outcome in any given year, including other state level policies administered across state government and at CARB. Facility investments funded with MDI allowances may also have benefits

[2] For an illustration of the needed trajectory, see slide 21 of the May 28, 2026 Cap-and-Invest and MRR Regulation Amendments Board Hearing Presentation,

beyond the single ton of carbon represented by each GHG allowances, due to the “multiplier effect” whereby accelerated investment timelines produce near-term GHG benefits that continue to compound into the future. And all approved MDI projects are subject to rigorous reporting and oversight requirements, including continued annual reporting and verification of facility covered emissions under MRR.

The establishment of MDI does not change the budget adjustment or automatically place the full amount of potential MDI allowances into circulation. MDI allowances would become available only through the regulatory process for MDI applications, including project review, approval, and distribution consistent with the regulatory requirements. The timing and amount of MDI allocation would therefore depend on actual applications, approved eligible projects, sector-specific availability in the Build Up California Reserve Account, and the allocation process. MDI allowance value is subject to MDI-specific use, reporting, and return requirements. The Proposed Amendments also include safeguards governing the use and return of MDI allowance value. Facilities receiving MDI allocation must use the allowance value for eligible GHG reduction activities and report on project progress, energy-use changes, estimated GHG reductions, and allowance value spent. Unspent MDI allowance value must be returned as an equivalent number of allowances for retirement, based on any value of MDI allowances provided that was not spent to achieve GHG reductions per the approved project application by the spending deadline.

MDI allocation does not change how emissions are accounted for during the period before an MDI-supported project is implemented. Facilities receiving MDI allocation remain subject to the Program’s emissions reporting, verification, and compliance requirements for their actual emissions. MDI is not an offset or crediting mechanism under which each allowance is treated as representing one achieved ton of emission reductions. MDI is intended to provide support for industrial decarbonization investments that may be costly to undertake, or may occur more slowly, without such support. MDI is implemented through its own fixed cap adjustment factor modifier to support eligible industrial decarbonization investments under an increasingly stringent cap while helping minimize leakage risk. Accordingly, emissions in the intervening years continue to be accounted for through existing Program and MRR reporting and compliance systems, while MDI-specific requirements track the use of allowance value and project-related reductions over time.

O-8.52 Comment:

The Legislature's clear intent and direction are not consistently and faithfully executed.

Q1: The Legislature and CARB alike have emphasized a focus on affordability, and although CARB has claimed these amendments do so, the connections are unclear. Specifically:

▪ What evidence did CARB rely on to determine that providing subsidies to industry would result in lower consumer costs?

▪ Is there any evidence that refineries will pass along the savings for reduced compliance costs to consumers?

▪ Is the Cap & Invest regulation in any way related to the current fuel price spike that Californians are experiencing?

▪ Did CARB consider the impacts for affordability and for GHG emissions of eliminating the only continuous state funding source for affordable housing? Of eliminating TIRCP? LCTOP? SAFER? Wildfire prevention? AB 617? Or the impact of eliminating the possibility of supporting ZEV incentives, natural and working lands investments, agricultural emissions reductions?

Q2: What impacts do the proposed amendments have on maintaining C&I as a "cost-effective, market-based approach" when market signals are disrupted by millions of allowances being awarded outside of the traditional auction or allocation routes?

Q3: Did CARB consider the cost effectiveness of MDI allowances compared to the Legislative priorities established in SB 840 that it defunded? Did CARB consider the relative cost effectiveness of the MDI against the entire suite of California Climate Investments supported by GGRF?

Q4: How is CARB executing the Legislature's direction that "Commencing January 1, 2031, the state board shall distribute industrial sector allowances in a manner that minimizes emissions leakage risk to cost-effectively achieve [our climate goals]", particularly when proposing no action on post-2030 industrial allowances?

Q5: The 2017 reauthorization directed CARB to "Report to the Legislature, by December 31, 2025, on the progress toward meeting [our climate goals] and the leakage risk posed by the regulation. The state board shall include recommendations to the Legislature on necessary statutory changes to the program to reduce leakage, including the potential for a border carbon adjustment, while maintaining the state's ability to reach its targets." Where is the required report, and why is the current rulemaking proceeding and making changes to leakage provisions without it?

Q6: What evidence does CARB have that the proposed amendments to the regulation will prevent leakage? How were alternative approaches considered?

Q7: How do the accommodations for independent merchant refiners prevent leakage, and not just defer it by two years with a balloon payment at the end? How is that mechanism reflective of legislative intent? (15d-SCBSDEGRSD-176.1)

Agency Response:

No changes were made in response to this comment. As requested, CARB discussed these questions with the Senate Environmental Quality Committee and Senate Subcommittee No. 2 On Resources, Environmental Protection and Energy on May 5, 2026.

1. The 2022 Scoping Plan recognizes that achieving California's 2030 and 2045 climate targets requires an economy-wide transformation, including deployment of clean technologies and deep decarbonization in hard-to-abate sectors through a portfolio of measures such as carbon pricing, regulations, and incentives. Consistent with that framework, MDI allocation is designed to provide targeted support for eligible industrial facilities to invest in cleaner production under an increasingly stringent cap, reduce compliance-cost pressure, and help maintain in-state production while reducing facility emissions. MDI is part of a broader affordability, leakage-prevention, and industrial decarbonization strategy.
    - Please refer to the Agency Response to Comment O-8.38a regarding the pass-through of compliance-cost savings and consumer costs.
    - The current fuel price increases experienced by Californians are influenced by a range of factors, including global crude oil markets, refinery operations, fuel supply conditions, and other market dynamics. The Proposed Amendments do not establish a direct causal connection to recent fuel price spikes. The Proposed Amendments balance legislative direction, GHG reduction goals, affordability, jobs, and near-term concerns while continuing to provide market signals for long-term emissions reductions. This is a delicate balance as the number of available allowances, and therefore potential auction revenue, declines over time.
    - CARB does not allocate or control funding; that is a process handled by the Legislature in coordination with the Governor. CARB cannot, and has not, eliminated any funding.
    - The MDI allocation provision does not change how many allowances are offered at the auction, and therefore, does not directly impact GGRF proceeds. CARB disagrees with the assumption that allowances potentially issued through MDI eliminates the funding for GGRF-supported

projects or impacts the emission integrity of the Program. MDI-supported projects are intended to achieve long-lived industrial decarbonization investments and therefore are not directly comparable to individual allowances issued for a single compliance period. Further, auction proceeds and GHG reduction outcomes are distinct considerations. While auction proceeds provide important support for a variety of State programs, the relevant question for evaluating the Proposed Amendments is whether the regulatory design advances the objectives established by statute. Maximizing auction revenue is not a statutory objective of the Program. The Program is designed to achieve cost-effective GHG reductions while minimizing leakage and considering affordability impacts. Please also refer to Master Response 4 in the Response to Comments on the Environmental Impact Analysis and Agency Response to comments O-8.38a, O-8.51, and W-1.3b.

2. Regarding market signals, CARB does not predict auction prices. In addition, the commenter assumes that each allowance issued through MDI directly displaces an allowance that otherwise would have been purchased at auction. CARB disagrees with that assumption. See Agency Response to comment O-8.1b. MDI allowances are subject to application, eligibility, reporting, and return requirements. The Proposed Amendments limit the quantity of MDI allowances that may be distributed in a compliance period. Therefore, the maximum amount of MDI allowances authorized through 2035 could not enter the market at once. Historical experience also indicates that substantially larger allowance volume changes have not resulted in significant market disruption. Linkage and subsequent de-linkage with Ontario involved approximately 150 million allowances entering and leaving the Program, while allowance prices changed by approximately $0.50 per allowance.[3]
3. Regarding relative cost-effectiveness of MDI and California Climate Investments programs, CARB did not conduct a program-by-program comparison as they are designed to address different policy objectives, and thus the cost-effectiveness of the range of programs funded by GGRF and the site-specific industrial GHG reductions should not be expected to be the same. However, a review of the publicly available annual CCI report indicates a cost per metric tonne value of implemented projects ranges from about $9 to $164,000 (CARB 2026e). As discussed above, MDI is designed to support continued in-state industrial production under a more stringent Cap-and-Invest Program, while facilitating long-term emissions reductions and addressing compliance-cost pressures and leakage risk. CARB estimates that

[3] *See* 2018 prices in Cap-and-Trade Program Data Dashboard | California Air Resources Board.

these costs are in the range from about $70 per metric ton to $400 per metric ton depending on abatement technology and sector. (SRIA, Table 16.) Additionally, Board Resolution 26-7 directs the Executive Officer to report to the Board, and to evaluate and propose, as appropriate, future amendments to the MDI program prior to receipt of MDI applications and issuance of any MDI allowances. Consistent with Board Resolution 26-7, CARB will evaluate and monitor MDI implementation through project review, public reporting, and stakeholder engagement processes.

4. Regarding and post-2030 allowances, please refer to Agency Response to Comment V-1.3 on CARB's consideration of post-2030 allocation and the timing of future rulemakings.
5. Regarding leakage analysis, please refer to the Agency Response to comments O-1.1a and O-5.4a. Please also refer to Agency Response to Comment O-5.10 on leakage risk and industrial allocation. And please refer to Agency Response to comment O-13.3 regarding the AB 398 leakage report.
6. See response to question 5. In addition, CARB continues to evaluate possible alternate approaches to mitigate emission leakage, see Agency Response to comment O-4.1a.
7. Regarding independent merchant refiners, see Agency Response to Comment O-3.6a.

O-8.53 Comment:

Public Notices for low carbon fuel standards applications coming from overseas, across the country by truck are also perplexing as to how all those fossil fuels can be expended to transport a fuel, processed or to be processed, can really have any net benefit on carbon dioxide emissions. Carbon capture and sequestration is extraordinarily when the focus in the 2022 Scoping Plan is "on strategies for reducing California's dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs." Reducing energy use, being more efficient is a clear pathway rather than continuing on with incentives for refiners to fund their carbon capture and sequestration stalling efforts. This 15-day quick turnaround created a sense of unfounded urgency that not only detracts from emission reduction strategies for polluting activities but undermines transparency and fairness towards community investments relating to local clean air initiatives that improve public health and reduce medical costs, transportation improvements, and true forest resilience around home hardening and forest community ecosystem benefits. Further, I understand that these amendments are not necessary to enable the California Public Utilities Commission to complete its current phase of the California Climate Credit procedures, anticipated in winter 2026. If the MDI is eliminated then there will be a higher, more uniform Climate Credit which benefits all. CARB

Members are tasked with delivering cost-effective emissions reductions programs that are aligned with California's climate targets. These changes do not do this. Instead stop and give time for the whirlwinds to die down so that long-lasting strategies can be included rather than running after promised short-term gains.

Please:

▪ Reject the 15-day changes proposed by the staff and ask staff to create a revised proposal that keeps the integrity of the program intact; and

▪ Postpone the decision on this important environmental and social justice issue to a later Board Hearing to allow for full engagement of the public and various stakeholders. This requested delay in adopting programmatic changes will not hinder CARB's ability to continue the program under current regulations, including exploring more sustainable amendments that leads to real greenhouse gas reductions. (BH-SEJEA-12.1)

Agency Response:

No changes were made in response to this comment.

Regarding covered emissions exemptions for biomass-derived fuels, see Agency Response to comment R-1.4a.

Regarding the use of MDI allowance value for CCUS projects, see Agency Response to comment O-8.31a.

Regarding other GHG reduction project categories eligible for the use of MDI allowance value, see Agency Response to comment O-8.14a.

Regarding the impact of the MDI allocation proposal on emissions integrity and Program revenues, see Master Response 4 in the Response to Comments on the Environmental Impact Analysis.

Regarding the CPUC proceeding for updating the California Climate Credit, see Agency Response to comment J-3.1.

Regarding consultation with the EJAC as part of this rulemaking process, see Agency Response to comment V-4.1.

Regarding the impact of further rulemaking delays on market uncertainty, Program stringency, auction prices, and Program revenues, see Agency Response to comment V-1.2b.

O-8.54 Comment:

Project 2030 strongly supports the MDI and looks forward to working with CARB on its implementation. The questions below reflect areas where additional clarity would help

project developers, CDR investors, and other stakeholders plan their participation and ensure the program delivers on its promise.

Awarding or Rejecting Applications:

1. Will CARB have the authority to reject applications that meet stated eligibility criteria but raise concerns on other grounds — such as risk, project design, or consistency with the Scoping Plan?
2. How will CARB prioritize among projects that all meet the eligibility criteria?

Quantity of MDI Allowances:

3. CARB leadership has indicated an expectation of approximately 25 million MDI allowances awarded annually. Can CARB establish a formal limit to that amount?
4. Could CARB adjust eligibility criteria after reviewing outcomes from the first year of awards?

Use of MDI Allowances:

5. Our understanding is that free MDI allowances cannot be used for compliance by the recipient. If correct, are recipients limited to selling them in the market and using proceeds for eligible investments?
6. Will CARB limit how many MDI allowances a recipient can bank or sell in a given year?

Advancing CDR Through the MDI:

7. Does CARB anticipate that covered entities will find it economical to purchase or develop CDR under this program? If so, can you share an example of how that might work in practice?
8. If not, would CARB consider proposals for designating a minimum portion (e.g., 10%) of MDI allowances for a program that specifically encourages CDR projects developed in California?
9. What CARB guidance exists — or is needed — on how obligated parties should attribute and report MDI-funded carbon removals within their entity-level GHG inventories? (BH-P2030-39.5)

Agency Response:

No changes were made in response to this comment. CARB appreciates the commenter’s support for the MDI allocation proposal. The following responses are provided corresponding to the commenter’s questions in the order above:

1. Per section 95891(g)(1) of the Proposed Amendments, MDI allocation will be provided to a facility if all eligibility requirements under section 95891(g) are met. CARB must implement these requirements fairly and consistently under the

Administrative Procedures Act and cannot reject project applications on grounds not delineated in the Regulation.

2. The Proposed Amendments do not include a mechanism for prioritizing between eligible MDI applications. The amount of MDI allowance value provided to any eligible facility is bounded by the flat CAF modifier of 0.8. CARB staff estimate that the 118 million MDI allowances available in the Build Up California Reserve Account will not be exhausted until after 2030, even if every eligible facility submits an application for the full amount of MDI allowances available to them. In any year where the MDI allowances in the Build Up California Reserve Account would be exhausted, the number of MDI allowances provided to each facility will be reduced proportionally pursuant to section 95891(g)(9)(C).
3. The Proposed Amendments do not include a specified limit to the number of MDI allowances that may be issued annually beyond the de facto bound set by the flat CAF modifier of 0.8.
4. Yes, CARB can update MDI eligibility criteria in a future rulemaking.
5. Per section 95891(g) of the Proposed Amendments, MDI allowances are provided to eligible facilities through a CAF modifier applied when calculating the facility's standard industrial allocation under section 95891(b) or (c). Allowances provided through industrial allocation, including MDI, may be used directly for compliance or traded with other entities on the secondary market. The requirements in section 95891(g) for the use of MDI allowance value and including oversight and potential the return of any unused MDI allowances apply regardless of whether the MDI allowances are used for direct compliance or to raise funds for eligible GHG reduction projects.
6. MDI allowances are subject to the same allowance trading and holding rules that apply to all other allowances issued in the Cap-and-Invest Program.
7. The most cost-effective MDI-eligible project category listed under section 95891(g)(2)(A)-(H) of the Proposed Amendments will vary by facility and sector depending on specific production processes and operational needs. Per section 95891(g)(2)(H), equipment that captures or stores CO2 emissions is only an eligible use of MDI allowance value once a Board-approved quantification methodology aligned with SB 905 is incorporated into the Regulation.
8. The Proposed Amendments do not reserve a specified portion of MDI allowances in the Build Up California Reserve Account for carbon dioxide removal or any other eligible decarbonization technologies listed in sections 95891(g)(2)(A)-(H). See further discussion in Agency Response to comment O-8.14c.
9. Parameters for quantifying carbon removals recognized under the Cap-and-Invest Program will be considered as part of establishing a Board-approved quantification methodology aligned with SB 905 in a future rulemaking. Once this quantification methodology is incorporated into the Cap-and-Invest Regulation in

a future rulemaking, recognized carbon removal by covered facilities will be reflected in annual emissions reporting and verification under MRR.

Note that Board Resolution 26-7 directs the Executive Officer to report to the Board, and to evaluate and propose, as appropriate, future amendments to the MDI program prior to receipt of MDI applications and issuance of any MDI allowances. The MDI allocation issues discussed in the questions above may be considered as part of that public process.

O-8.55 Comment:

I am writing to ask you to reject the MDI amendment.

MDI presents two main concerns for me.

The reliance on unproven technologies - carbon capture and storage - is short-sighted. I agree that this is a cool theoretical possibility, it would be nice to encourage it. However, there are way better proven strategies that are getting starved by this proposal. Transit and affordable housing will move the needle in reducing emissions by reducing transportation cost and transportation carbon output. Conversion from car usage to transit usage is paramount and will meaningfully improve the lives of Californians. We CANNOT cut Tier 3 of services provided by GGRF. Doing so would be cutting programs that directly impact the people we need to serve.

You have heard from multiple transit agencies, all in need of help and all concerned for their lives as costs are rising. You have the opportunity to amend your proposals to include Transit as a first-class supported initiative. You have the opportunity to amend your proposals to include Affordable Housing as a first-class supported initiative.

Secondly: Free allowances are going to tank the market. Yikes. Do you really think that Oil and Gas Extraction in California should still be occurring in 2045? Do not allow these interests to overwhelm the legislation. Low Carbon Transit Operations Program (LCTOP) needs to continue.

The 100 biggest oil and gas companies have collectively raked in an extra $30 million per hour since the war on Iran began. You are California's air quality regulators - we can't eliminate critical funding for clean air, clean water, public transit, and affordable housing just to give even more money to Big Oil! (BH-Perera-84.1)

Agency Response:

No changes were made in response to this comment.

Regarding CCUS, please refer to Master Response 3 in the Response to Comments on the Environmental Impact Analysis.

Regarding GGRF revenues and GGRF projects, please refer to Agency Response to Comment W-1.3b.

Regarding oil and gas industry, please refer to Agency Response to Comment B-4.1a.

O-8.56 Comment:

Good afternoon. My name is Maggie Field. I'm with Ceres, a national nonprofit that works with major investors and companies to advance policies for a clean economy. Last year, we partnered with over 40 businesses and organizations urging swift action to reauthorize a strengthened Cap-and-Invest Program. Ceres supports adopting the Cap-and-Invest Program today. And delay would undermine market confidence disrupt business planning and signal instability at exactly the wrong moment. That said, we have serious concerns about the Manufacturing Decarbonization Incentive, or MDI, as written in the final regulations. Creating millions of allowances outside and above the cap risk market health, depressing prices and eroding GGRF revenues. Ceres submitted comments recommending CARB finalize on time, but resolve the challenges raised by the MDI with resolution language if the MDI was to be retained. We appreciate that CARB did publish resolution language to address the concerns and that this text directly addressed requests we made in our public comment letter, including language to provide transparency on MDI implementation and guardrails around reporting. We also appreciate the inclusion to evaluate the MDI's impact on industrial emissions in the next Scoping Plan update, which we encourage CARB to treat as genuine decision point. While these were addressed, the climate target accountability piece is present but somewhat diffuse in the resolution language. We urge that the monitoring and reporting be explicitly tied to progress toward California statutory climate milestones, not just project level outcomes to give investors and businesses the confidence to plan long term. While the resolution language provides meaningful first steps to accountability and transparency around MDI management implementation, we want to be clear, this is not a perfect solution. The MDI as structured still carries real risk to cap integrity. And good intentions on paper must be matched by rigorous implementation. (BH-CE-180.1)

Agency Response:

No changes were made in response to this comment. Please refer to W-1.3b for Agency Response to comments regarding general impacts on GGRF. For information regarding MDI allocation issuance refer to Agency Response O-8.35. Regarding the impact of MDI on emissions integrity, affordability, and Program revenues, see Agency Response to comment O-8.38b. Staff appreciates the support for timely adoption of the Proposed Amendments.

O-8.57 Comment:

Soil Carbon Sequestration Should Be Recognized as an Eligible Activity Including Under the Manufacturing Decarbonization Incentive Allocation Framework. The MDI program represents an important mechanism for incentivizing investments that reduce GHG emissions from covered industrial facilities. We note with interest the addition of section 95891(g)(2)(H), which creates a new potentially eligible project category for capital costs, electricity costs, and associated design, engineering, and permitting costs for equipment that captures CO_2 emissions, contingent on Board approval of a quantification methodology. While this provision is oriented toward mechanical carbon capture, utilization, and storage (CCUS) technologies, we urge CARB to consider that nature-based carbon removal through soil carbon sequestration on California rangelands represents an equally valid and scientifically demonstrated pathway for removing CO_2 from the atmosphere. Recommendation: We request that the Board explicitly consider whether soil carbon sequestration on managed rangelands—verified through direct soil sampling and rigorous MRV protocols—could qualify as an eligible pathway. CARB should ensure that future quantification methodologies are technology-neutral and do not inadvertently exclude proven nature-based approaches. (15d-GC-3.1)

Agency Response:

No changes were made in response to this comment. Soil carbon sequestration on managed rangelands does not fit within the MDI's goal of accelerating deeper decarbonization in manufacturing and industrial facilities. Staff encourage the commenter to engage in the future evaluation of the offsets program, which is where nature-based carbon removal or sequestration interact with the Program.

O-9 New Benchmarks – Refinery

O-9.1 Comment:

Compounding this issue are the proposed changes to the free allowance allocation methodology, including the transition away from the complexity-weighted barrel (CWB) benchmark. Under the amended approach, refiners would be required to procure a greater share of their compliance obligations through the allowance market than originally anticipated, rather than receiving allowances calibrated to refinery complexity and operational characteristics.

The CWB framework has historically recognized differences in refinery configurations and feedstock processing requirements, providing a more accurate reflection of emissions intensity and compliance needs across facilities. Moving away from this methodology reduces alignment between allocated allowances and actual operational

emissions, particularly for more complex refineries, and increases the volume of allowances that must be purchased in the market.

This increased exposure to the allowance market would occur precisely as overall allowance supply is being significantly constrained through the removal of planned allowances and a steeper long-term cap decline. As a result, refiners would be forced to compete for a shrinking pool of allowances in an increasingly tight market, heightening price pressure, increasing volatility, and elevating compliance risk. The timing of these changes leaves limited opportunity for refiners to adjust operations or deploy alternative compliance strategies, given the capital-intensive nature of refining and the long lead times associated with facility modifications. (45d-CFCA-7.2)

Agency Response:

Changes were made in response to this comment. Please see Agency Response to O-1.1a on changes to the CAF schedule, the retirement year for CWB, and MDI eligibility that will level the regulatory landscape between in-state and out-of-state facilities while supporting the deep decarbonization of industry laid out by the 2022 Scoping Plan Update.

No changes were otherwise made to the LHF framework and the retirement of the CWB benchmark. The LHF rewards allocation for the production of liquid hydrocarbon finished fuel volume. CWB is a process-based metric and is not calculated from production volumes of fuels. The proposed LHF allocation will enable common treatment of the production of conventional fossil fuels and the production of non-fossil hydrocarbon fuels when providing leakage protection for production of functionally equivalent fuels, independent of the processes used to produce those fuels. The LHF was designed to provide a similar amount of leakage protection to the refining sector, while accommodating other emerging fuel production methods.

O-9.2 Comment:

Biorefinery Recognition

CCEEB appreciates CARB recognizing a new class of facility in California—biorefineries. This update to the Program reflects the investment and innovation taking place due to the state's carbon policies. (45d-CCEEB-377.4)

Agency Response:

No changes were made in response to this comment. Staff appreciate the support for the Proposed Amendments.

O-9.3 Multiple Comments: Asphalt Benchmark

WOR met with California Air Resource Board (CARB) staff on March 4, 2026, to discuss how its refinery will be impacted by the proposed rule changes. Following that meeting, CARB recommended that WOR submit this letter as it is important for this information to be entered into the public rulemaking record. WOR requests that CARB reevaluate the allocation methodology for Petroleum Refineries so that the reduction in allocations that will occur in 2031 will be tempered to a more manageable amount.

When the proposed new definition of "Asphalt Production" is combined with the new efficiency benchmark from Table 9-1 of the proposed regulations, WOR will become significantly penalized beginning in reporting year 2031 because, unlike many other refineries, it will not receive any allocations for producing liquid hydrocarbon fuels. This is because, as stated previously, WOR is incapable of producing liquid hydrocarbon fuels. WOR requests that the proposed new definition of "asphalt production" be revised to include unfinished oils as follows:

"Asphalt Production" means, for the purposes of non-Complexity weighted barrel product data reporting, the processing required to produce asphalt, ~~and~~ road oils, and unfinished oils through distillation of petroleum or through re-distillation, cracking, or reforming of unfinished petroleum derivatives. The modification of asphalt produced from offsite petroleum refining, such as by blending or asphalt blowing, is not considered asphalt production.

WOR has projected future allocations assuming that the Asphalt Production definition is modified to include the unfinished oils that it produces (i.e., naphtha, LDO, LVGO). All WORs products would receive 0.0185 allocations per barrel. The projected reductions in allocations over time would be more manageable for a facility of WOR's size and prevent the economic shock that would be caused by the >60% reduction anticipated to occur in 2031. (45d-LTC-358.1)

Comment:

WIRA requests that CARB reevaluate the allocation methodology that will be applied to Asphalt Refineries so that the reduction in allocations that will occur in 2031 will be tempered to a more manageable amount.

While Asphalt Refineries are technically classified as petroleum refineries (NAICS 324110) because they distill crude oil, their operations are unique and comprise only a very small fraction of total refining capacity in the State of California. Additionally, some Asphalt Refineries produce fuel. The on-spec paving and roofing-grade asphalt products are not produced by cracking, reforming, hydrotreating, coking, etc.; rather, they are produced by blending and/or blowing asphalts that are distilled from crude oil onsite, along with a combination of purchased asphalt and non-asphalt materials.

When the proposed new definition of “Asphalt Production” is combined with the new efficiency benchmark (Table 9-1 of the proposed regulations), Asphalt Refiners are significantly penalized. The proposed new definition of “asphalt production” reads as follows: “Asphalt Production” means, for the purposes of non-Complexity weighted barrel product data reporting, the processing required to produce asphalt and road oils through distillation of petroleum or through re-distillation, cracking, or reforming of unfinished petroleum derivatives. The modification of asphalt produced from offsite petroleum refining, such as by blending or asphalt blowing, is not considered asphalt production.

By excluding purchased asphalt and non-asphalt materials, and asphalt blowing operations, the new Benchmark Allowances will reduce allocations for one member Asphalt Refinery by 60 percent as soon as the vintage allocations expire in 2030. This abrupt step-change reduction in allocations will be a significant hardship for the facility. WIRA believes that the allocation methodology that will be applied to Asphalt Refineries needs to be changed so that the reduction in allocations that will occur in 2031 will be more manageable. This could be accomplished by revising the Asphalt Production definition to include unfinished oils, including, but not limited to, light vacuum gas oil (LVGO), light distillate oil (LDO), and naphtha. (45d-WIRA-372.1)

Agency Response:

Changes have been made in response to this comment. Please see Agency Response to O-1.1a concerning changes to the CAF schedule and resulting stationary source emissions compliance costs.

No changes were made to the asphalt benchmark. The asphalt benchmark was designed in recognition that asphalt production, while related to fuel production at refineries, does not fit under the definition of a finished fuel despite being a finished product. The commentors request that unfinished oils, purchased asphalt, and asphalt blowing operations be included under asphalt production. The inclusion of residual and unfinished oils in the asphalt benchmark is inappropriate precisely because it is not a finished product, requiring additional refining to produce a finished fuel or other product. Allocating allowances for the purchase of finished products (i.e. asphalt) is inappropriate and misaligned with the purpose of free industrial allocation, which is meant to incentivize the manufacture of products in California. Lastly, asphalt blowing operation emissions are already exempt from a compliance obligation, under section 95852.2(b)(5), thus it would be inappropriate to provide free allowance allocation for leakage protection for that process.

In general, benchmarks under the Program are designed using the sector-average emissions intensity of covered facilities that produce a specific product.

> Broadening the asphalt production definition would require re-analysis to incorporate the emissions associated with the relevant additional production, which will require additional data reporting by the sector. Thus, there is no reason to believe that broadening the asphalt production definition will have the expected outcome of additional free allowance allocation. However, in recognition of the complexities of production processes in the asphalt sector, staff plans to conduct additional analysis of the asphalt benchmark, including review of any additional available data in a future rulemaking. Covered facilities that produce asphalt will have the option to continue receive allowance allocation under the complexity weighted barrel benchmark through vintage 2032 allocation.

O-9.4a Comment:

Allow refiners to choose between use of the complexity weighted barrel (CWB) or liquid hydrocarbon fuel (LHF) methodologies. …

Refineries must be able to choose between using an LHF or CWB benchmark.

Under the existing Cap-and-Invest program, petroleum refineries receive allocations for the activity of “petroleum refining” using CWB as the output metric. CARB is now proposing to replace this CWB metric with a new “liquid hydrocarbon fuel” framework for reporting years beyond 2030, including developing an LHF benchmark that CARB would utilize to directly allocate allowances to facilities that process 100% petroleum feedstocks, co-process renewable and petroleum feedstocks, or process 100% renewable feedstocks. While LHF offers a straightforward production-based allocation, the existing CWB metric is a robust and valuable measure of refinery operations that reflects differences in complexity, processing efficiency, and emissions intensity.

There are wide liquid hydrocarbon fuels production differences that include a variety of feedstocks (e.g., light/heavy crudes, vegetable oils, waste oils and fats), different processing configurations (i.e., standalone, co-processing), different site configurations, different fuel types, and varying on-site and off-site energy requirements. Petroleum refining, standalone renewable fuel production, and co-processing also include different process steps and have distinct energy requirements and GHG emissions intensities. Therefore, WSPA recommends that petroleum refineries be allowed to choose between an LHF or CWB benchmark beyond 2031. This flexibility would preserve the ability of more complex refineries to receive allocations commensurate with their operational characteristics while maintaining transparency and consistency with historical reporting. A choice would encourage efficiency improvements and provide regulatory certainty for long-term planning and capital investment decisions.

It would benefit any entity, regardless of their preference for a CWB or LHF benchmark. (45d-WSPA-381.8)

Agency Response:

No changes were made in response to this comment. As the transportation fuel production sector continues to evolve, long-term continuation of allocation under the CWB framework, which is not applicable to the production of non-fossil hydrocarbon fuels, would be inconsistent with the one-product one-benchmark principle. The commentor states that the wide variety of fuels production, feedstocks, processing configurations, site configurations, etc. are reasons as to why the CWB benchmark should be preserved. However, the proposed LHF allocation framework enables common treatment of the production of conventional fossil fuels and the production of non-fossil hydrocarbon fuels when providing leakage protection for production of functionally equivalent fuels and provides six years for all LHF to transition to the new benchmark. The proposed LHF benchmark preserves the total amount of allowance allocation to the entire refining sector, is technologically agnostic, and simplifies the reporting verification process.

In Table 9-1 of section 95891, the final vintage year of allowance allocation under the complexity weighted barrel (CWB) benchmark for “Petroleum Refining” under NAICS code 32411 was changed from vintage 2030 to vintage 2032. This change matches the intent for the timing of allowance allocation for activities under NAICS code 324110. Allocation through production year 2030 may be based upon the CWB benchmark (e.g., the allocation for production during 2030 can be made final by vintage 2032 true-up allocation that is based on CWB production during 2030). This change aligns with changes to product data reporting for refineries in MRR, where beginning with data year 2031, liquid hydrocarbon fuel production data must be reported in lieu of CWB production data.

O-9.4b Multiple Comments: Entities should choose LHF or CWB

In the prior 45-Day Amendments, CARB proposed replacing the CWB metric with a new “liquid hydrocarbon fuel” framework for reporting years beyond 2030. While the LHF approach offers a more straightforward, production-based allocation methodology, WSPA previously noted that the existing CWB metric remains a robust and valuable measure of refinery operations, as it better reflects differences in complexity, processing efficiency, and emissions intensity.

CARB’s Proposed 15-Day Amendments would revise this language to extend the applicability of the product-based efficiency and refinery benchmark and to allow entities to “irreversibly switch” from the CWB benchmark to LHF prior to the vintage 2033

allocation. While WSPA appreciates these changes, CARB's revised proposal still does not provide sufficient flexibility for facilities to choose between the CWB and LHF methodologies or to continue using the CWB metric beyond 2033. WSPA reiterates that requiring all facilities to transition to the LHF benchmark limits the ability of more complex refineries to receive allocations that appropriately reflect their operational characteristics while maintaining consistency with historical reporting.

Providing entities with a clear option to choose between CWB and LHF benchmarks would better support operational flexibility, incentivize efficiency improvements, and enhance regulatory certainty for long-term planning and capital investment decisions, regardless of a facility's preferred methodology. (15d-WSPA-164.9)

Comment:

RFG appreciates CARB's inclusion of flexibility in benchmark selection through 2033 in the 15-Day Amendments, which represents a constructive acknowledgment of operational realities. However, RFG respectfully requests that CARB extend this flexibility further to permit covered entities to elect between the Complexity Weighted Barrel ("CWB") and Liquid Hydrocarbon Fuel ("LHF") benchmarks on an ongoing basis, rather than requiring an irreversible switch to LHF prior to 2033. Allowing refineries to select the methodology that best reflects their operational complexity and emissions profile would support long-term capital investment decisions, while ensuring that allowance allocations remain appropriately calibrated to each facility's actual operational characteristics. (15d-RFG-189.6)

> **Agency Response:**
> No changes were made in response to these comments. Please refer to Agency Response to comment O-9.4a. Staff appreciate support for the Proposed Amendments regarding the extension of the CWB benchmark applicability and clarifications to irreversibly switching to LHF prior to Vintage 2033 allocation.

O-9.5a Multiple Comments: LHF Benchmark Support

Kern broadly supports Staff's proposal to establish new product-based benchmarks for the refining sector industrial allocation, specifically the Liquid Hydrocarbon Fuels (LHF) methodology as a replacement for the existing Complexity Weighted Barrel benchmark. The existing program's industrial allocations create a compliance obligation that is not sustainable and set an arbitrary pace to meet emission reduction targets that are not technologically feasible. The LHF approach, based on the total production volume, better aligns allocations on the basis of emissions per unit of output and offers some mitigation for structural disadvantages for lower complexity refinery configurations.

... Lastly, Kern supports the optionality in Staff's proposal for facilities to transition to the LHF method earlier than the sector-wide mandatory implementation in 2031. This ability

to opt in early or advantage the longer runway to 2031 is a key recognition of the certainty that businesses require when planning compliance strategies and adjusting to regulatory changes. (45d-KE-392.1)

Comment:

Phillips 66 is supportive of proposed amendments to allocate allowances to biorefineries including SAF production facilities using the Liquid Hydrocarbon Fuel (LHF) framework.

… CARB has proposed a new benchmark unit of Liquid Hydrocarbon Fuel (LHF) for allowance allocation to petroleum and biorefineries. CARB has also proposed a new, single benchmark of 0.0319 allowances/barrel of LHF produced for all refineries, including RREC, to use in calculation of allowance allocation. Phillips 66 supports the definition of LHF and use of LHF benchmark unit for biorefineries including SAF production facilities. We also appreciate flexibility provided by CARB to employ this benchmark beginning with the 2026 Reporting Year. (45d-P66C-416.1)

Agency Response:

No changes were made in response to these comments. CARB appreciates the support for the Proposed Amendments. The 15-day Amendments clarify the process for a facility to irreversibly switch from allocation under the CWB benchmark to allocation under the LHF benchmark. The deadline to switch is December 1 of the calendar year immediately preceding the first year that the entity elects to be covered by the new benchmark. The December 1 deadline supports administration of the switch in benchmarks and clarifies the data year that the facility will start reporting and verifying LHF production data instead of CWB production data.

O-9.5b Comment:

Allocation to Biorefineries: Neste appreciates that biorefineries will be eligible for an industry allocation. (15d-N-77.5)

Agency Response:

No changes were made in response to these comments. Staff appreciate the support for the Proposed Amendments.

O-9.6a Comment:

Kern and other small refiners face several intrinsic and market-based challenges that make their operations uniquely disadvantaged relative to other California refiners. Kern's refinery is "low complexity," meaning it cannot convert crude oil as effectively as more complex refineries that can maximize conversion to gasoline and diesel. Kern urges Staff to expand the proposed definition of "Liquid Hydrocarbon Fuel" or "LHF" in Section 95802 to specifically include residual oils (EIA code 511) in recognition of this

key difference. The explicit exclusion of residual oils from Staff's proposed refinery products list comprising the LHF is unnecessarily restrictive and punitive to low complexity refineries that do not employ energy intensive processing units to achieve full conversion of this product. These unique disadvantages have been repeatedly revealed every time CARB has approached benchmarking over the life of the Cap and Invest program. This rulemaking is the opportunity to fully align benchmarking methodologies and eliminate this defect that results in lower allowance allocations for small refiners.

Kern acknowledges Staff's positioning of LHF within the Initial Statement of Reasons as being technology-agnostic and a means to provide consistency across the sector, and asks that Staff view this request to include residual oils within those same intentions. While residual oils are sold into non-highway fuel markets, Staff's emphasis on "finished fuels" within the LHF definition places unnecessary limitations on the broad slate of products that contribute to a refinery's emissions profile.

Staff presented comparative analysis during the workshop phase of this rulemaking highlighting a wide gap between how marginal California's industrial allocations have been compared to other jurisdictions. The data strongly indicate California has not been adequately protecting industrial businesses from leakage. California's refining sector has always contained a diverse set of facilities with unique configurations, capabilities, and product slates. Modifying the LHF proposal to include residual oil can help close that gap -appropriately recognizing the value of this product within the refining sector, validating the unique attributes of California's smallest refineries, and appropriately providing emissions leakage protection where most needed. (45d-KE-392.2)

Agency Response:

No Changes were made in response to this comment. The LHF awards allocation for the production of liquid hydrocarbon finished fuel volume as opposed to the CWB which is a process-based metric and is not calculated from production volumes of fuels. The proposed LHF allocation will enable common treatment of the production of conventional fossil fuels and the production of non-fossil hydrocarbon fuels when providing leakage protection for production of functionally equivalent fuels, independent of the processes used to produce those fuels. The inclusion of residual oils in the LHF framework is inappropriate precisely because it is not a finished fuel, requiring additional refining to either produce a finished fuel, used as part of the asphalt production chain, or otherwise utilized in other processes to produce a finished product, with the exception of maritime uses that are exempt from emissions reporting under MRR section 95121(a)(2).

Staff recognizes there are significant complexities in refining sector production and will continue to monitor the sector's allowance allocation to and evaluate whether the benchmark performs as designed and appropriately incentivizes emissions-efficient production within California. Please refer to the Agency Response to comment O-1.1a, regarding changes made to the CAF schedule, MDI facility eligibility, and stationary source compliance costs.

O-9.6b Comment:

In its March 2026 comment letter, Kern provided broad support for Staff's proposal to establish new product-based benchmarks for the refining sector industrial allocation, specifically the Liquid Hydrocarbon Fuels (LHF) methodology. Based on refinery product production volumes, the LHF approach better aligns allocations on the basis of emissions per unit of output. Kern is once again encouraging Staff to include residual oils in the list of refinery products included in the definition of LHF to account for the structural disadvantages of lower complexity refineries.

Kern's refinery is "low complexity," meaning it cannot convert crude oil as effectively as more complex refineries that can maximize conversion to gasoline and diesel. This structural difference necessarily results in a different slate of refinery products for Kern as compared to the complex refineries in the state. Every refinery in the state has a nuanced configuration and associated outputs. The explicit exclusion of residual oils from Staff's proposed refinery products list comprising the LHF remains unnecessarily restrictive and punitive to low complexity refineries that do not employ energy intensive processing units to achieve full conversion of this product. These unique disadvantages have been repeatedly revealed every time CARB has approached benchmarking over the life of the Cap and Invest program. This rulemaking is the opportunity to fully align benchmarking methodologies and eliminate this defect that results in lower allowance allocations for small refiners. Kern urges Staff to expand the proposed definition of "Liquid Hydrocarbon Fuel" or "LHF" in Section 95802 to specifically include residual oils (EIA code 511) in recognition of this key difference.

California's refining sector has always contained a diverse set of facilities with unique configurations, capabilities, and product slates. Modifying the LHF proposal to include residual oil can help close that gap—appropriately recognizing the value of this product within the refining sector, validating the unique attributes of California's smallest refineries, and appropriately providing emissions leakage protection where most needed. (15d-KE-190.9)

Agency Response:

No Changes were made in response to this comment. Please refer to the Agency Response to comment O-9.6a.

O-9.7 Comment:

Phillips 66 is recommending CARB conduct a data-driven review of the benchmark for "On-purpose Hydrogen Gas Production" for SAF production facilities and create a separate benchmark for these hydrogen plants aligned with actual operational emission intensity.

... Another benchmark relevant to SAF production facilities is for On-purpose Hydrogen Gas Production. In Table 9-1 of the C&I regulation, this benchmark is categorized under NAICS code of 325120 (Industrial Gas Manufacturing). The benchmark is set at 8.94 allowances/metric ton of on-purpose hydrogen gas produced under the current regulation and has not been updated as part of proposed amendments. In earlier C&I rulemakings, this benchmark was set using "Carbon Dioxide Weighted Tonne" framework for hydrogen production and the benchmark has been updated in other past rulemakings to ensure equity between merchant hydrogen plants and refinery-owned hydrogen production. Phillips 66 believes that the current proposal is missing an opportunity to update this benchmark for SAF production facilities as it appears to not consider high hydrogen requirement per barrel of SAF/RD production vs. gasoline or ultra-low sulfur diesel (ULSD) production. We are providing some technical points below for CARB to consider as part of this rulemaking and request a revised, higher benchmark that will differentiate the emission-intensive on-purpose hydrogen gas production for SAF facilities. Renewable feedstocks typically contain 10 weight percent oxygen that needs to be removed via hydroprocessing.

In contrast, petroleum gas oils used to produce ULSD lack oxygen and contain a maximum of 2-3 weight percent sulfur. Due to the higher degree of hydrotreating required for renewable feedstocks, the amount of hydrogen required for renewable processing is higher on a per barrel basis than petroleum processing. Hydrogen required for gasoline and ULSD production and provided by steam methane reformer (SMR) units ranges from ~250 to 1000 scf/bbl of product. In contrast, hydrogen required for SAF/RD production and provided by SMRs is ~2000-2500 scf/bbl product5 - almost 2-3 times that of petroleum processing.

As mentioned earlier, the current hydrogen benchmark was set during the 2010 C&I rulemaking using "Carbon dioxide weighted Tonne" framework based on then-existing hydrogen production data as reported in the MRR regulation. However, a typical petroleum refinery produces hydrogen in SMR using natural gas as feed and fuel for heat. In contrast, SAF production facilities can use refinery fuel gas as feed and/or fuel for SMRs in addition to natural gas to maximize plant efficiency. In this case, emission intensity for hydrogen production (CO_2 emissions per ton of produced hydrogen) increases significantly, in some cases by as much as 10%, as the fuel gas in SAF production facilities contains heavier molecules than natural gas.

Based on this information, it appears the benchmark of 8.94 allowances/metric ton of on-purpose hydrogen produced does not consider increased emission intensity for SAF production facilities as the benchmark was set long before the emergence of biorefining operations in California. As per Appendix E, Section I (B) of the proposed regulatory amendments, CARB's intent is to provide equitable treatment for fossil and non-fossil transportation fuel producers, which is appropriate. However, assigning only one benchmark for hydrogen production for both SAF production facilities and petroleum refineries, based on historic petroleum-only refining operations, is overlooking important distinctions unique to hydrogen production and use by SAF production facilities. It is also ignoring benchmark changes needed to accurately reflect emission intensity of related on-purpose hydrogen production. This omission will certainly disadvantage facilities like RREC vs. traditional petroleum refineries and result in a lower allocation for hydrogen production as it relates to hydrogen consumption per LHF barrel. To avoid this inequity, Phillips 66 is recommending CARB conduct a data-driven review of the benchmark for on-purpose hydrogen gas production for SAF production facilities and create a separate benchmark for these facilities.

CARB should be able to achieve this by reviewing existing MRR and EPA Part 98 data reported by biorefineries after 2021 and by creating a new benchmark for "On-purpose Hydrogen Gas Production for biorefineries" under the NAICS code 325120. (45d-P66C-416.2)

Agency Response:

No Changes were made in response to this comment. The On-purpose Hydrogen Gas Production benchmark was not changed in the January proposal and thus is out-of-scope for this Rulemaking. Additionally, the scenario described by the commentor is already adequately addressed in the current benchmark. The On-purpose Hydrogen Gas Production benchmark was calculated during the 2013 Cap-and-Trade rulemaking using 2008 and 2010 merchant hydrogen and refinery hydrogen data, and the benchmark was calculated as 90% of sector-wide emissions per metric ton of hydrogen. Product-based benchmarks scale with the output of a facility, should production increase, allocation increases in a commensurate manner. Staff appreciate that SAF requires additional hydrogen during the production process when compared to fossil jet fuel, however, the additional hydrogen required already receives additional allocation under the hydrogen benchmark.

Furthermore, as noted in the ISOR, CARB follows a one-product one-benchmark principle, enabling the common treatment of the production of a product through various means of production. It would be inequitable and counter to this program design principle to assign different benchmarks based on end-use.

O-9.8 Comment:

Under these draft regulations, in-state refiner obligations will increase, making it more difficult for in-state refiners to compete with importers who are exempt from stationary cap-and-invest obligations. This uneven playing field will hasten the closure of California refineries, significantly decrease in-state capacity, and increase reliance on imported fuels.

Because of these vulnerabilities, I urge CARB to consider moving the stationary emission obligations of refineries into the mobile fuel obligations. A new stationary mobile emission factor can then be used as the basis for the 'Cap-at-the-Rack" calculation, which would socialize refinery stationary compliance costs and add importer's volumes to the calculation.

This approach would stabilize in-state refineries by making them more competitive relative to imports and prevent emissions leakage, while preserving the Greenhouse Gas Reduction Fund and protecting the jobs of thousands of Californians in the oil and gas industry. It is also essential that any change in cost allocation be coupled with operational commitments from refinery operators to ensure supply stabilization throughout the mid-transition.

This rulemaking is an opportunity to explore ways to minimize mid-transition risks through design of the cap-and-invest program itself. I encourage you to consider all options to level the playing field for in-state supply to the extent it is beneficial to Californians and maintains our commitment to the phase-out of fossil fuels. (45d-Petrie-Norris-432.2)

Agency Response:

Changes were made in response to this comment. Please refer to the Agency Response to Comment O-1.1a regarding stationary source costs, affordability, the decarbonization of the in-state fuel supply, and the proposed changes to the CAF to protect California industry including refineries from emissions leakage.

No changes were made regarding the commenters suggestion to shift stationary source emission obligations of refineries to Suppliers of RBOB and Distillate Fuel Oils. Section 95852(d) was not opened during this rulemaking, as such this request is out of scope of this rulemaking. Furthermore, socializing stationary compliance costs would allow the most emissions intensive refineries to avoid the compliance costs of the Program, while early actors decarbonizing refineries in good faith would be penalized. Such a shift would also disincentivize the deep decarbonization investments required to achieve the State's climate targets.

O-9.9 Comment:

We continue to support the retention of the current allocation benchmarks (Ba) for on-purpose hydrogen and liquid hydrogen (industrial gas manufacturing) in Table 9-1 of §95891… (15d-AP-83.4)

Agency Response:

No changes were made in response to this comment. Staff appreciates support for the Proposed Amendments.

O-10 New Benchmarks- Oil and Gas

O-10.1a Multiple Comments: Maintain two benchmarks for oil and gas extraction

Chevron supports maintaining separate benchmarks for thermal and non-thermal crude oil extraction These production methods are fundamentally different, with materially different energy requirements, operating characteristics, and emissions profiles. A single, unified benchmark would mask these differences and weaken the link between allowance allocation and actual emissions performance.

Maintaining separate benchmarks is critical to preserving allocation integrity and minimizing emissions and economic leakage. Further reducing allowance allocations to thermal producers would accelerate declines in in-state crude production and increase reliance on imported crude produced in jurisdiction without a comparable carbon price or greenhouse gas abatement technologies. CARB should maintain separate benchmarks to ensure C&I remains equitable, cost-effective, and aligned with its statutory objectives to prevent leakage (45d-CUSAI-296.4)

Comment:

I support maintaining separate benchmarks for thermal and non-thermal crude oil extraction. These production methods are fundamentally different, with materially different energy requirements, operating characteristics, and emissions profiles. A single, unified benchmark would mask these differences and weaken the link between allowance allocation and actual emissions performance.

Maintaining separate benchmarks is critical to preserving allocation integrity and minimizing emissions and economic leakage. Further reducing allowance allocations to thermal producers would accelerate declines in in-state crude production and increase reliance on imported crude produced in jurisdictions without a comparable carbon price or greenhouse gas abatement technologies.

Crude producers operate in a globally traded market and have limited ability to pass rising C&I compliance costs on to refiners without losing market share to imported crude that is not subject to comparable carbon costs. As C&I costs increase, refiners can more

readily substitute lower-cost imports rather than absorb higher-priced in-state crude. This dynamic heightens leakage risk and undermines the competitiveness and long-term viability of California crude production without delivering proportional emissions reductions. (45d-CH-348.6)

Comment:

Staff has proposed a major shift in industrial allocation methodology for the oil/gas sector, though reading through the ISOR, it comes across as an administrative, technical amendment and not the substantive change it actually is. This proposed change is significant and costly, and should NOT be accepted into the final adopted regulation.

This idea of switching the oil/gas sector to align with the generic rule of “one- product one benchmark” was first brought up this round of amendments in an informal workshop in 2023. CIPA has commented before to raise concerns with staff. Now that CARB has finally produced a proposal, and its costs can be calculated, CIPA is officially opposed to the change.

The ISOR rationale for proposing the new methodology is based on the premise that for current reporting, it is done in such a way that it ‘made it difficult’ due to the ‘complexity of the sector. This is a dramatic and costly policy change, and therefore shouldn’t be done for something that could be administratively worked through. CARB has not approached CIPA to work through these perceived reporting difficulties as a first step. Simplicity for staff is not a justifiable policy reason, especially when the change is so impactful.

The staff proposal, starting with vintage 2031, is to eliminate the separate, but certainly not equal, benchmarks for the two distinct extraction methods and replace them with a single benchmark. There is a reason since the start of the Program that there have been two benchmarks—the original program documents recognized this rationale: “Although staff prefers to apply a “one product, one benchmark” principle, an exception was made for oil extraction because non-thermal alternative techniques are not usually substitutable in the wells where thermal EOR is applied.

Crude production with steam is a completely different industrial process than without steam, and deserves a separate benchmark. The infrastructure required for steam injection for enhanced oil recovery dictates a unique benchmark. This fundamental fact recognized by CARB back in 2010 has not changed.

CARB staff calculated, and proposed, a new benchmark that “should provide a similar overall level of emissions leakage protection to the oil and gas extraction sector” as the two-benchmark system used today. There are several issues with simply asserting this as a fact—Appendix E in the ISOR package provides no additional justification or data.

The practical impact is more fundamental—the cost of the Program is felt by individual companies, and not by the 'sector'. Therefore, assuming a sector-wide average benchmark produces similar impacts as process distinct individual benchmarks is incorrect. CIPA has reviewed the impact on several members, and determined the net impact is negative, even with the increased allocation for non-thermal production.

Those CIPA members with steam EOR will see their allowance allocation drastically reduced overnight coincident with dramatic cap adjustment factor reductions. Taken together the Industrial Assistance Allocations for the sector will be reduced by 73% between now and 2034, while the program floor price will increase 73%. This creates an unprecedented price shock to in state producers on the per barrel price of the Program costs to in-state producers. (45d-CIPA-369.3)

Comment:

CARB's proposed amendments would replace the existing separate benchmarks for thermal and non-thermal crude oil extraction with a single consolidated benchmark of 0.0463 allowances per barrel of oil equivalent (BOE), effective Vintage Year 2031. Shadow Wolf respectfully opposes this consolidation and urges CARB to retain distinct benchmarks that reflect the materially different carbon intensities of thermal and non-thermal EOR operations.

Thermal EOR operations, by their very nature, require the combustion of fuel – typically associated gas – to generate the steam that is injected into the reservoir to mobilize heavy crude oil. This steam generation process is not a product of operational inefficiency; it is a physical requirement of the extraction method itself. The emissions associated with thermal steam generation are therefore structurally and inherently higher per BOE produced than those of non-thermal operations, which do not require this combustion process. A single blended benchmark fails to account for this fundamental difference in process emissions.

Shadow Wolf is among the last remaining large-scale thermal EOR operators in Southern California. The broader California crude oil extraction sector has shifted substantially toward non-thermal production methods. As a result, a sector-wide blended benchmark will be weighted heavily toward non-thermal carbon intensity levels, and applying that benchmark to a facility whose process emissions are inherently higher due to steam generation will systematically under allocate allowances to Shadow Wolf relative to our actual operational emissions profile.

Shadow Wolf's operational history demonstrates that the combustion-related emissions associated with thermal steam generation represent a significant and consistent component of our overall emissions profile – one that is directly tied to the physics of heavy crude oil extraction and cannot meaningfully be compared to the emissions

profile of non-thermal operations. This distinction is precisely what the separate thermal and non-thermal benchmarks in the current regulation were designed to reflect.

These figures reflect the operational reality of a thermal EOR facility. The steam generation process that drives this carbon intensity is not discretionary – it is what allows heavy crude oil to be economically recovered from the reservoir. Assigning Shadow Wolf the same per-BOE benchmark as a non-thermal operator that does not undertake this process places an unequal compliance burden on our facility and is inconsistent with the program's design principle of calibrating allocations to reflect actual production processes. (45d-SWE-395.1)

Comment:

Shadow Wolf respectfully requests that CARB retain separate benchmarks for thermal and non-thermal crude oil extraction operations in Vintage Year 2031 and beyond, or alternatively, that CARB provide a technical justification demonstrating that the proposed blended benchmark appropriately reflects the carbon intensity of remaining thermal EOR operations in California. If CARB proceeds with consolidation, we request that it conduct a formal analysis of the impact on thermal EOR operators prior to adoption. (45d-SWE-395.3)

Comment: Form Letter 1 (160 submissions)

I support maintaining separate benchmarks for thermal and non-thermal crude oil extraction. These production methods are fundamentally different, with materially different energy requirements, operating characteristics, and emissions profiles. A single, unified benchmark would mask these differences and weaken the link between allowance allocation and actual emissions performance. Maintaining separate benchmarks is critical to preserving allocation integrity and minimizing emissions and economic leakage. Further reducing allowance allocations to thermal producers would accelerate declines in in-state crude production and increase reliance on imported crude produced in jurisdictions without a comparable carbon price or greenhouse gas abatement technologies. Crude producers operate in a globally traded market and have limited ability to pass rising C&I compliance costs on to refiners without losing market share to imported crude that is not subject to comparable carbon costs. As C&I costs increase, refiners can more readily substitute lower-cost imports rather than absorb higher-priced in-state crude. This dynamic heightens leakage risk and undermines the competitiveness and long-term viability of California crude production without delivering proportional emissions reductions. (45d-FL1.5)

Agency Response:

No changes were made in response to these comments. Oil and gas production in California is not cleanly bimodal in practice or in emissions intensity. Although

California crude tends to be heavy, the American Petroleum Institute (API) gravity still ranges widely from about 10 to 40 degrees. Similarly, emissions intensities vary substantially across operators reporting exclusively non-thermal production and those reporting thermal production. Verified 2024 MRR data show significant overlap in emissions intensity distributions for entities identified as either type (CARB November 2025).

For thermal operations, emissions intensity is driven almost entirely by the amount of steam consumed. Steam use varies widely—for production reported as thermal, consumption ranges from less than 0.25 MMBtu per barrel to more than 5 MMBtu per barrel. This demonstrates that, under the two-benchmark system, the complexity of oil field geology and operations, combined with the absence of detailed reporting requirements distinguishing “thermal production,” has contributed to inconsistent and potentially overly broad reporting of thermal volumes.

As described in the 2010 ISOR (CARB 2010a), sector-wide product benchmarks are designed to reward lower-GHG production methods within a sector. The proposed crude oil extraction benchmark is calculated using the same high-quality, verified MRR data and data period used to develop the existing thermal and non-thermal benchmarks. The updated single benchmark removes the process-based distinction and treats all crude oil extraction consistently. Consistent with benchmark development for other sectors, the new benchmark is derived entirely from California data and represents the emissions intensity of California production.

Staff’s analysis indicates that the updated benchmark provides a similar overall level of emissions leakage protection to the oil and gas extraction sector as the current two-benchmark system. This is expected given that both approaches rely on the same underlying dataset.

Importantly, the single benchmark improves leakage protection for lower-emissions-intensity production in California. Much of this lower-intensity production is non-thermal, and under the current two-benchmark system does not receive leakage protection equivalent to higher-intensity thermal operations. A unified benchmark provides consistent leakage protection across all California oil and gas production.

CARB conducted a robust public process which many of the commenters participated in. Potential updates to the allocation approach for oil and gas extraction were discussed in both the July 2023 and May 2024 Cap-and-Invest public workshops. Staff presented recent California production trends, explained the background for considering a benchmark update, and requested stakeholder

feedback on alternative approaches. Appendix E also provides information on the calculation of the single barrel of oil equivalent (BOE) benchmark.

Regarding requests for additional data or analysis release: CARB does not publicly released facility-level or operator-level data used to calculate benchmarks, as doing so would compromise confidential business information.

Further, the long-term decline in California crude production began in the late 1980s, which is well before any Cap-and-Invest Program compliance costs or potential impact of the Program on emissions leakage. As California's oil fields have aged, the remaining crude has become heavier and more difficult to extract, requiring increasingly energy-intensive and high-cost production methods. As a result, the share of non-California crude supplied to California refineries has increased from roughly 40 percent in the 1980s to about 77 percent in 2025. This long-standing trend reflects structural geological and economic factors that have shaped in-state production for decades.

Staff notes that changes were made to in Table 9-1 of section 95891, to specify that the final vintage year of allowance allocation for "Thermal EOR Crude Oil Extraction" and "Non-Thermal Crude Oil Extraction" activities under NAICS code 211111 is vintage 2032. Additionally, the first vintage year of allowance allocation for "Crude Oil Extraction" under NAICS code 211111 was changed from vintage 2031 to vintage 2033. These changes match the intent for the timing of allowance allocation for activities under NAICS code 211111.

In the 15-day Amendments, MDI eligible expenditures was expanded to add a new potentially eligible project category for the use of MDI value to oil and gas sectors, for equipment that captures CO_2 emissions, which is verified to be sequestered or utilized through use of a Board-approved quantification methodology. See Agency Response to comment O-8.4a.

O-10.1b Comment: Maintain two benchmarks for oil and gas extraction

Chevron supports maintaining separate benchmarks for thermal and non-thermal crude oil extraction These production methods are fundamentally different, with materially different energy requirements, operating characteristics, and emissions profiles. A single, unified benchmark masks these differences and weakens the link between allowance allocation and actual emissions performance. Chevron also urges CARB to move crude and natural gas production to the Standard Activities CAF in Table 9-2 Cap Adjustment Factors for Allowance Allocation. While Chevron appreciates CARB's proposal to delay implementation of the unified benchmark for crude production until 2033, maintaining separate benchmarks long-term is critical to preserving allocation integrity and minimizing emissions and economic leakage. Further reducing allowance

allocations to thermal producers would accelerate declines in in-state crude production and increase reliance on imported crude produced in jurisdictions without a comparable carbon price. In 2025, California passed SB 237 as a bridge policy to help stabilize in-state crude production by allowing up to 2,000 new drilling permits and streamlining permitting in Kern County. The rapid decline in allowance allocations to crude producers and moving to a unified crude benchmark will destabilize these efforts and work counter to the legislature's mandate. Crude producers operate in a globally traded market and have limited ability to pass rising C&I compliance costs to refiners without losing market share to imported crude that is not subject to comparable carbon costs. As C&I costs increase, refiners can more readily substitute lower-cost imports rather than absorb higher-priced in-state crude. (15d-CUSAI-62.3)

Agency Response:

No changes were made in response to these comments. Please refer to Agency Response O-10.1a for comments regarding benchmark for oil and gas extraction sectors.

O-10.2 Comment:

CRC does not object to CARB's proposal to adopt a single crude benchmark in the draft regulation. Provided the benchmark continues to function in a manner consistent with statutory objectives to minimize emissions leakage and protect affordability, CRC supports this approach. (45d-CRC-379.7)

Agency response:

No changes were made in response to this comment. Staff appreciates the commenters' support for the Proposed Amendments.

O-11 New Benchmarks- New product Allocation

O-11.1 Comment:

Kern supports CARB's proposal to provide product-based allowance allocation retroactively to the start of manufacturing a newly covered product in consideration of the time necessary to add new products to the regulatory framework. This mechanism will further help minimize risk of emissions leakage during periods when a new product does not yet have an established benchmark and cannot receive product-based allocations until regulatory action is taken. The five-year span offered for an entity to seek retroactive allocation for a new product appropriately recognizes the extended time it can take to navigate the necessary rulemaking for official inclusion into the regulation. This approach ensures manufacturers are not unduly penalized when bringing new low-carbon or transitional products to market ahead of CARB's regulatory cycle and creates a framework that makes them whole on allocations at the earliest opportunity. (45d-KE-392.7)

Agency response:

No changes were made in response to this comment. Staff appreciates the commenters' support for the Proposed Amendments. The new one-time new product allocation provides a mechanism to address the leakage risk for a covered facility that produced a product during a period when the product was not eligible for product-based allocation.

O-12 Product-Based Industrial Allocation

O-12.1a Comment:

SVM appreciates that CARB generally attempts to create single benchmarks, but here as in other cases such as the natural gas sector, and processing of food and other products, brine production and open-pit mining are fundamentally different processes that merit distinction in the Cap-and-Invest regulation. SVM's operation requires considerably more thermal energy to extract borate from the brine and process it. (45d-SVM-386.1)

Agency response:

No changes were made in response to this comment. CARB uses the one-product one-benchmark principle, which assigns the same benchmark for functionally equivalent products regardless of technology, fuel mix and other manufacturing conditions to ensure that all GHG emissions-abatement options remain viable, including supporting changes to lower carbon technologies, fuels, and feedstocks. However, CARB recognizes that SVM may be undergoing fundamental facility-level changes that may warrant re-evaluation.

Board Resolution 26-7 directs the Executive Officer to evaluate and propose future amendments, as appropriate, regarding alternative allocation approaches in situations of force majeure to continue to minimize leakage. Staff will continue working with interested parties on this issue.

O-12.1b Comment:

Searles Valley Minerals (SVM) appreciates the opportunity to comment on the California Air Resources Board's (CARB) 15-day Amendments to the proposed amendments to California's Cap-and-Invest program and Discussion Item 26-3-3 on CARB's May 28-29, 2026, Board Meeting Agenda. As SVM expressed in our prior comments on the originally proposed 45-day Amendments to the Cap-and-Invest program, SVM is in an Emissions Intensive Trade Exposed (EITE) industry that faces 71.1 significant global competition for the production of critical minerals, such as borate products. SVM's cost exposure under the Cap-and-Invest program has exacerbated SVM's risks of losing business to global suppliers of boron and related products. To address the risk of ongoing emissions leakage among EITE industries like SVM's and to fulfill CARB's

statutory directives to minimize leakage, CARB should create a unique product-based benchmark for boron produced from brine. We also encourage CARB to provide direction to staff to prepare an energy-based benchmark while it continues to collect and evaluate data from brine-based borate operations. (BH-SVM-71.1)

Comment:

1. We respectfully urge CARB to consider the following actions for SVM: Reevaluate CO_2 intensity benchmarks for boron-related industries to ensure they are based on current, facility-level data and reflect best achievable performance metrics given existing technological constraints.
2. Incorporate sector-specific considerations that recognize the unique process emissions and energy requirements of boron production.
3. Engage directly with industry stakeholders to better understand operational realities and identify pathways for emissions reduction that are both technically and economically feasible.
4. Provide transitional flexibility or credit mechanisms that incentivize innovation while maintaining the competitiveness of in-state production. (BH-Bogh et al-6.1)

Agency response:

No changes were made in response to this comment. Please refer to the Agency Response to comment O-12.1a. For a mechanism to incentivize innovation, please refer to the Agency Response to comments O-8 on the manufacturer decarbonization incentive allocation.

O-12.2 Comment:

The combined value of free Cap and Invest allowances given to oil refiners and drillers and LCFS credits awarded to oil companies and other biofuel suppliers totaled roughly $27.8 billion. The flaws in these programs incentivized continued reliance on combustion fuels, delaying the necessary transition to zero-emission vehicles and public transit. Climate policies that subsidize and fund combustion fuels are not smart climate policies. Over the same time period, $27.8 billion could have instead funded the installation of 2.8 million level-two EV chargers to serve roughly 11 million Californians, free public transit statewide for 12 years with $11 billion left for service improvements and transit electrification, or complete job transition support for California's oil workers, with some $15 billion left over. I urge you to take the following steps to reform these carbon trading programs: - Stop issuing free Cap and Invest allowances to oil refiners and drillers; - Rapidly phase out issuing LCFS credits to producers and suppliers of combustion fuels that compete with the electrification of transportation. It's time to reorient California's climate policy to prioritize the state's decarbonization goals. (45d-SCASCC-325.1)

Agency response:

No changes were made in response to this comment. The industrial sector is associated with high levels of energy use, and some industries have significant process emissions. These GHG-intensive industries are generally considered hard-to-decarbonize due to the availability and cost of alternative production technologies. When California's industrial sectors face Program costs for emissions that are not faced by out-of-state competitors, they may be at risk for emissions leakage. AB 32, AB 398 and AB 1207 all require CARB to minimize emissions leakage associated with the Program.

In recognition of the emissions leakage risk faced by California manufacturing sectors, including refineries, and the need to maintain efficient production in the State while achieving California's climate targets, the Program relies on allocating free allowances to covered industrial entities.

The Proposed Amendments put forward more stringent allowance budgets to reflect updated GHG emissions inventory information and to accelerate reductions consistent with the State's climate targets. These Proposed Amendments strengthen the Program's long-term price signal and increase incentives for covered entities to invest in GHG-reducing technologies, consistent with the accelerated decarbonization trajectory described in the 2022 Scoping Plan Update.

The comment regarding Low Carbon Fuel Standard is outside the scope of this rulemaking.

O-12.3 Comment:

Nucor appreciates CARB's decision to maintain the existing free allowance allocation framework for the steel sector. As described in the Initial Statement of Reasons' discussion of industrial leakage prevention and product-based allocation, the proposed amendments do not alter the benchmark-based allocation methodology or industry assistance factors applicable to steel. This approach appropriately recognizes steel as an emissions-intensive, trade-exposed industry with a distinct emissions and cost trajectory. Preserving this structure is critical to mitigating emissions leakage, particularly given CARB's acknowledgement that industrial competitiveness and leakage risk remain relevant considerations as the cap tightens. CSI already faces higher electricity and compliance costs than out-of-state competitors, and any reduction in effective assistance would materially increase the risk of production and emissions shifting out of California. (45d-Nu-322.1)

Agency response:

No change was made in response to these comments. Staff appreciates the commenter's support of the Proposed Amendments.

O-12.4 Comment:

We note that CARB has set post-2031 CAFs and revised allocation benchmarks for several industries in the proposed regulation to align with the decreasing allowance budgets. We support this direction while recognizing there are certain sectors that may merit a more gradual decline based on valid competitiveness concerns and the potential for carbon leakage. (45d-IETA-341.4)

Agency response:

Changes were made in response to the comment regarding competitiveness and emissions leakage concerns and in recognition of the short-term economic uncertainty caused by federal disruption, loss of federal incentives, global events and volatile market conditions. Post-2030 allowance allocation will be considered as part of a future rulemaking. This provides time to continue to work through stakeholder concerns until economic circumstances stabilize.

Staff appreciates the commenter's support on the overall direction of the Proposed Amendments. Please also refer to Master Response 1 in the Response to Comments on the Environmental Impact Analysis regarding emissions leakage concerns.

O-12.5 Comment:

We also support the retention of the current allocation benchmarks (Ba) for on-purpose hydrogen and liquid hydrogen (industrial gas manufacturing) in Table 9-1 of §95891. These benchmarks are set at a level that recognizes best-in-class performance for prevalent technology and sufficiently incentivizes initiatives to reduce direct emissions. (45d-AP-351.3)

Agency response:

No change was made in response to these comments. Staff appreciates the commenter's support.

O-12.6 Comment:

Under the mandatory Reporting Regulations modifications, global warming protentional ("GWP") is identified as information manufacturers are encouraged to provide in Environmental Product Declarations ("EPDs") for mineral wool products to support state building decarbonization goals.

The specific product-based benchmark for mineral wool manufacturing under the cap-and-invest program is set at 0.298 metric tons of CO2 per short ton of product. The proposed GWP is too low and is not attainable. (15d-NAIMA-90.3)

Agency response:

No change was made in response to this comment. The portion of this comment that refers to the Reporting Regulation of the Embodied Carbon program is out of scope for this rulemaking. The portion of the comment that references the product benchmark and GWPs is unclear and out of scope of this rulemaking and therefore no changes were made. The Proposed Amendments do not make any changes to the Regulation's definition of GWP values, which are established in MRR nor does the current Regulation or Proposed Amendments include any reference to EPDs.

O-13 Risk Assessment

O-13.1a Multiple comments: Reclassify leakage risk for refining sectors and food sectors from "medium" to "high"

Strengthen program design to minimize economic leakage while preserving allowance supply, market stability, and affordability for covered entities, consistent with the statutory objectives of C&I. This includes classifying the relevant petroleum industry sectors as high-risk for leakage. (45d-CUSAI-296.16)

Comment:

We encourage CARB to reclassify petroleum refining and associated industrial gas manufacturing to high leakage risk, instead of medium as currently proposed, given that refineries are already leaving California. (45d-AP-351.14)

Comment:

Additionally, Kern solicits CARB to revisit the refining sector's underlying leakage risk classification as "medium" within Table 8-1 in favor of a "high-risk" classification. The medium-risk designation does not reflect market realities, the accelerated pace of refinery closures in California, or the increased competitive pressures the sector faces from imported fuels. Maintaining effective protections against emissions leakage is critical as allowance supply declines. Given these industry trends, Kern encourages CARB to update the refining sector classification to a high-leakage risk sector in alignment with the 100% Assistance Factor, eliminating any room for ambiguity or mixed signals about the state of the refining industry. (45d-KE-392.4)

Comment:

At present, leakage risk classification is “Medium” for SAF production facilities (NAICS code 325199). Phillips 66 is urging CARB to reclassify biorefineries, and especially SAF production facilities, in the “High” risk classification category because biofuels are part of an international market with California importing substantial volumes each year. RREC has always been an “Energy-Intensive” facility, but now it is more “Trade-Exposed” than when it was a traditional crude oil refinery. To protect a nascent SAF industry and allow it to expand, we are recommending CARB classify SAF production facilities under “High” leakage risk category. (45d-PC-416.8)

Comment:

Ag Council disagrees with CARB’s designation of various types of food and beverage processing as “medium,” risk factor and Ag Council maintains the industry belongs in a “high,” leakage risk category. California’s food processing sector operates on thin margins while facing volatile input prices. Recent inflationary pressures have increased costs of various inputs including (but not limited to) packaging, transportation, energy and raw products. California also pays some of the highest wages in the country, to the benefit of the workforce, but further competing with any funds that might be utilized to make climate-friendly capital investments. Ag Council will work with CARB to provide additional data in the coming months to assist with moving this determination ahead of the May hearing. In the meantime, any industry that sells products into retail segments that tout “always low prices” can easily be replaced by out of state or out of country, low-cost competitors. (45d-ACC-433.5)

Comment:

Industrial allowance allocation has been an essential part of the C&I program since its inception. Free industrial allowance allocations provide a strong incentive for regulated entities to sustain in-state production while reducing financial burdens associated with compliance. Unfortunately, CARB’s current proposal significantly reduces industrial allowance allocations, which removes the incentive for refiners, crude producers, and other manufacturers to continue operating in the state...

The proposed regulation classifies crude petroleum and natural gas extraction (NAICS Code 211111) as high-risk for leakage, but petroleum refining (NAICS Code 324110) and liquid hydrocarbon fuel production (NAICS Code 325199) as medium-risk. As part of improving industrial assistance and leakage minimization, CARB must classify petroleum refining and liquid hydrocarbon fuel production as high-risk. The fact that California has lost approximately 17%- 20% of its in-state refining capacity in just the past couple of years necessitates a different approach on leakage. (45d-CUSAI-296.13)

Comment:

Explicitly recognize petroleum refineries, crude extraction operations, and biorefineries as high-leakage-risk sectors and include them in the proposed manufacturing decarbonization incentives. … . CARB should reevaluate leakage risks for refineries and adopt targeted measures to minimize these risks.

Achieving emissions reductions for petroleum and biofuel refineries requires long-term investments that involve substantial capital outlays, lengthy permitting timelines, and extended project development horizons that are incompatible with frequent or uncertain changes to allocation methodologies. Available data from Solomon Associates demonstrates that California refineries are already competitively disadvantaged relative to global peers. As of 2024, independent refinery benchmarking analyses indicate that, compared with worldwide averages, California petroleum refineries face declining profitability and incur higher operating costs due to increasingly stringent regulatory requirements, including the Cap-and-Invest program. These adverse conditions have materially increased GHG emissions and economic leakage risks as production shifts to regions with less stringent environmental and GHG regulations. In-state gasoline supply has already decreased, leading to a corresponding increase in gasoline imports; according to a 2025 Oil Price Information Service report, California's gasoline imports over the first 10 months of 2025 exceeded totals for any year since at least 2004. Since 2024, two California petroleum refineries have publicly announced permanent shutdowns. These permanent shutdowns have both reduced in-state fuel supply and further increased California's reliance on imported fuels. These imports are typically produced under less stringent environmental regulations and transported over long distances, resulting in higher lifecycle GHG emissions and increased costs for California consumers.

CARB's Proposed Amendments will heighten existing competitive disadvantages for California refineries.

AB 1207 directs CARB to design regulations "in a manner that transitions support from gas corporations to electrical distribution utilities," which inherently establishes a competitive disadvantage to gas corporations and related industries, such as refineries, in order to provide additional support for statewide electrification efforts. CARB's SRIA acknowledges that "[t]he trend of decreasing demand for natural gas has the potential to result in the elimination of upstream or downstream businesses." Absent corrective action now, continued tightening of industrial assistance through declining CAFs will likely only serve to further accelerate refinery closures and exacerbate leakage, leading to the potential elimination of additional in-state refining. CARB must therefore take immediate steps to prevent further erosion of the economic viability of California's petroleum and biofuel refineries.

A. CARB should explicitly designate petroleum refineries as high-leakage-risk.

Explicitly designating petroleum refineries as high-leakage-risk facilities instead of "medium" risk is necessary to meet CARB's obligations under AB 32 and AB 1207, protect environmental integrity, and ensure that GHG emissions reductions occur within California rather than being shifted out of state. While Table 8-1 assigns an industry assistance factor of 100% to all risk levels, explicit designation of petroleum refineries as "high" risk would provide a foundation for identifying alternative approaches to mitigate leakage through the allocation of allowances. For example, two of the criteria for sectors that currently use the alternative CAF are based on leakage risk factors (high emissions intensity and high leakage risk classification). In addition, updating the designation in Table 8-1 now would address future rulemakings should the values in Table 8-1 later change. (45d-WSPA-381.5)

Comment:

CARB should evaluate economic and environmental leakage risk on a sector-specific basis, based on best available science and scientific methodologies. To ensure that CARB can distribute allowances to food processers in a manner that minimizes leakage risk, CARB should consider sector-specific and facility-specific factors and take them into account when developing a methodology for distributing allowances post-2030 in accordance with the requirements of AB 1207. (45d-CLFP-328.6)

Agency response:

No changes were made in response to these comments. Please refer to Master Response 1 in the Response to Comments on the Environmental Impact Analysis regarding emissions leakage.

The initial Program design was to adjust the level of free allowance allocation based on each industrial sector's leakage risk over time using assistance factors, which were developed to calibrate allocation based on subsector leakage risk. The leakage risk classification is determined by the combination of emissions-intensity and trade-exposure metrics. These two metrics are mostly commonly used by climate programs, academics, and others to evaluate emissions leakage risk.

At the start of the Program, assistance factors were set at 100% for all subsectors through the first compliance period (2013-2014) and were set to decline in the second compliance period (2015-2017) and third compliance period (2018-2020) based on leakage risk. AB 398 directed assistance factors for all industrial subsectors to be 100% starting in 2021 through 2030. In response to AB 398 and Board direction to minimize emissions leakage and address potential unintended consequences stemming from a temporary increase in compliance

costs, CARB set all assistance factors 100% for 2018-2020 in the 2018 rulemaking. Consistent with the requirements of AB 398 and AB 1207, the Proposed Amendments maintain the 100% assistance factor through 2030. regardless of the leakage risk classification.

As stated in the ISOR, staff is in the process of evaluating leakage risk and potential measures to reduce leakage risk for covered industrial sectors Recommendations from the AB 398 evaluation for any new or revised leakage risk assessments or additional measures from that evaluation may inform future rulemakings, including post-2030 assistance factors.

O-13.1b Multiple comments: Reclassify leakage risk

Explicitly recognize petroleum refineries, crude extraction operations, and biorefineries as high leakage-risk sectors. (15d-BAC-61.7)

Comment:

To reflect actual trade exposure and support the ramp-up of in-state SAF production, Phillips 66 recommends classifying SAF production facilities (NAICS 325199) as having 'High' leakage risk. … Phillips 66 appreciates CARB's proposal to maintain the assistance factor at 100% through 2030 for all EITE facilities, regardless of leakage risk classification (High, Medium, Low). However, compressing the period with 100% assistance factor from 2027-2035 (as suggested in the ISOR3) to 2027-2030 materially affects investment certainty beyond 2030, particularly for SAF production facilities currently classified as having "Medium" leakage risk. The combined effect of a medium leakage risk classification and uncertain post-2030 industrial assistance create substantial challenges for capital planning and operational decision-making. Phillips 66 therefore urges CARB to reclassify biorefineries-particularly SAF production facilities-into the "High" leakage risk category to accurately reflect the potential for production to shift to other jurisdictions if compliance costs or allocation uncertainty become disproportionate. Biofuels are traded in international markets, and California imports substantial (-50-60%4•5) volumes of biofuels such as RD and SAF consumed instate each year. Following its conversion, RREC remains energy-intensive and is also more trade-exposed4 •5 than when it operated as a traditional crude oil refinery. Reclassification would help protect this emerging SAF production sector and support its continued growth in California. (15d-P66-78.4)

Comment:

Under the Proposed Amendments, iron and steel mills (NAICS 331111) using EAF production are classified as standard CAF activities. The standard CAF schedule continues its decline through 2031 — reaching a CAF of 0.494 in that year — and then drops sharply beginning in 2032 under an accelerated trajectory proportional to the

overall allowance budget reduction.8 By 2035, the standard CAF represents industry coverage of a mere 27.9% of compliance costs compared to the benchmark.

To understand the severity of this trajectory for the steel sector, consider the comparison CARB provides in the ISOR: in 2023, California's ratio of free industrial allocation to covered emissions was 62% — significantly below Washington State at approximately 100%, Québec at 99%, and the EU at 84%.10 The proposed CAF trajectory would extend this gap substantially further with a notable cliff starting in 2032. No state or country with which California competes for steel investment or production imposes anything remotely equivalent to the proposed post-2031 CAF trajectory on the steel sector. Arizona, Nevada, and Utah — the states most likely to attract steel investment that might otherwise come to California — have no carbon price applicable to steel manufacturers. Steel imports into California face no comparable compliance obligation. A facility choosing between a California EAF investment and an equivalent facility in any of these jurisdictions will, under the proposed CAF schedule, face a growing and unmitigated cost differential with a cliff in 2032 that will affect both operational economics and capital allocation decisions for decades. This problem is compounded by the fact that the steel sector in California currently has zero production. The declining CAF is not being imposed on a sector that has received years of transitional support while adapting its operations. It is being imposed prospectively on a sector that must re-enter the state from scratch, at a time when the cost of entry is already high due to electricity rates, permitting, grid interconnection, and capital market uncertainties. An overall industry assistance factor of just 27.9% by 2035 — merely eight years after PSG is expected to begin operations — does not provide adequate runway for the investments required to achieve the long-term decarbonization trajectory CARB envisions. (15d-PSG-107.5)

Comment:

...but we continue to encourage CARB to reclassify petroleum refining and associated industrial gas manufacturing to high leakage risk, instead of medium as currently proposed, given that petroleum refineries are already leaving California. (15d-AP-83.2)

Comment:

The CEC has closely tracked the status of in-state refining capacity. Following the announced – and permanent – closures of two California refineries in 2024 and 2025, the CEC noted that “in the near term, an abrupt loss of refining capacity and the increased need for imported fuel to compensate is likely to create new risks for stable fuel prices and supply. Keeping in-state and imported fuel competitive will be an important balancing act moving forward, because if the cost of refining fuel in state exceeds the cost of importing fuel, it could further accelerate additional petroleum refinery exits.” WSPA continues to urge CARB to explicitly designate California’s

petroleum refineries as high-leakage-risk facilities – not “medium” risk – to meet CARB’s obligations under AB 32 and AB 1207, to protect environmental integrity, and to ensure that GHG emissions reductions occur within California rather than production being shifted out of state. While Table 8-1 assigns an industry assistance factor of 100% to all risk levels through 2030 only, an explicit designation of petroleum refineries as “high” risk would provide a foundation for identifying alternative approaches to mitigate leakage through the allocation of allowances. Permanent shutdowns of California refineries reduce in-state fuel supplies and further increase California’s reliance on imported fuels, which are typically produced under less stringent environmental regulations and transported over long distances, resulting in higher lifecycle GHG emissions and increased costs for California consumers. (15d-WSPA-164.3)

Comment:

Kern again requests that CARB revisit the refining sector’s underlying leakage risk classification as “medium” in Table 8-1 in favor of a “high-risk” classification. Changing this classification in Table 8-1 aligns with the 100% Assistance Factor and will eliminate any room for ambiguity or mixed signals about the state of the refining industry. While Kern understands the need to routinely analyze emissions leakage risk, it is unrealistic that market realities or the increased competitive pressures the sector faces from imported fuels will have substantially improved in three years. This clarity is essential to assure refiners will not be at risk of a lower assistance factor when the program is next amended beyond 2030. (15d-KE-109.11)

Comment:

Impacts on In-State Refining Capacity Since the release of the 45-day package, disruptions to global energy supply chains have highlighted California’s energy systems’ unique exposure to geopolitical event. ...While we appreciate the inclusion of the “independent merchant refinery” provision, CARB must take further, pro-active steps to minimize leakage from in-state refining and address worsening energy affordability over the mid- and longer-term. We recommend CARB move petroleum refining and liquid hydrocarbon fuel production into the High leakage risk classification. While there would be no compliance benefit in the near-term, we believe this will send an important signal that CARB recognizes the active and ongoing leakage of in-state refining capacity. (15d-CCEEB-165.5)

Agency response:

No changes were made in response to these comments. Please refer to Agency Response to O-13.1a in on comments regarding leakage risk reclassification.

O-13.1c Comment:

Table 8-1 of the Proposed Regulation Order classifies petroleum refineries (NAICS 324110) as medium leakage risk, placing them on the Standard CAF trajectory. That classification predates two major refinery closures, an unprecedented gasoline import surge, and a formal determination by the Governor's own energy agency that the sector is in crisis. Phillips 66 permanently ceased conventional crude oil processing at its Wilmington refinery by the end of 2025. Valero has announced plans to idle or cease operations at its Benicia refinery by April 2026.

In June 2025, California Energy Commission Vice Chair Siva Gunda formally warned Governor Newsom that gasoline imports statewide could reach 25 to 35 percent of demand by the summer of 2026, and up to 50 percent in northern California after the anticipated refinery closures. His letter stated that if the cost of refining fuel in state exceeds the cost of importing fuel, it could further accelerate additional petroleum refinery exits. The proposed CAF schedule for refineries does precisely the opposite of what that finding recommends.

The AB 398 leakage report that the Legislature required CARB to deliver by December 31, 2025 has not been published as a formal report to the Legislature. Health and Safety Code section 38562(c)(2)(I) required CARB to report on the leakage risk posed by the regulation, including recommendations on necessary statutory changes and the potential for a border carbon adjustment, in the reports place CARB substituted a workshop. The Board is being asked to approve a CAF schedule for sectors experiencing documented, accelerating leakage without the statutory leakage analysis the Legislature required. That is a significant procedural gap, and we ask CARB to address it directly.

Food processing, glass manufacturing, cement, steel, and other sectors are similarly experiencing documented production decline and should be added to the high-leakage classification. For each of these industries, the leakage risk is concrete: reduced in-state output means reduced local employment, including union-represented positions in facilities that have operated under collective bargaining agreements for decades, diminished property and sales tax revenues for host communities, and increased dependence on imports produced without California's environmental standards. All EITE sectors with evidence of reduced in-state output should be reviewed for reclassification before this regulation is finalized. (BH-MCAA-1.7)

Agency response:

No changes were made in response to these comments. The AB 398 leakage report itself is outside the scope of this rulemaking. Please refer to Agency Response to O-13.1a on comments regarding leakage risk reclassification and

Agency Response to comment O-13.3 regarding the AB 398 leakage report publication.

O-13.2 Comment:

CIPA also supports the categorization of Crude Oil Extraction as a 'high leakage risk' activity. (45d-CIPA-369.4)

Agency response:

No changes were made in response to this comment. Staff appreciates the commenters' support.

O-13.3 Multiple Comments: CARB should publish the updated leakage risk assessment

A thorough understanding of leakage risk is essential to informing these decisions. CalChamber notes that the rulemaking record does not appear to include an updated analysis of emissions leakage exposure associated with the significantly tighter cap trajectory proposed in the rulemaking. In prior discussions surrounding the cap-and-invest reauthorization process, CARB indicated that it was preparing updated analyses examining leakage risks across covered sectors. Such analysis would provide important context for evaluating whether the proposed allowance budgets and allocation framework provide sufficient protection for EITE industries as the program becomes more stringent. In light of AB 1207's explicit directive to minimize emissions leakage, the availability of an updated and transparent leakage assessment is particularly important for informing regulatory decisions in this rulemaking. CalChamber therefore encourages CARB to release any updated leakage analysis and incorporate it into the rulemaking record so that stakeholders and CARB's Board can fully evaluate whether the proposed regulatory framework adequately protects against emissions leakage while the cap tightens. Maintaining robust industrial allocation does not weaken the environmental integrity of the cap-and-invest program. The emissions cap continues to determine the overall quantity of emissions allowed within the program. Allocation simply determines how compliance costs are distributed among regulated entities. By maintaining sufficient leakage protections, CARB can ensure that emissions reductions occur through technological innovation and efficiency improvements rather than through the relocation of production outside California. Keeping industrial allocation strong and predictable as the cap tightens will help preserve the balance between environmental ambition and economic competitiveness that has historically defined California's cap-and-invest program. (45d-CCoC-374.3)

Comment:

CARB must conduct a comprehensive, updated emissions leakage analysis grounded in California's current economic conditions and emissions trends.

Under AB 398, CARB was required to develop a report on "the leakage risk posed by the regulation" and "recommendations to the Legislature on necessary statutory changes to the program to reduce leakage…" by December 31, 2025.35 In line with this legislative directive, CARB must comprehensively evaluate potential leakage impacts, taking into account California's current economic conditions and emissions trends. CARB's proposal currently does not incorporate updated leakage findings, even though

CARB's Standardized Regulatory Impact Assessment (SRIA) predicts an average reduction in output of $125 million between 2026 and 2046 for the petroleum and coal products manufacturing industry and a reduction in related employment.36 These projected industry impacts create an increased risk of leakage, particularly in light of announced California petroleum refinery closures, which will reduce the State's refining capacity by up to 20%.

CARB should promptly share any existing GHG emissions leakage analyses to inform stakeholder engagement during this rulemaking, and provide sufficient time between the release of such a comprehensive study and the final rulemaking to allow for meaningful public comment. Stakeholders must have a clear understanding of how CARB developed its leakage assessment and whether, and to what extent, the Cap-and-Invest program has already resulted in emissions leakage within the industrial sector before CARB adopts amendments that could further constrain the supply of compliance instruments. Transparency regarding the reasoning, data, assumptions, and methodologies used in the leakage assessment is essential to support informed public comment and sound program design. (45d-WSPA-381.16)

Comment:

CARB based its proposed regulatory updates on the results of an industrial emissions leakage study it commissioned to comply with reporting requirements in AB 398 (2017). Evaluation of this leakage report by stakeholders and their technical experts is critical to our ability to meaningfully evaluate whether proposed regulatory changes based on the study's results and recommendations adequately characterize and minimize leakage risk. Given the importance of the study to CARB's development of leakage minimization measures in the proposed regulation, CLFP asks that CARB release the findings of the industrial leakage study and provide an additional public comment period on the pending regulatory proposal following its release to facilitate meaningful stakeholder participation and input on the regulatory proposal. (45d-CLFP-328.8)

Comment:

CARB should also publicly release its analysis of industrial leakage risk of EITE industries within this secondary workstream. (45d-NRDC-376.17)

Comment:

CARB should adequately evaluate leakage risks and long-term investment risk uncertainties. AB 32,AB 398,and AB 1207 require CARB to minimize industrial emissions leakage in California when regulating GHG emissions through its Cap-and-Invest program. In support of this requirement, CARB was required to provide a leakage risk report to the State Legislature – including any "recommendations to the Legislature on necessary statutory changes to the program to reduce leakage" – by December 31, 2025. Despite knowing about this obligation since 2017, CARB has failed to prepare its report, which is now 124 calendar days overdue. In addition, CARB has failed to solicit public feedback on updated leakage risks in developing its report. CARB has again delayed release of the leakage risk report well into the final stage of its Cap-and-Invest rulemaking. Instead, CARB only offered select "key findings" at an October 2025 pre-rulemaking workshop... In addition, without a full report, stakeholders do not have an adequate basis to review CARB's analysis of potential leakage risks. CARB's failure to solicit meaningful public feedback on updated leakage risks impedes CARB's ability to meaningfully address industrial leakage in its proposed Cap-and-Invest amendments and evaluate whether existing policy mechanisms should be modified or new mechanisms should be introduced to address and minimize those leakage risks, in accordance with CARB's legislative mandate. (15d-WSPA-164.2)

Comment:

Table 8-1 is unchanged. Sectors experiencing leakage remain classified Medium leakage risk despite over a dozen closures. The CEC's June 2025 formal finding notes that imports could reach 25 to 35 percent of statewide demand by summer 2026. The AB 398 statutory leakage report required by December 31, 2025 was substituted with a workshop presentation and the required analysis was never transmitted to the Legislature. The Board should not finalize leakage classification for sectors in active contraction without the statutory analysis the Legislature required. (15d-CPSC-101.4)

Agency response:

No changes were made in response to these comments. Please refer to Master Response 1 in the Response to Comments on the Environmental Impact Analysis and Agency Response O-1.1a to comments regarding emissions leakage.

During an October 2025 public workshop, CARB staff provided an overview of key contractor findings on industrial leakage risk, and concluded that the GHG emissions leakage risk of key covered sectors were largely unchanged from the assessment conducted at the outset of the Program in 2010 (CARB 2025j, CARB 2010a). Specifically, metrics used to classify emissions leakage risk (emission intensity and trade exposure) were overall similar. The assessment also

confirmed that the current output-based allocation approach continues to be effective in addressing emissions leakage risks for emissions-intensive and trade-exposed industries.

However, since AB 398 was enacted, significant shifts in domestic and international policy have occurred—such as new federal trade policies, changes to tariff structures, and disruptions to key tax incentives—as well as broader global energy market upheavals. These developments have changed the economic landscape to such an extent that the nearly completed leakage assessment became outdated and no longer reflected current conditions. Publishing that version would not have provided meaningful or accurate information for stakeholders.

CARB plans to further assess emissions leakage risk for covered facilities, including any updated data and information available before post-2030 assistance factors for industrial allowance allocation in a future rulemaking and will share any updated date and information as part of that public process.

O-13.4 Comment:

The proposed cap trajectory makes the leakage concern more acute, not less. Under proposed Table 6-2, the annual allowance budget declines from 254 million in 2026 to 158.8 million in 2030, a reduction of more than 37 percent in four years, and continues declining to 109.6 million by 2035 and 30.3 million by 2045. Against this accelerating stringency, the regulation's cost-containment cushion is shrinking in parallel: the number of California allowances allocated to the Allowance Price Containment Reserve drops from 2,272,600 in 2030 to 1,473,000 in 2031, an approximately 35 percent reduction in a single year, and continues declining to 303,000 by 2045.10 This happens as the price floor and reserve tier prices continue to increase every year. Compliance pressure is rising while the buffer against price shocks is diminishing. The Board is also considering these amendments without the analytical foundation the Legislature required CARB to provide. Under Assembly Bill (AB) 398, CARB was required to develop a report on the leakage risk posed by the regulation and recommendations for necessary statutory changes to reduce leakage by December 31, 2025.11,12 That deadline has passed and no such report has been released, even as CARB's own Standardized Regulatory Impact Assessment estimates total direct cost over the 2025 to 2046 regulatory lifetime at $143 billion, averaging $6.8 billion annually.13 BizFed respectfully submits that decisionmakers, the business community, and the Californians who, by CARB’s own assessment, will pay compliance costs through increases in food, fuel, energy, and goods prices cannot meaningfully evaluate a rulemaking of this magnitude without the statutorily required leakage analysis. the continued provision of industry assistance through Table 8-1 allocations, the recognition of high-leakage-risk classifications in

Table 9-2, and the creation of the MDI. BizFed appreciates these elements. They are, however, insufficient on their own to offset the compounding pressure created by the Table 6-2 cap trajectory, the Table 8-2 and 8-3 Allowance Price Containment Reserve (APCR) decline, and the absence of defined CAF values beyond 2030. BizFed respectfully urges CARB to strengthen the leakage-protection architecture of the proposed amendments by:

(i) releasing the AB 398 leakage report and supporting analysis before final adoption;
(ii) reclassifying sectors with documented exit, closure, or production-decline activity as high leakage risk;
(iii) establishing defined, or at minimum methodologically transparent, CAF values for budget years 2031 through 2045, with particular moderation for high-leakage-risk sectors; and
(iv) evaluating whether the combined effect of the declining APCR allocation and existing price ceiling escalation structure adequately protects California consumers from price shocks under the accelerating cap trajectory, and adjusting the structure where it does not. (15d-LACBF-15.4)

Agency response:

No changes were made in response to these comments. Since the beginning of the Program, CARB has been using a combination of emissions intensity and trade exposure data to evaluate the leakage risks faced by industrial subsectors at the 6-digit NAICs code level. This approach is most commonly used by emissions trading systems worldwide, academics, and others to evaluate emissions leakage risk around the world.

There are many factors that impact business decisions and environmental program compliance costs are not major drivers. Therefore, simply using exit, closure or production-decline to classify emissions leakage risk is insufficient.

Please refer to Master Response 1 in the Response to Comments on the Environmental Impact Analysis and Agency Response to comment O-1.4 regarding emissions leakage. Please also refer to Agency Response to comment O-13.3 regarding AB 398 industrial leakage risk assessment. Please also refer to Agency Response to comment O-5.6 regarding post-2030 CAF.

O-13.5 Comment:

CLFP supports CARB’s decision to further analyze emissions leakage risk for covered facilities and to propose additional updates to the Program regulations to minimize emissions leakage, including post-2030 allowance allocation, based on current and accurate information. Updated sector-specific and facility-specific leakage risk data and

analyses are necessary for CARB to design future Program updates that satisfy the directive in AB 1207 (Irwin, 2025) to "distribute industrial sector allowances in a manner that minimizes emissions leakage risk to cost-effectively achieve" the state's greenhouse gas (GHG) reduction goals. (Health & Saf. Code, § 38562(c)(2)(G).) We urge CARB to share information and to engage with stakeholders and subject matter experts early and often through a transparent process designed to inform CARB's further evaluation of emissions leakage risks, including regarding the scope of further leakage risk assessments and research methodologies performed or funded by CARB, preliminary results of that research, and interpretation and application of leakage study findings. CARB can and should take advantage of stakeholder expertise and information to help CARB navigate these complex tasks and efficiently accomplish the directives in AB 1207. (15d-CLFP-139.4)

Agency response:

No changes were made in response to these comments. Staff appreciate the support for CARB's continuing assessment of emissions leakage risks for industrial sectors. Please refer to Master Response 1 in the Response to Comments on the Environmental Impact Analysis to comments regarding emissions leakage.

O-13.6 Comment:

End post-2030 free industry allocations pending updated leakage analysis and revised economic conditions (BH-TCC-40.3)

Agency response:

No changes were made in response to these comments. Please refer to Master Response 1 in the Response to Comments on the Environmental Impact Analysis to comments regarding emissions leakage.

O-13.7 Comment:

Table 8-1 is unchanged. Sectors experiencing leakage remain classified Medium leakage risk despite over a dozen closures. The CEC's June 2025 formal finding notes that imports could reach 25 to 35 percent of statewide demand by summer 2026. The AB 398 statutory leakage report required by December 31, 2025 was substituted with a workshop presentation and the required analysis was never transmitted to the Legislature. The Board should not finalize leakage classification for sectors in active contraction without the statutory analysis the Legislature required. (BH-CPSC-5.7)

Agency response:

No changes were made in response to this comment. Please refer to Agency Response to comment O-13.3.

Q. Limited Emissions Exemptions

Q-1 Electricity Generation During a State of Emergency

Q-1.1 Comment:

CARB has proposed changes for covered entities and individual participants in the C&I program. IETA supports the direction and encourages CARB to regularly assess the market for instances of manipulation and make further changes if necessary to maintain a competitive market.

We note that CARB has introduced “limited emissions exemptions” from the C&I program for fuel cells and for entities that cross the emissions threshold for inclusion in C&I due to electricity generation during a state of emergency. We believe that CARB must periodically evaluate whether these exemptions compromise California’s ability to meet its statutory emissions reductions targets. CARB should emphasize this point in the Final Statement of Reasons (FSOR). (45d-IETA-341.13)

> **Agency Response:**
> No changes were made in response to this comment. CARB regularly assesses Program progress, California’s progress towards meeting its statutory emissions reductions targets, and plans to review the impact of the limited emissions exemptions in future assessments.

Q-1.2 Comment:

The proposed amendments provide an exemption for generation facilities whose GHG emissions occurring during state emergencies result in a compliance obligation… Providing an arbitrary exclusion from the C&I program eliminates a price signal for those facilities. In the near term, this means that the owners or operators of these facilities will be encouraged to marginally operate more often or at a higher capacity and are less likely to prioritize least emitting resources first. This also means that, in the future when a fossil free alternative can provide an emergency generation contract at a lower social and economic cost, the purchaser won’t be financially incentivized to purchase the clean version. In other words, this arbitrary exemption chooses to shift the costs of the associated GHG emissions, as well as correlated co-pollutants, back onto Californians to pay in the short and long term. Consequently, this exemption risks creating a moral hazard for California’s long-term power sector renewable planning, where utilities, the state government and other relevant stakeholders grow increasingly dependent on the backup strategies like the Strategic Reliability Reserve, rather than ensuring compliance with traditional load serving avenues. This exemption is particularly troubling as California is faces moderate to high load growth from data centers, which are changing expectations about the scale and demand for clean energy supply. Given the potential to exacerbate adverse public health impacts during stressed grid conditions, we seek

clarity and transparency on why this exemption is included, and ask CARB to remove this exemption within these proposed amendments. Questions which CARB should consider answering within the ISOR include: Given California's continuing improved reliability circumstances since 2022, why did CARB deem it necessary to remove the C&I price signal for these facilities to maintain grid reliability during state emergencies?... How many of the 20 exempted facilities are contracted through ESSRRP, versus privately funded off-grid onsite generation or utility-owned generation?... Do the amendments intend for the definitions provided through the C&I exemption to align with those conditions allowed in a State of Emergency, or is the exemption intended to cover more broader circumstance?... How does this exemption align with the state's expected emissions reductions attributed to the power sector through 2045? CARB should reconsider rushing this exemption within these C&I amendments, particularly as many Strategic Reliability Reserve resource contracts expire this year, and future procurement conditions and constraints are uncertain. If CARB decides to maintain this exemption within the regulation, the agency should address the lack of clarity around why exempting emergency generation facilities is necessary within the broader context of California's electricity grid reliability planning. (45d-NRDC-376.7)

Agency Response:

Changes were made in response to this comment. The 45-day proposal prevented a non-covered electricity generating facility from becoming a covered entity due to the emissions associated with an increase in energy production during a State of Emergency declared by the Governor. Under this change, the emissions during the State of Emergency would be excluded when evaluating whether an electricity generator exceeded the 25,000 MTCO2e inclusion threshold. In the 15-day Amendments, the Regulation text was changed to clarify that a State of Emergency declared by the Governor must be made under the provisions of Government Code section 8558(b). In addition, text was changed to clarify that the exemption is limited to emergencies declared to address a sudden and severe energy shortage. This change aligns the Regulation with statutory language and clarifies the scope of the proposed limited exemption.

Q-2 Fuel Cells

Q-2.1 Comment:

Bloom appreciates CARB's proposed implementation of commitments in Resolution 18-51, and more specifically the following language: BE IT FURTHER RESOLVED that the Executive Officer will return to the Board with proposed amendments to exempt through 2030 fuel cells connected to existing natural gas infrastructure where there are demonstrated local air quality benefits. The Executive Officer will evaluate and propose

any necessary transition assistance for fuel cells that meet these requirements and incur a compliance obligation for emissions years 2018 through 2020.

The exemption contained at Section 95812(c)(1)(A) of the Amendments is consistent with Resolution 18-51 and ensures that fuel cell resources emitting more than 25,000 MT CO2e, but also providing significant emission benefits during the 2025-2030 timeframe, are appropriately rewarded for the benefits that they have – and will continue to – provide during that period. As we get closer to 2030, Bloom encourages CARB to continually assess the landscape (including the availability of renewable fuels and sustainability of grid resources) to determine whether fuel cell EGUs continue to provide benefits and, therefore, the exemption period should be extended. (45d-BE-344.1)

Agency Response:

No changes were made in response to this comment. Staff appreciates commenter's support for the proposed limited fuel cell exemption. CARB will continue to evaluate Program design and implementation. Any extension of the fuel cell exemption beyond 2030 may be considered in a future rulemaking.

Q-3 Vented and Fugitive Methane Emissions Associated with NGS

Q-3.1 Comment:

B. Section 95852.2 — Emissions Without a Compliance Obligation: Risk of Inadvertent Methane Slip Exemption

Section 95852.2 and the proposed amendments to limited emissions exemptions (ISOR Section M) include provisions covering vented and fugitive methane emissions associated with natural gas suppliers (NGS). We are concerned that methane slip from lean-burn engine exhaust could be characterized or treated as falling within these or related exemption categories, either inadvertently or through regulatory ambiguity. Methane slip from exhaust is neither a vented emission nor a fugitive emission in the traditional sense — it is an incomplete combustion byproduct emitted through a point source. It should be unambiguously subject to a compliance obligation as a combustion emission. We recommend that CARB:

• Explicitly clarify in Section 95852.2 that methane slip from engine exhaust is classified as a combustion emission subject to a full compliance obligation, and is not eligible for treatment as a vented or fugitive emission or any other exemption category.

• Add a definition or cross-reference in the definitions section (Section 95802) that distinguishes combustion methane slip from vented and fugitive methane, ensuring consistent treatment across the regulation. (45d-EI-403.2)

Agency Response:

No changes were made in response to this comment. Existing regulatory text distinguishes combustion emissions from vented and fugitive emissions.

Under section 95852(i), the compliance obligation includes emissions of methane resulting from combustion of fossil fuel and biomass-derived fuel. The Proposed Amendments to section 95852.2 do not create an exemption for methane slip from engine exhaust. Instead, the Proposed Amendments replace the existing broad exemption for vented and fugitive emissions from natural gas supplier-associated infrastructure with a narrower exemption for emissions from pipeline dig-ins reported under MRR section 95152(i). This change refines the exemption for vented and fugitive methane emissions.

MRR section 95102(a) defines vented emissions as “intentional or designed releases of CH_4 or CO_2 containing natural gas or hydrocarbon gas (not including stationary combustion flue gas)”. Section 95102(a) also defines fugitive emissions as “emissions which are unintentional and could not reasonably pass through a stack, chimney, vent, or other functionally-equivalent opening”. These definitions do not characterize stationary engine exhaust as vented or fugitive emissions.

Accordingly, methane slip from engine exhaust is not eligible for treatment as a vented or fugitive emissions exemption under section 95852.2. Moreover, exemptions for fuels that are specified under section 95852.2 only apply to CO_2 emissions. CARB therefore finds that no additional clarification or cross-reference is necessary in the Proposed Amendments.

Regarding methane slip emissions reporting, see also Agency Response to comments B-6, B-7, and B-8 in MRR FSOR.

Q-3.2 Comment:

A. Section 95852 — Compliance Obligation Calculation: Default Emission Factors Undercount Methane Slip

Compliance obligations for natural gas combustion under Section 95852 are calculated using emission factors that assume substantially complete combustion. These factors are derived from approaches aligned with EPA's GHG Reporting Program (40 CFR Part 98, Subpart C), which similarly apply general combustion emission factors to stationary natural gas combustion without distinguishing lean-burn engine architectures.

For lean-burn engines, this approach systematically and materially undercounts actual methane emissions. A covered entity operating a fleet of LBSI engines may report CO2 from combustion accurately while effectively zeroing out 1–5% of the fuel’s methane

content from its compliance calculation. This is not a rounding error — it is a structural gap that can represent 25–50% of actual CO2e emissions going unaccounted. This compliance gap is most acute — and most consequential for program integrity — for entities burning renewable natural gas (RNG). A covered entity fueling lean-burn engines with RNG currently faces little or no compliance obligation for those engines: the combustion emission factors produce near-zero CO2e on a lifecycle basis (reflecting the upstream carbon credit), and the exhaust methane slip is not captured at all. The result is that an entity burning RNG in lean-burn engines may report a compliance obligation that is effectively zero or even negative for those assets, when the actual point-of-use CO2e footprint — counting the unburned methane slipping through the exhaust at GWP100 — is 50–100% higher than combustion CO2 alone. This is not merely a theoretical concern: it means that RNG-fueled lean-burn engine operators may be among the most significantly undercounting entities in the covered sector, while simultaneously appearing to be the most climate-responsible. The Cap-and-Invest program cannot credibly claim to price carbon accurately if its compliance obligation calculations produce this outcome. We urge CARB to ensure that the Section 95852 amendments explicitly address this dynamic by requiring point-of-use methane slip measurement as a condition of applying reduced lifecycle emission factors for RNG combustion in lean-burn engines.

We recommend that CARB amend Section 95852 to:

• Explicitly require that covered entities operating lean-burn natural gas reciprocating engines calculate methane slip as a separate emission category, using either (a) measurement-based quantification from stack testing or continuous exhaust monitoring, or (b) engine model- and load-specific emission factors verified against representative measurement data.

• Prohibit reliance on general stationary combustion emission factors for lean-burn engine methane emissions, as these factors were not designed to capture methane slip and materially understate actual emissions.

• Define “lean-burn natural gas reciprocating engine” as a distinct equipment subcategory within the regulation for purposes of both compliance obligation calculation and reporting, consistent with amendments we recommend to MRR. (45d-EI-403.1)

Agency Response:

No changes were made in response to this comment. Staff agree methane slip is a topic for future research and information gathering. Under Section 95852, operators of the facilities have a compliance obligation for every metric ton of CO2e emitted, except as specified in section 95852.2. See Agency Response to comment Q-3.1 for more details on methane slip emissions. Compliance obligation calculations depend on MRR. Thus, this comment also refers to

proposed amendments to the Mandatory Reporting Regulation and is outside the scope of this rulemaking. Please refer to Agency Response to comment B-8 in the MRR FSOR.

R. Biomass Derived Fuels

R-1 List of Biomass-derived Fuels Eligible for Exemption

R-1.1 Multiple Comments: Fossil Denaturants

We reiterate our opposition to including ethanol denaturant as an obligated liquid fuel under the Cap-and-Invest umbrella. RPMG is not currently an obligated or reporting party under C&I or MRR, and won't be given the point of obligation/reporting isn't changing in this amendment package. However, we believe this change is not a cost-effective GHG emissions effort. It is important for CARB to recognize that classifying standard ethanol denaturant creates a multitude of costs, potentially through the entire supply chain. This proposed change will increase costs for reporting, verification, transactions, personnel time and IT infrastructure, and other business-related costs.

While we would like to in the future integrate biomass-based denaturants into our supply chain, there are various regulatory hurdles outside of California that prevent full integration and use, as renewable denaturants are not certified in all regulatory programs. Even if the industry could fully replace fossil denaturant with a biomass component, most likely Renewable Naphtha, the GHG emissions reduction potential, do not justify the added regulatory costs and complexity. Assessing this quantitatively, there is very minimal impact on GHG reduction in play. Replacing a quarter of traditional denaturant with Renewable Naphtha, a very optimistic goal, would only result in an approximate 57 thousand metric ton reduction, or 0.02 percent of the 2026 Program Budget (the 'Cap').

The ethanol industry is currently required to denature. An activity that does nothing to enhance the properties of ethanol in fuel applications, it simply renders it unfit for consumption. Therefore it is important to recognize that future requirements for denaturing fuel ethanol may be removed altogether.

We urge CARB to recognize that including denaturant as an obligated fuel under the Program imposes far too many costs for very little benefit and little GHG emission reductions, and therefore should be struck from the final adopted rule. (45d-RPMG-297.2)

Comment:

POET is concerned by the removal of the bioethanol denaturant exemption in the Proposed Amendments, which will not lead to meaningful carbon reductions and may

actually hinder California's sustainability goals by increasing the cost of low-CI bioethanol. In the Initial Statement of Reasons ("ISOR"), CARB explains that the "exemption for the fossil denaturant is deleted from the Regulation" so that the treatment of denaturant—which is added to bioethanol for compliance with federal alcohol fuel tax regulations—is "[c]onsistent with the Program's treatment of other supplied fossil fuels."1 But denaturant—a small volume of fossil fuel added to bioethanol for federal alcohol tax compliance purposes—is a de minimis contributor to transportation emissions in California. To put it in perspective, assuming full adoption of E10 in California and 2% fossil denaturant in bioethanol, fossil denaturant would comprise approximately 0.2% of a gallon of gasoline at the pump compared to the 90% petroleum fuel would comprise. That is about 450 times more petroleum fuel in a gallon of E10 gasoline compared to the denaturant.2 Expanding the cap and invest program to apply to this tiny increment of fossil fuel emissions achieves little and ultimately serves only to expand reporting requirements and increase the cost of bioethanol shipped to California, which will now reflect an increased economic cost of compliance.

CARB's cost-raising proposal comes at the same time California is trying to boost bioethanol volumes and cut gasoline prices following the passage of AB 30, which approved the statewide sale of E15. Moreover, the Proposed Amendments fail to provide a meaningful incentive to encourage biofuel producers to use alternative denaturant products such as renewable naphtha, which is currently prohibitively expensive despite existing incentives.

Finally, CARB's LCFS program already accounts for denaturant as part of the lifecycle emissions of biofuels. Fossil denaturant added to a gallon of bioethanol increases the biofuel's carbon intensity and reduces its LCFS credit value. CARB should maintain its oversight of biofuels, including associated fossil denaturants, through the comprehensive LCFS program and avoid policies conflicting with the state's E15 goals. POET therefore urges CARB to reconsider the Proposed Amendment and maintain the fossil denaturant exemption. (45d-POET-308.1)

Comment:

9. CARB should revise the ethanol denaturant reporting amendment to avoid double-penalizing fuels.

Currently, all ethanol blended in transportation fuels is reported such that all associated biogenic CO2 emissions are exempt under the Cap-and-Invest program and MRR. CARB is now proposing to change this method to exclude the fossil denaturant in the ethanol from exempted biomass-derived fuels' GHG emissions, including amending MRR so that the volume of fossil fuel denaturant from supplied fuel ethanol is counted.

CARB should revise its proposed approach to ethanol denaturant reporting to avoid double-penalizing fuels that are already regulated under the LCFS, particularly where denaturant use is required, and to avoid double-counting of emissions. Ethanol denaturants have been included in the LCFS's CA-GREET modeling dating back to at least 2015. The Proposed Amendments would unnecessarily double-count and double-regulate these emissions. In addition, CARB's proposed default calculation method will make reporting even more challenging and require a shift in protocol to include out-of-state entities.

WSPA reiterates its position that low-carbon fuels are sufficiently regulated under LCFS, which addresses biogenic emissions from the production and use of transportation fuel, and therefore should continue to be exempt from reporting under the Cap-and-Invest program. (45d-WSPA-381.23)

Comment:

We believe the appropriate regulatory authority for bioethanol remains the LCFS, and ARB should maintain bioethanol's exemption in the Cap-and-Trade program. This allows California to continue maximizing bioethanol as driver of GHG reductions. (45d-GE-399.1)

Comment:

Additionally, in the absence of an exemption the increased costs to an ethanol producer, which would not be the reporting party or the obligated covered entity, would outweigh the potential benefits of obligation and coverage by the cap. These increased costs could impact the entire supply chain, with increases in costs for anything from data collection and reporting to verification. (45d-GE-399.2)

Comment:

Therefore, we respectfully request CARB reconsider obligating the denaturant used in fuel ethanol entering California under the cap and invest program. If CARB continues the rulemaking process with the obligation for denaturant intact, we request CARB consider a delay in enforcement, providing ethanol producers and its partners in the supply chain time to adjust to this new obligation, its costs, and its ramifications. (45d-GE-399.3)

Comment:

As CARB is aware, for tax purposes biofuel producers are required to use denaturant in all ethanol sold as fuel, per 40 C.F.R. § 80.2.3 Furthermore, the vast majority of denaturant uses natural gasoline. Yet the MRR proposal requires fossil denaturants to be reported as RBOB. If CARB maintains the current proposal as it relates to reporting and obligation of fuel ethanol denaturants, CARB should either clarify whether natural

gasoline should be categorized as RBOB or add natural gasoline as an option for reporting denaturant. (45d-GE-399.4)

Comment:

RFA opposes the inclusion of fossil denaturant in ethanol as an obligated fuel under the proposed amendments. The costs to ethanol producers, consumers and the entire supply chain to obligate fossil denaturant in the C&I program far outweigh the negligible GHG benefits from such a requirement. With the declining production of gasoline in California and rising costs of fuels to California consumers, CARB should encourage the increased supply of lower cost, lower emitting ethanol.

Ethanol producers are required by federal law to add two percent denaturant to pure ethanol to render it unfit for human consumption. This is an antiquated regulation dating back to the days of Prohibition. There are better, lower cost methods of ensuring that ethanol stays out of the beverage ethanol supply.

Rather than unnecessarily penalizing ethanol producers and consumers with added costs of compliance under the C&I program, RFA encourages CARB join the ethanol industry in petitioning the federal government to remove the denaturant requirement for ethanol fuel, further increasing the supply of lower cost, cleaner burning renewable fuels to California, (45d-RFA-438.1)

Agency Response:

No change was made in response to this comment. The Proposed Amendments remove the compliance obligation exemption for the fossil denaturant portion of fuel ethanol. This change is consistent with the Program’s treatment of other supplied fossil fuels and is needed to capture GHG emissions from fossil denaturant more accurately in an entity’s total emissions and include all fossil denaturant emissions in an entity’s covered emissions. As noted by the commentors, the LCFS program regulates biomass-derived fuels, as well as fossil fuels, through life-cycle analyses which includes the addition of denaturants into fuel ethanol. However, the inclusion of fuels or feedstocks in LCFS does not exempt it from a compliance obligation in the Cap-and-Invest Program.

The commentors also request that CARB join the ethanol industry in petitioning the federal government to remove the denaturant requirement for ethanol fuel. Such a request is out of scope of this rulemaking. The mechanics and timeline of reporting fossil denaturants refer to proposed amendments to the Mandatory Reporting Regulation and is outside the scope of this rulemaking. Please refer to Agency Response to comment I-5 in the MRR FSOR.

R-1.2a Comment:

Section 95852.2. Emissions Without a Compliance Obligation

We recommend adding the term “byproducts,” in section (a)(3) to further demonstrate the types of ag waste and residues that can meet the prerequisites of this section. (45d-ACC-433.3)

Agency Response:

No change was made in response to this comment. The Proposed Amendments clarify the list of biomass-derived fuels that are eligible for exemption to include agricultural wastes and residues, but not all agricultural crops. The term ‘byproducts’ is undefined in this comment, and it is unclear why the inclusion of ‘byproducts’ is appropriate or necessary.

R-1.2b Comment:

We recommend adding the term “byproducts,” in section (a)(3) to further demonstrate the types of ag waste and residues that can meet the prerequisites of this section. (15d-ACC-102.3)

Agency Response:

No change was made in response to this comment. Please refer to the Agency Response to comment R-1.2a.

R-1.3a Multiple Comments: Oppose Biofuel Exemptions

The purpose of this letter submitted to the California Air Resources Board (CARB) in regards to the Proposed Amendments to the California Cap on Greenhouse Emissions and Market-Based Compliance Mechanisms Regulation (Amendments) is to provide a quick review of available greenhouse gas emissions data and illuminate the economic impacts resulting from the compliance obligation exemptions being granted to biofuel producers and distributors.

These exemptions essentially allow the covered entity enjoying the exemption to forego being required to invest in allowances to cover those exempted emissions. Fewer purchased allowances result in less allowance demand, which contributes to lower carbon prices. Depressed carbon prices reduce revenues for the achievement of the objectives of the program. Our organization Biofuelwatch is providing this letter because it is important to highlight the likely climate damage and significant economic losses accruing from the exemption from the compliance obligation for those entities that are producing, importing, distributing and/or selling liquid biofuel products like so-called ‘renewable diesel.’. We urge state authorities to address this crucial issue, to revise the justifications for providing these exemptions, and to revoke them. Note that the best available science strongly associates persistent water impacts, toxic pollution from

agroindustry fertilizers and pesticides, deforestation, forest degradation, and other negative social, environmental and climate impacts with the steady increase in production and consumption of liquid biofuel products like ‘renewable diesel’ and ‘sustainable aviation fuel. The exemption from the compliance obligation for the ‘biogenic CO2 emissions’ under Cap-and-Trade is predicated on the ‘carbon neutral’ character that is arbitrarily granted to biogenic fuels. However, a building body of evidence calls into question the validity of the methodologies that CARB is relying on to characterize these biofuel products as ‘carbon neutral.’ What is unarguable is that the biogenic CO2 emissions reported to CARB that are granted an exemption from the compliance obligation under Cap-and-Trade are indeed happening in the real world. Biofuel products such as ‘renewable diesel’ are being burnt in record quantities in the state. Those emissions are impacting communities, harming air quality, and damaging the global climate. The exemption from the compliance obligation for these emissions is based upon the erroneous assumption that photosynthesis neutralizes the pollution from burning these fuel products.

There are solid scientific and environmental protection reasons to revisit and revoke the exemptions granted to biogenic CO2 emissions under the markets-based compliance mechanism. Our quick review of the data combined with some rudimentary calculations will also drive home the economic reasons that these exemptions must be revisited, especially in light of the concerns about reduced revenues for the Greenhouse Gas Reduction Fund and an underperforming markets-based compliance mechanism.(45d-BFW-42.1)

Comment:

CBE vehemently rejects compliance exemptions for biomass-derived fuels and biomethane. Crop-based biofuels refining is known to pose particular and significant harms to environmental justice communities across California and the world -- from the indirect land use change implications of fuel stocks to refinery greenhouse gas and co-pollutant emissions and concerning levels of local air pollution from combustion at the tail pipe. These fuels are already overrepresented in the Low Carbon Fuel Standard, and Federal Renewable Fuels Standard. (45d-CBE-449.3)

Agency Response:

No changes were made in response to these comments. The Proposed Amendments clarify exemptions from a compliance obligation for certain biogenic emissions. The modifications to biofuel exemptions are not arbitrary. The proposed changes align with existing exemptions in the Cap-and-Invest Program and provide a more consistent and certain regulatory environment for the evolving biofuels sector.

Since the start of the Program, Cap-and-Invest has exempted biofuels that meet specified requirements from compliance obligations. This is aligned with guidance from the Intergovernmental Panel on Climate Change (IPCC) that recommends biomass fuels be excluded from energy use totals to prevent double counting in GHG accounting. The combustion of biogenic fuels is considered to be part of the active carbon cycle, due to the relatively quick reabsorption of the emitted carbon by plant growth. This differs from combustion of fossil fuels which reintroduces long sequestered CO_2 to the active carbon cycle. Generally, the requirements are that the biofuel must be on the list of approved fuels, be combusted for energy, and be reported and verified per MRR requirements.

These overall requirements are not changing under the Proposed Amendments. As explained in the 2010 FSOR (CARB 2011), the Regulation applies a compliance obligation on direct emissions from covered entities. Lifecycle analysis of biomass-derived fuel and its potential emissions or impacts beyond the emissions at the covered entities is beyond the scope of the Proposed Amendments, as biofuels are already included in the existing Regulation and part of the baseline. Additionally, separate from the Cap-and-Invest Program, California has complementary measures including the Low Carbon Fuel Standard support decreasing the lifecycle GHG emissions from transportation fuels, and ZEV programs and regulations that support the deployment of non-combustion transportation options.

R-1.3b Comment:

CARB must eliminate provisions of the rule changes that expand opportunities to double-count emissions reduction from biogas.

The 15-Day Changes expand the ability to double-count the alleged climate benefits from biomass derived fuel. As revised, Section 95852.1 explicitly allows double-counting of emissions exemptions or emissions reductions attributed to the use of the fuel by allowing multiple entities to claim the emissions exemption or emissions reductions tied to the very same fuel molecules. The proposed regulations only prohibit multiple entities within the Cap-and-Invest Program or in a linked external GHG emissions trading system from claiming an emissions exemption to reduce a compliance obligation. It explicitly allows an entity to claim an emissions exemption for the use of biomass-derived fuel while also allowing the very same fuel to generate emissions reduction credits in other programs, including but not limited to the Low Carbon Fuel Standard and other pollution trading schemes. Not only does this double-counting increase the profitability of biomethane and other biomass-derived fuels, thus leading to environmental degradation and market distortion described above, but it also

undermines the environmental integrity of the Cap-and-Invest Program. CARB should update the proposed rule to prevent all double-counting of climate benefits. (15d-EJC-124.6)

Agency Response:

No changes were made in response to this comment. Please refer to the Agency Response to Comment R-1.3a and the Agency Response to 15-124-3 in the Response to Comments on the Environmental Impact Analysis.

R-1.4a Multiple Comments: Oppose Biogas and Biomethane Exemption

The continued and enhanced special treatment for livestock pollution will be detrimental to the environment and people living near dairies. The dairy biomethane pathway incentivizes dairy producers to increase manure production and its accompanying pollution. Communities near dairy farms will bear the brunt of this pollution. Large, industrial dairy operations in the San Joaquin Valley are disproportionately located near low-income and communities of color, especially Latino communities. Communities near dairy operations already experience cumulative environmental burdens, and CARB must not enact policies that incentivize increased pollution near their homes. CARB's changes to § 95852.1 are problematic because they will exempt dairy and biogas biomethane from compliance obligations for CO2 emissions released throughout the product's entire lifecycle, rather than solely CO2 emissions released during combustion. Throughout its various regulatory programs, CARB has ignored or created exemptions for emissions at different phases of biomethane's lifecycle. Without compliance obligations, producers will have no incentive to limit these CO2 emissions. This will inevitably result in increased CO2 levels near dairy operations and will be detrimental to the health and wellbeing of nearby communities.

Furthermore, the changes will enhance pollution allowances for biogas and biomethane production and use while still allowing biogas and biomethane producers to benefit from combustion fuels through pollution trading schemes like the Low Carbon Fuel Standard (LCFS). By seeking to streamline biomethane regulation between the Cap and Invest program and the LCFS program, CARB solidifies pathways for applicants to rotate between the programs and creates long-term market dependency on biomethane fuel. CARB does this by introducing § 95852.1.1(a), which creates an alternative exemption for CO2 emission compliance obligations for biomass-derived fuels when the applicant was previously enrolled in the LCFS biomethane pathway. California's Cap and Invest program should exclude the dairy biomethane pathways because of their detrimental impact on environmental justice communities. In the alternative, dairy biomethane producers should not qualify for CO2 emission exemptions, and regulations should include a plan to phase out crediting and exemptions for biomethane so that California

can achieve its climate goals without creating sacrifice zones near dairies. (45d-CRPE-46.3)

Comment:

As dairy plays a major role in California's economy, this industry has also contributed substantial impacts on the state's environment and public health. Methane emissions from dairy livestock produce severe health consequences for individuals in the Central Valley regions, where substantial pollution is already concentrated. Many Central Valley residents share deep concerns about the lack of comprehensive regulation for controlling emissions from this sector. Methane management is not only critical for reducing the impacts of climate change, but it is also essential for protecting the health of communities who suffer disproportionately from pollution from largescale dairy farms.

The current exemption from the compliance obligations for dairy and biogas biomethane under the program relies on the assumption that these emissions are inherently carbon neutral. However, this assumption does not consistently reflect the real-world emissions impacts associated with biomethane production and use. In the Central Valley, manure management, methane capture systems, processing, and transportation all contribute to additional emissions and environmental burdens that are often overlooked in regulatory frameworks. These impacts are not evenly distributed across the state; they are concentrated in rural Central Valley communities where large-scale industrial dairies operate near homes, schools, and farmworkers. By allowing exemptions from compliance obligations for biomethane, the proposed amendments risk creating incentives that expand industrial operations and streamline manure production. This would only further concentrate pollution impacting these communities. Instead of expanding exemptions as a way towards climate solutions, CARB needs to ensure that dairy biomethane pathways are evaluated based on their full cycle emissions and cumulative community impacts. CARB must prioritize real emissions reductions while protecting the health and wellbeing of frontline communities. For the Central Valley, this means ensuring that climate programs do not unintentionally incentivize pollution-intensive industries while leaving local residents with health consequences. Strengthening oversight of dairy biomethane and removing exemptions that undermine accountability will help ensure that California's climate policies meaningfully benefit communities who are most impacted by pollution. (45d-CEV-429.5)

Agency Response:

No changes were made in response to these comments. The rationale for providing compliance obligation exemptions to biofuels has been consistent since the start of the Program. See Agency Response to comment R-1.3a regarding lifecycle emissions and the exemption of biomass fuels.

Please refer to Agency Response 46-2 in the Response to Comments on the Environmental Impact Analysis.

The changes referenced in section 95852.1 clarify existing treatment of biomass-derived fuels use, with a minor change to ensure consistent treatment between biogenic CO2 from fuel combustion and biogenic CO2 from process emissions, as defined in section 95802, which arise from chemical transformation of the fuel such as during steam-methane reformation for hydrogen production. These process emissions occur at a covered facility and not at an upstream facility such as a livestock operation that produces biomass-derived fuel. The covered emissions exemption for biomass-derived fuel use also does not provide preferential treatment for livestock biomethane compared to other sources of biomass-derived fuels.

To reach statutory GHG reductions, including targets identified by SB 32 (Pavley, Stats. 2016, ch. 249) and Assembly Bill (AB) 1279 (Muratsuchi, Stats. 2022, ch. 337), significant reductions, including of methane, are needed this decade. Removing biofuel exemptions risks higher fossil fuel use in California, slowing the transition away from fossil fuels, which in turn would result in higher GHG emissions and worse air pollution.

R-1.4b Comment:

Biomass combustion creates greenhouse gases and pollutants that harm communities. Stop giving credit to accelerate the instate production of renewable gas, including biogas and biomethane, from organic waste which ignores the secondary costs to increase these sources for profit and the pollution that arises. (15d-Elizabeth-74.2)

Agency Response:

No changes were made in response to this comment. Please refer to Agency Response 74-1 in the Response to Comments on the Environmental Impact Analysis and the Agency Response to comment R-1.4a.

R-1.5 Multiple Comments: Include Explicit SAF Exemption

Second, we request clarifying language regarding the definition of exempt biomass-derived fuels as it relates to sustainable aviation fuel. The current regulatory text does not explicitly reference Sustainable Aviation Fuel or Alternative Jet Fuel. The definition that could potentially apply to SAF — “(§ 95852.2. Emissions Without a Compliance Obligation. (a)(9) The biogenic fraction of a fuel that is a co-product of the production of an exempt biomass-derived liquid hydrocarbon fuel)” — appears to limit eligibility to circumstances in which SAF is produced as a co-product, such as alongside renewable diesel at the same facility.

While this configuration was historically common, the aviation fuel market is evolving rapidly. Many facilities are now being designed or converted to produce SAF exclusively, without co-producing renewable diesel. Under the current wording, such facilities may not qualify as producing an exempt biomass-derived fuel. This outcome would create a structural distinction based solely on facility configuration rather than the fuel produced.

We respectfully request that CARB clarify that Sustainable Aviation Fuel qualifies as an exempt biomass-derived fuel irrespective of whether it is produced as a co-product by explicit recognition of SAF in the exempt produced fuels list. (45d-HIF-44.2)

Comment:

In alignment with the exemptions for other biomass-derived fuels under § 95852.2, we recommend that CARB staff extend this exemption to include all SAF. Currently, the regulation only exempts SAF when produced as a co-product of renewable diesel. This creates a narrow technical distinction that does not account for industry growth and change, especially as new facilities are being designed to solely produce SAF. Explicitly including SAF as an exempt fuel will ensure that the regulation remains future-proof and does not inadvertently penalize SAF-only production.

These two proposed changes offer small but vital distinctions for the SAF industry. By anticipating future challenges as the market expands, our recommendations refine the existing regulation without altering its core intent. Adding these specific details ensures the program remains adaptable as the SAF market grows and prevents minor technicalities from causing major disruptions. (45d-WE-273.2)

Comment:

Additionally, including low-carbon fuels (i.e., renewable naphtha and sustainable aviation fuel) on the list of excluded fuels from the fuel supplier obligation under Cap-and-Invest supports efficient low-carbon fuel production needed to meet ongoing demand in the on-road, aviation, and off-road transportation sectors. This approach is consistent with CARB's goal in the 2022 Scoping Plan Update to reduce petroleum fuel production and demand, while recognizing that low-carbon fuels will remain critical to meeting California's energy needs, given ongoing grid reliability challenges and extended timelines for electrical infrastructure upgrades. In addition, this approach provides regulatory certainty for in-state petroleum refineries that are already being modified to manufacture low-carbon fuels. WSPA stresses that it is critical for CARB to develop allocation methods and benchmarks for low-carbon fuels that support in-state fuels with low carbon intensity, as WSPA noted in Comment 3. (45d-WSPA-381.20)

Agency Response:

No changes have been made in response to these comments. Under MRR section 95121(a)(2), emissions reporting to MRR is not required for fuels that are

demonstrated to be solely used in aviation or maritime applications. Thus, sustainable aviation fuels, as long as they are used only as an aviation fuel, are already exempt from a compliance obligation in the Cap-and-Invest Program. Should a facility only produce sustainable aviation fuel with no other co-products, that sustainable aviation fuel would not have a compliance obligation. Should the treatment of aviation fuels change under MRR and subsequently hold a compliance obligation, a future rulemaking could align the treatment of biomass-derived liquid hydrocarbon fuels.

Concerning allocation and benchmarks for low carbon fuels, the proposed liquid hydrocarbon fuels benchmark includes total production volume of motor gasoline blendstocks, diesel, jet fuel, and hydrocarbon gas liquids, as well as any functionally equivalent non-fossil hydrocarbon fuels or non-fossil hydrocarbon blending components, such as renewable diesel, renewable naphtha, and sustainable aviation fuel.

R-1.6a Multiple Comments: Support for Renewable Fuels Exemption

RPMG would like to initially provide support for CARB's various amendments recognizing the changing nature of the fuels industry with respect to renewable liquid fuels, in general, and biorefining and Renewable Diesel specifically.

These changes will allow those facilities who have invested in transitioning to biofuel production the ability to no longer have a carbon obligation for renewable fuels. These key technical changes are needed to support the State's continued reliance on renewable liquid fuels to help meet its statutory climate goals. (45d-RPMG-297.1)

Comment:

In addition, Marathon agrees with CARB's proposal to ensure consistent treatment of biogenic emissions across the C&I program by exempting biogenic process emissions and biogenic combustion emissions generated in the production of renewable transportation fuels.(45d-M-324.3)

Comment:

RENEWABLE PROPANE ALIGNMENT WITH OTHER BIOGENIC ENERGY RESOURCES

As stated in our previous submissions (October 26, 2023; June 21, 2024; November 12, 2025), WPGA has requested that renewable propane and other biogenic energy resources developed as liquefied petroleum gas (LPG) fuels be explicitly exempted under 17 CCR § 95852.2 "Emissions without a Compliance Obligation."

We are deeply grateful that CARB has responded to our previous comment letters and recognized the need to update this code section to bring it into alignment with other carbon market compliance mechanisms across North America. The inclusion of § 95852.2(a)(7) “biomass-derived gases” and § 95852.2(a)(9) “biogenic fraction of a fuel that is a co-product of the production of an exempt biomass-derived liquid hydrocarbon fuel” adequately addresses this longstanding omission of equitable treatment of biogenic energy resources. This language, if adopted, would directly reduce the cost of compliance under C&I for renewable propane – decreasing the costs to both consumers and propane retailers while increasing the displacement of conventional propane for renewable forms in the non-transportation market. (45d-WPGA-401.1)

Comment:

Phillips 66 supports amendments proposed in the C&I regulation §95852.2 (a) (8) and (9) that allow exemption of CO2 emissions from biomass-derived motor gasoline blendstocks and biogenic fraction of fuel that is a co-product of the production of an exempt biomass-derived liquid hydrocarbon fuel.

… Biogenic CO2 exemptions for renewable fuels

Phillips 66 supports amendments proposed in the C&I regulation §95852.2 (a) (8) and (9) that allow exemption of CO2 emissions from biomass-derived motor gasoline blendstocks (e.g., renewable naphtha) and biogenic fraction of fuel that is a co-product of the production of an exempt biomass-derived liquid hydrocarbon fuel (e.g., renewable fuel gas). (45d-P66C-416.5)

> **Agency Response:**
> No changes were made in response to these comments. Staff appreciates the support for the Proposed Amendments.

R-1.6b Multiple Comments: Support for Renewable Fuels Exemptions

Exempt Biomass-Based Emissions: Neste appreciates the exemption for biomass-based fuels as proposed in the C&I regulation. (15d-N-77.4)

Comment:

III. SoCalGas appreciates CARB’s additional amendments for biomethane.

The 15-Day Amendments include some welcome changes regarding biomethane. The Amendments clarify that solid fuel biomass converted into biomethane are eligible for “Emissions Without a Compliance Obligation.” CARB also clarified that biomethane projects funded by NGS allowance consignment revenue that are approved by the CPUC by September 1 of this year may go forward. We appreciate this recognition that

projects submitted under the currently approved C&I Program are subject to the standard at that time. (15d-SCG-183.6)

Agency Response:

No change was made in response to these comments. Staff appreciate the support for the Proposed Amendments.

R-1.7 Comment:

We support CARB's proposal to recognize biomass-derived process CO2 emissions in §95852.1 by removing the reference to combustion, which has been interpreted to only apply an obligation exemption to biomass feeds consumed as fuel. This change is scientifically sound and particularly beneficial in incenting the use of biomass-derived fuels to further reduce conventional hydrogen plant emissions. (45d-AP-351.7)

Agency Response:

No changes were made in response to this comment. Staff appreciates the support for the Proposed Amendments.

R-2 Biomass-derived Fuel Requirements

R-2.1 Multiple Comments: Section 95852.1 Incentive Stacking

To ensure that this provision is appropriately scoped to regulatory compliance claims, we respectfully recommend a minor textual clarification to the final clause of the sentence in § 95852.1. Compliance Obligations for Biomass-Derived Fuels.

We recommend revising the language as follows (proposed insertion bold underlined for emphasis here):

...An entity claiming use of an exempt biomass-derived fuel must have sole ownership or contract rights to the biomass-derived fuel and any associated emissions exemption or emissions reductions attributed to the use of the fuel such that no other entity may claim an emissions exemption to reduce a compliance obligation or otherwise claim a reduction in ***regulatory*** *emissions associated with the use of the biomass-derived fuel.*

The addition of the word "regulatory" clarifies that the restriction applies to reductions claimed within regulatory compliance frameworks, rather than extending to voluntary market greenhouse gas reduction and accounting or international aviation programs, such as the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). This narrow clarification preserves CARB's intent to prevent double counting of compliance obligations under the Cap-and-Invest Program while avoiding unintended interference with separate emissions reporting systems.

Care should be taken to utilize the term “regulatory” emissions, as other compliance programs that are not regulatory (like CORSIA) could otherwise be implicated in the future. (45d-HIF-44.1)

Comment:

Additional Clarity Suggested for Section 95852.1

To ensure clarity regarding the use of renewable fuels, we recommend a minor but essential clarification. Given that SAF accounting varies significantly across international and voluntary GHG programs, we interpret § 95852.1 as a mechanism to prevent double counting. To protect from double counting, we recommend specifying that a compliance obligation may only be claimed against a regulatory compliance requirement. Explicitly, adding the term “regulatory” provides the necessary guardrails, especially as frameworks like the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), could be adopted in the future and potentially integrate with regulatory programs, like Cap-and-Invest. We are specifically proposing the term “regulatory” to avoid conflation with other “compliance” programs, like CORSIA. The suggested change is as follows, with the addition in bold and underlined text:

§ 95852.1: An entity claiming use of an exempt biomass-derived fuel must have sole ownership or contract rights to the biomass-derived fuel and any associated emissions exemption or emissions reductions attributed to the use of the fuel such that no other entity may claim an emissions exemption to reduce a compliance obligation or otherwise claim a [regulatory] reduction in emissions associated with the use of the biomass-derived fuel. (45d-WE-273.1)

Comment:

We suggest that the SB 1440 program should treat biomethane renewable fuel separately from dairy methane emissions reductions, as has been the precedent in California for at least 14 years. CARB’s Livestock Offset Protocol allows dairy digesters to sell renewable electricity and the associated renewable energy credits to a utility, while separately creating avoided methane carbon credits under the AB 32 Cap-and-Trade system. Likewise, CARB’s Low Carbon Fuel Standard (LCFS) allows a project to generate renewable fuels under the federal Renewable Fuels Standard, while separately selling avoided methane LCFS credits under that system. The proposed language would change this precedent, and essentially stop any SB 1440-based development of dairy digesters—which is contrary to the program’s goal.

Please note also that allowing dairy digesters to generate operational revenue by selling avoided methane credits to other parties will enable the SB 1440 program and California rate payers to procure dairy biomethane without needing to pay the high price generally associated with dairy biomethane. This proposal would not be a new or

untested approach. California already uses a similar structure under the CPUC's BioMAT program. Under BioMAT, an offset project can produce carbon-neutral Renewable Energy Certificates (RECs) that a utility can use for Renewable Portfolio Standard (RPS) compliance, while that same project can also generate offset credits under Cap-and-Invest. In other words, California has already recognized that when environmental attributes are clearly defined, they can be used for different regulatory purposes without double counting. Applying that same concept to RNG procurement under SB 1440 would better align state programs and help California meet its clean energy goals faster.

This approach is consistent with CARB's long-term climate strategy. CARB's 2022 Scoping Plan emphasizes the need to decarbonize the industrial sector and to shift biomethane away from transportation uses and toward end uses that are harder to electrify. The Scoping Plan specifically identifies implementation of biomethane procurement targets for investor-owned utilities under SB 1440 (Hueso) as a strategy to reduce GHG emissions from remaining pipeline gas and to reduce methane emissions from organic waste. Allowing utilities to procure RNG while preserving offset eligibility also advances the intent of SB 1383, which directs CARB to reduce short-lived climate pollutants, including methane from dairies, and to adopt policies and incentives that significantly increase the sustainable production and use of renewable gas, including through market-based compliance mechanisms.

To address this in this rulemaking process, MEW proposes the following modifications to the language in Section 95852.1 which would allow for offsets to be generated and contracted separately from the physical RNG:

> *An entity claiming use of an exempt biomass-derived fuel must have sole ownership or contract rights to the biomass-derived fuel and any associated emissions exemption ~~or emissions reductions~~ attributed to the use of the fuel for purposes of compliance with this subarticle, such that no other entity may claim an emissions exemption to reduce a compliance obligation ~~or otherwise claim a reduction in emissions associated with the use of the biomass-derived fuel~~. Exempt biomass-derived fuels may be associated with the generation of ARB Offset Credits, Renewable Energy Credits or Low Carbon Fuel Standard Credits.*

(45d-MEW-279.1)

Comment:

CARB should clarify in the final statement of reasons that this language is not intended to limit the gas utilities' use of Section 95852.1 when gas utilities have purchased renewable natural gas ("RNG") under the SB 1440 procurement program that is being implemented in CPUC Rulemaking, R.13-02-008. The CPUC is currently evaluating updates to the requirements for environmental attributes in recognition of the fact that different types of RNG have widely varying carbon negative attributes. Despite these

differences, utility and non-core customer procurement does not value the negative carbon attributes. In order for the utilities to cost effectively procure renewable natural gas, the utility should not be required to procure all of the negative carbon attributes. Rather, the utility should only be required to have “sole ownership” of the emission reductions associated with the fuel use. So long as the use of the fuel displaces fossil natural gas, another entity should be able to claim the negative carbon attributes associated with the feedstock. Natural gas displacement can be demonstrated when Cap & Invest obligated entity has a contract for biogas that was generated from one of the feedstocks listed in the Cap & Invest regulation.

This flexibility would help enable digester financing because a portion of the emission reductions associated with methane destruction (e.g., on a dairy farm) could be monetized through voluntary carbon reductions (e.g., Scope 3 emissions of milk providers purchasing milk from dairies that capture and destroy methane). (45d-AECADC-347.4)

Comment:

Section 95852.1 Should Clarify the Treatment of Carbon Negative Emissions. BAC appreciates the attempt to clarify ownership and contractual rights for exempt biomass-derived fuels, but the proposed amendments to section 95852.1 add significant confusion. The second sentence of this section now states that: “An entity claiming use of an exempt biomass-derived fuel must have sole ownership or contract rights to the biomass-derived fuel and any associated emissions exemption or emissions reductions attributed to the use of the fuel such that no other entity may claim an emissions exemption to reduce a compliance obligation or otherwise claim a reduction in emissions associated with the use of the biomass-derived fuel.” his language is quite confusing and seems to indicate that an entity claiming use of an exempt biomass-derived fuel must own or transfer all emissions reductions together. This does not make sense when biomass-derived fuels have a very wide range of carbon intensities, co-products and other benefits. It is especially concerning for biomass-derived fuels that are carbon negative on a lifecycle basis. With the exception of the LCFS, most carbon negative fuels sell carbon offset credits or obtain other incentives for the generation of emissions below zero. The amended version of section 95852.1 seems to indicate that a seller of biomass-derived fuels would have to give up the rights to all emissions reductions, rather than being able to stack incentives in proportion to the amount of emissions reductions. The amendments seem to recognize the value and the need to allow credit stacking by exempting biomass-derived fuels under the RPS and LCFS (last sentence of section 95852.1), but do not allow this for biomass-derived fuels used onsite or sold into other procurement programs and for other purposes. BAC urges CARB to clarify this section by making the following change to the amended version of section 95852.1:

> An entity claiming use of an exempt biomass-derived fuel must have sole ownership or contract rights to the biomass-derived fuel and any associated emissions exemption or emissions reductions attributed to the use of the fuel **for which the entity is claiming credit under this regulation.** ~~such that n~~**No** other entity may claim an emissions exemption to reduce a compliance obligation or otherwise claim a reduction in emissions associated with the **emissions reduction claimed under this regulation from the** use of the biomass-derived fuel. **An entity may treat carbon negative emissions separately from the emissions associated with the displacement of fossil fuel use, including by sale or transfer of the emissions reductions below zero carbon and the carbon reduction or sequestration values of associated co-products.**

Bifurcating the treatment of emissions reductions makes sense since most procurement programs, including the RPS, do not place a value on carbon negative emissions. BAC's proposed changes are consistent with how the CPUC has handled carbon negative emissions under the BioMAT (small-scale bioenergy) program required by Public Utilities Code section 399.20(f)(2). In the CPUC's decision establishing the rules for the BioMAT program, the CPUC clarified that all emissions reductions and other environmental benefits – except for carbon negative emissions – transfer with the purchase of the biopower since those benefits are associated with the displacement of fossil fuel based generation, which is the value captured by Renewable Energy Credits (RECs). The CPUC decision recognized that RECs under the RPS are intended to represent the benefits of displacing fossil fuels and do not account for the upstream emissions reductions that bioenergy from organic waste can provide and that can lead to carbon negative emissions.

BAC urges CARB to make the same clarification in section 95852.1 to continue to encourage the generation of carbon negative emissions and other benefits associated with biomass-derived fuels. (45d-BAC-349.3)

Comment:

Section 95852.1 Should Exempt Any Biomass-Derived Fuels that are Procured Pursuant to Statutory or Regulatory Procurement Requirements. The last sentence of section 95852.1 provides that "Exempt biomass-derived fuels may be associated with the generation of Renewable Energy Credits or Low Carbon Fuel Standard Credits." BAC urges CARB to expand this statement to include other statutory or regulatory procurement programs, including the pipeline biomethane procurement program established pursuant to SB 1440 (Hueso, 2018) and adopted in CPUC Decision 22-02-025,9 as well as future procurement programs that may target other sectors, such as hard-to-electrify sectors. Allowing exempt biomass-derived fuels to participate in any and all procurement programs will help to accelerate progress in meeting the SLCP

reduction requirements of SB 1383 and will help to decarbonize industrial, manufacturing and other hard-to-abate sectors.

BAC recommends amending the last sentence of section 95852.1 as follows:

> Exempt biomass-derived fuels may be associated with the generation of Renewable Energy Credits**, ~~or~~** Low Carbon Fuel Standard Credits**, compliance with the biomethane procurement program established pursuant to Public Utilities Code section 651, or any other procurement obligations required by state law or regulation for which biomass-derived fuels are eligible**.

(45d-BAC-349.4)

Comment:

As described in the RNG Coalition letter, biomethane provides a wide array of GHG benefits, including CO2 benefits from replacing fossil natural gas, as well as significant methane (CH4) reduction benefits. It is critical that the Cap-and-Invest program recognizes the wide array of GHG benefits from biomethane production and use, allowing crediting opportunities for both CO2 and CH4 benefits, and consistently accounts for those benefits across sectors and biomethane end uses.

The proposed amendments appropriately account for biomethane's GHG benefits if the fuel is used in the transportation sector or to produce renewable electricity, but do not similarly account for biomethane's full array of GHG benefits if the fuel is used in another sector, to decarbonize the gas system or industry, for example. CARB has identified shifting biomethane from the transportation sector to other sectors as a priority in the Scoping Plan, and in the Initial Statement of Reasons ("ISOR") for these proposed Cap-and-Invest amendments itself.1 In order to support that transition, Cap-and-Invest must provide consistent value for both CO2 and CH4benefits for biomethane across all end uses. We reinforce RNG Coalition's suggested amendments to § 95852.1, in order to ensure that any crediting regimes for industrial end uses, decarbonizing the gas system, carbon removal, or potential other uses that may emerge to support the state's priorities are treated similarly to the LCFS or Renewable Portfolio Standard under the program. Specifically, we urge the following changes to § 95852.1(c)(2)(C),:

...An entity claiming use of an exempt biomass-derived fuel must have sole ownership or contract rights to the biomass-derived fuel and any associated biogenic carbon dioxide emissions exemption ~~or emissions reductions~~ attributed to the use of the fuel for purposes of compliance with this subarticle, such that no other entity may claim an emissions exemption to reduce a Cap-and-Invest Regulation compliance obligation ~~or otherwise claim a reduction in emissions~~ associated with the use of the biomass-derived fuel. Exempt biomass-derived fuels may be associated with the generation of ARB Offset Credits, recognition in Renewable Gas Standard biomethane procurement, Renewable Identification Numbers, Renewable Energy Credits, ~~or~~ Low Carbon Fuel Standard Credits, or other approved crediting programs and protocols that support the state's building decarbonization, cement or other industrial decarbonization, carbon removal or other climate goals.

(45d-AA-364.4)

Comment:

CARB should revise § 95852.1 to protect federal RINs and voluntary market participation. WSPA seeks clarification and refinement of the language in § 95852.1 concerning the ownership and contract rights of exempt biomass-derived fuels. Specifically, WSPA is concerned that the provision stating "no other entity may claim an emissions exemption to reduce a compliance obligation or otherwise claim a reduction in emissions associated with the use of the biomass-derived fuel" is overly broad and creates significant regulatory uncertainty for market participants.

While WSPA appreciates that this section explicitly allows for the generation of Renewable Energy Credits and LCFS credits, the current phrasing inadvertently threatens the eligibility of these fuels for other critical programs. By prohibiting any other entity from "otherwise" claiming an emissions reduction, the regulation could be interpreted to preclude the generation of federal Renewable Identification Numbers (RINs) under the Renewable Fuel Standard. Furthermore, this language may interfere with voluntary commercial transactions in which GHG attributes are contractually transferred to private parties.

This proposed amendment creates a requirement that is more restrictive than necessary for maintaining the Cap-and-Invest program's integrity. Ambiguity risks disincentivizing biogenic fuel projects by limiting their participation in federal and voluntary markets, which are essential for the financial viability of lowcarbon fuel production. WSPA recommends that CARB narrow the scope of this provision to ensure it prohibits double-claiming only within the Cap-and-Invest program, thereby explicitly protecting the ability of entities to utilize federal RINs and engage in voluntary environmental attribute transactions. (45d-WSPA-381.22)

Comment:

Allow Offset Project Operators to participate in both the compliance offset program while simultaneously selling RNG under SB1440. Section 95852.1 of the Proposed Amendments includes modified text which would prohibit a company like CalBio from separately selling RNG to utilities while also being eligible to participate in the compliance offset program. The modified text states:

An entity has a compliance obligation for every metric ton of CO2e emissions from biomass-derived fuels as set forth in this subarticle, except for CO2 emissions from exempt biomass and exempt biomass derived fuels. An entity claiming use of an exempt biomass-derived fuel must have sole ownership or contract rights to the biomass-derived fuel and any associated emissions exemption or emissions reductions attributed to the use of the fuel such that no other entity may claim an emissions exemption to reduce a compliance obligation or otherwise claim a reduction in emissions associated with the use of the biomass-derived fuel. Exempt biomass-derived fuels may be associated with the generation of Renewable Energy Credits or Low Carbon Fuel Standard Credits.

This language creates a significant barrier to in-state livestock offset projects from being able to sell RNG in California's SB1440 utility biomethane procurement law1. Under that statute, the CPUC, in consultation with CARB, is required to consider adopting specific biomethane procurement targets for each gas corporation or utility (IOU) operating in California. The CPUC has since set a short- and medium-term target for procuring biomethane in Decision 22-02-0252:

- The short-term 2025 biomethane procurement target is 17.6 billion cubic feet of biomethane, which corresponds to 8 million tons of organic waste diverted annually from landfills. Each utility will be responsible for procuring a percentage of the total in accordance with its proportionate share of natural gas deliveries.

- The medium-term 2030 target for biomethane procurement is 72.8 billion cubic feet per year. This higher amount will help the state achieve its goal to reduce methane emissions 40 percent by 2030. It reflects approximately 12 percent of current residential and small business (known as "core gas customers") gas usage in 2020

SB 1440 establishes clear legislative intent for California gas utilities to procure biomethane as a tool to reduce methane emissions and displace fossil gas, while the Cap-and-Invest program is designed to create durable, financeable incentives for verified emissions reductions, including livestock methane destruction. Prohibiting utilities from procuring RNG that also generates offset credits creates a structural conflict between two state climate policies that otherwise should be aligned. Allowing RNG procurement to coexist with offset generation would harmonize these frameworks,

expand the pool of cost-effective methane reductions, and improve project economics for dairy digesters that require stacked revenue streams (gas sales plus environmental attributes) to make financial sense.

Importantly, this would not represent a novel or untested policy construct. California already recognizes an analogous structure under the CPUC's BioMAT program, where an offset project can generate carbon-neutral Renewable Energy Certificates (RECs) that utilities may use toward their Renewable Portfolio Standard (RPS) compliance, while the underlying project may also generate offset credits under Cap-and-Invest. In other words, the state has already accepted that properly defined environmental attributes can serve distinct regulatory purposes without constituting double counting. Extending that same conceptual framework to RNG procurement under SB 1440 would promote policy coherence, reduce regulatory friction, and accelerate achievement of California's short-lived climate pollutant and broader decarbonization goals.

This approach is also fully consistent with CARB's long-term climate strategy. The 2022 Scoping Plan3 explicitly emphasizes the need to decarbonize the industrial sector and to transition biomethane away from transportation uses toward sectors that are hard-to-electrify. In fact, one of the strategies for achieving success listed in the Scoping Plan recommends implementing "biomethane procurement targets for investor-owned utilities as specified in SB 1440 (Hueso, Chapter 739, Statutes of 2018) to reduce GHG emissions in remaining pipeline gas and reduce methane emissions from organic waste." Additionally, enabling utilities to procure RNG while preserving offset eligibility directly supports the goals of SB1383 which requires CARB to reduce emissions of short-lived climate pollutants including methane from dairies and in doing so "adopt policies and incentives to significantly increase the sustainable production and use of renewable gas" including through the use of market-based compliance mechanisms.

To address this in this rulemaking process, CalBio proposes the following modifications to the language in Section 95852.1 which would allow for offsets to be generated and contracted separately from the physical RNG:

An entity claiming use of an exempt biomass-derived fuel must have sole ownership or contract rights to the biomass-derived fuel and any associated emissions exemption ~~or emissions reductions~~ attributed to the use of the fuel for purposes of compliance with this subarticle, such that no other entity may claim an emissions exemption to reduce a compliance obligation ~~or otherwise claim a reduction in emissions associated with the use of the biomass-derived fuel~~. Exempt biomass-derived fuels may be associated with the generation of ARB Offset Credits, recognition in Renewable Gas Standard biomethane procurement, Renewable Identification Numbers, Renewable Energy Credits or Low Carbon Fuel Standard Credits.

Notably, the regulatory text as-written already allows for an exemption for biomass-derived fuels such as RNG to be claimed in the Low Carbon Fuel Standard (LCFS) program so such an exemption should also be granted for RNG which is produced

under the Cap and Invest program. CARB must recognize that while emissions exemptions should be allowed by the utilities, RNG produced from dairy projects create additional reductions, including carbon negative environmental attributes beyond that which are achieved by replacing fossil fuel with renewable fuel. In a pure replacement of fossil fuel with RNG, a “netting out” of the compliance obligation is realized by the utility. However, RNG derived from dairies are also responsible for achieving additional reductions due to the avoidance of methane which has 25x the global warming potential as CO2. These projects should be eligible to generate offset credits which would not otherwise be recognized by the utilities or any other party if the RNG is only allowed to be sold under SB1440 and the Cap & Invest regulatory language remains as written.

The CPUC released a decision on March 6, 2026, in which they recognized the importance of splitting environmental attributes into Renewable Thermal Certificates (RTCs) from those attributes of RNG which result in additional avoided methane benefits. The CPUC states:

Recognition of the value of environmental attributes of biomethane, such as for avoided methane emissions, for another voluntary or mandatory program is allowed and does not necessarily prevent the Cap-and-Invest Regulation from exempting biomethane combustion CO2 emissions due to their biogenic nature. For example, a livestock manure management project that produces biomethane may be credited in another program based on preventing methane emissions to the atmosphere, and the CO2 emissions from combusting the biomethane produced by the livestock manure management project could also be recognized as exempt from a Cap-and-Invest Regulation compliance obligation if the biomethane is used by a facility covered by the Cap-and-Invest Regulation.

CalBio is recommending CARB make it explicit that the Cap & Invest program will similarly allow the biogenic CO2 combustion emissions to be exempt while also recognizing the avoided methane benefits within the same regulation. It is important for CARB and the CPUC to establish a dialogue on this topic to ensure that California-based dairy digester projects are not inadvertently excluded from being able to sell RNG into the hard-to-electrify sectors, including utilities, while also be recognized for the emission reductions achieved within the state. Aligning Cap-and-Invest with SB 1440 procurement authority would therefore reinforce CARB’s overall policy direction which is to leverage biomethane to reduce methane at the source while strategically deploying it where it provides the greatest long-term decarbonization value for California. (45d-CBLLC-387.1)

Comment:

C&I Must Properly Recognize the GHG Benefits of RNG Projects

RNG provides one of the most important opportunities to simultaneously displace fossil carbon dioxide (CO2) and reduce organic waste methane (CH4) emissions in the near term. Both CO2 and CH4 benefits can be achieved through all forms of RNG production occurring commercially today—anaerobic digestion (AD) of material gathered from organic waste diversion, wastewater, or manure, and enhanced gas capture at landfills.

For RNG projects to be properly incentivized, it is critical that both the CO2 and CH4 benefits be properly recognized and that consistent accounting exist in C&I to align claims for these GHG reductions across all programmatic end uses. Section 95852.1 of the Proposed Amendments includes modified text which might unintentionally prohibit a company from making clear and consistent claims. The Draft Rule text states:

An entity claiming use of an exempt biomass-derived fuel must have sole ownership or contract rights to the biomass-derived fuel and any associated emissions exemption or emissions reductions attributed to the use of the fuel such that no other entity may claim an emissions exemption to reduce a compliance obligation or otherwise claim a reduction in emissions associated with the use of the biomass-derived fuel. Exempt biomass-derived fuels may be associated with the generation of Renewable Energy Credits or Low Carbon Fuel Standard Credits.

This language creates a significant barrier to RNG projects from being able to sell RNG to end uses that CARB's Scoping Plan has stated are important but are not explicitly recognized in the text above, for example into California's Renewable Gas Standard for utility procurement. We recommend the following modifications to the Draft Rule to better clarify how this alignment in claims should proceed:

> *An entity claiming use of an exempt biomass-derived fuel must have sole ownership or contract rights to the biomass-derived fuel and any associated biogenic carbon dioxide emissions exemption ~~or emissions reductions~~ attributed to the use of the fuel for purposes of compliance with this subarticle, such that no other entity may claim an emissions exemption to reduce a Cap-and-Invest Regulation compliance obligation ~~or otherwise claim a reduction in emissions~~ associated with the use of the biomass-derived fuel. Exempt biomass-derived fuels may be associated with the generation of ARB Offset Credits, recognition in Renewable Gas Standard biomethane procurement, Renewable Identification Numbers, Renewable Energy Credits, ~~or~~ Low Carbon Fuel Standard Credits, or other approved crediting programs and protocols that support the state's building decarbonization, cement or other industrial decarbonization, carbon removal or other climate goals.*

(45d-RNGC-390.2)

Comment:

RNG provides one of the most important opportunities to simultaneously displace fossil carbon dioxide (CO2) and reduce organic waste methane (CH4) emissions in the near

term. Both CO2 and CH4 benefits can be achieved through all forms of RNG production occurring commercially today—anaerobic digestion (AD) of material gathered from organic waste diversion, wastewater, or manure, and enhanced gas capture at landfills.

For RNG projects to be properly incentivized, it is critical that both the CO2 and CH4 benefits be properly recognized and that consistent accounting exist in C&I to align claims for these GHG reductions across all programmatic end uses. Section 95852.1 of the CARB Draft Language includes modified text which might unintentionally prohibit a company from making clear and consistent claims. The Draft Language text states:

An entity claiming use of an exempt biomass-derived fuel must have sole ownership or contract rights to the biomass-derived fuel and any associated emissions exemption or emissions reductions attributed to the use of the fuel such that no other entity may claim an emissions exemption to reduce a compliance obligation or otherwise claim a reduction in emissions associated with the use of the biomass-derived fuel. Exempt biomass-derived fuels may be associated with the generation of Renewable Energy Credits or Low Carbon Fuel Standard Credits.

This language creates a significant barrier to RNG projects from being able to sell RNG to end uses that CARB's Scoping Plan has stated are important but are not explicitly recognized in the text above, for example, into California's Renewable Gas Standard for utility procurement.[footnote: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB1440]

We recommend the following modifications to better clarify how this alignment in claims should proceed:

An entity claiming use of an exempt biomass-derived fuel must have sole ownership or contract rights to the biomass-derived fuel and any associated biogenic carbon dioxide emissions exemption ~~or emissions reductions~~ attributed to the use of the fuel for purposes of compliance with this subarticle, such that no other entity may claim an emissions exemption to reduce a Cap-and-Invest Regulation compliance obligation ~~or otherwise claim a reduction in emissions~~ associated with the use of the biomass-derived fuel. Exempt biomass-derived fuels may be associated with the generation of ARB Offset Credits, recognition in Renewable Gas Standard biomethane procurement, Renewable Identification Numbers, Renewable Energy Credits or Low Carbon Fuel Standard Credits.

(45d-AC-396.18)

Comment:

Clarify eligibility of claiming and recognizing full value of biomethane benefits. ABC requests clarification that biogenic CO_2 emissions associated with qualified biomethane remain eligible for exemption under the Cap-and-Invest framework when properly documented through contractual delivery pathways and recognized fuel tracking systems. Clear treatment of biogenic carbon is essential to avoid inconsistent accounting of the same fuel across California climate programs.

Biomethane projects deliver multiple greenhouse gas (GHG) benefits, including CO_2 benefits from displacing fossil natural gas as well as significant methane (CH_4) reduction benefits from capturing and utilizing waste methane. ABC requests confirmation that the MRR and Cap-and-Invest framework will continue to recognize the full suite of climate benefits associated with biomethane production and use and will not inadvertently limit the ability of projects to participate in other legitimate environmental markets or crediting programs.

ABC notes that the proposed amendments appropriately recognize biomethane's GHG benefits when the fuel is used in the transportation sector or to generate renewable electricity. However, the framework does not appear to provide equivalent recognition of biomethane's full climate benefits when the fuel is used in other sectors, such as for industrial decarbonization or to reduce emissions within the natural gas system.

This distinction may create unintended barriers to broader deployment of biomethane across sectors. California has identified expanding the use of biomethane beyond transportation as a priority in the Scoping Plan and in the Initial Statement of Reasons (ISOR) for these proposed amendments. To support that transition, the Cap-and-Invest program should ensure consistent recognition of biomethane's CO_2 and CH_4 benefits regardless of end use.

ABC therefore supports clarifying amendments to §95852.1 to ensure that emerging crediting approaches for industrial decarbonization, gas system decarbonization, carbon removal, and other applications are treated consistently with existing programs such as the Low Carbon Fuel Standard (LCFS) and the Renewable Portfolio Standard (RPS). (45d-ABC-406.3)

Agency Response:

Changes were made in response to these comments. Section 95852.1 was updated to remove text added in the 45-day proposal that limited a compliance obligation exemption for the use of biomass-derived fuels to only the covered entity claiming the exemption in the Cap-and-Invest Program, such that no other entity could otherwise claim emissions reductions for that same fuel use, except for the generation of RECs or Low Carbon Fuel Standard credits. The updated text removed this prohibition and clarified that no other entity may claim a covered emissions exemption for that same fuel use in the Cap-and-Invest Program or in a linked external GHG emissions trading system. This change is responsive to the commenter's suggestions and protects the environmental integrity of the Cap-and-Invest Program and any linked emissions trading systems by prohibiting the double-claiming of covered emissions exemptions that lower a covered entity's compliance obligation. Concurrently, this change allows entities claiming an exemption from a Cap-and-Invest Program compliance

obligation for use of biomass-derived fuels to also participate in unlinked external incentive programs, such as an industrial manufacturing facility that procures biomethane to lower its Cap-and-Invest compliance obligation while simultaneously participating in a “buy clean” procurement program for their low-carbon product. This change also allows entities to claim environmental benefits in a program outside of Cap-and-Invest for avoided methane emissions associated with a volume of biomethane combusted by a covered entity. This change clarifies the regulatory text and appropriately recognizes incentive stacking from complementary programs to reduce GHG emissions through the increased use of biomass-derived fuels. Overall, incentive stacking work in tandem with the carbon price signal imparted by Cap-and-Invest to incentivize increased deployment of biomass-derived fuel use in support of deep decarbonization strategies needed to achieve California’s climate goals.

R-2.2 Multiple Comments: Support for Biomethane Eligibility Changes

We appreciate proposed amendments to clarify biomethane eligibility and the ability for covered entities to claim the associated biogenic CO_2 benefit. These changes provide important regulatory certainty and help ensure that biomethane used in California is appropriately recognized as a biomass-derived fuel under the program. (45d-AA-364.2)

Comment:

Among the proposed changes to biomethane policy, three improvements are particularly notable. First, the proposed regulation updates the regulation to consistently exempt CO2 process emissions from biomass-derived fuels. This adjustment treats all biomethane-origin CO2 consistently, regardless of whether it derives from a chemical reaction or combustion. This exemption removes a significant barrier in the conversion of biomethane to hydrogen and provides important regulatory support for SB 1440 implementation and gasification projects. Second, the proposed regulation clarifies that the three-year eligibility period for biomethane is defined as “the 36 months immediately before the first date of fuel delivery under contract.” This clarification provides needed regulatory certainty for project planning, which is critical for project financing, reduces potential for disputes about the appropriate measurement windows, and simplifies the accounting associated with incremental capacity cost calculations. Third, the proposed rule expands the definition of “useful energy transfer” to include “useful output,” which encompasses both energy transfer and the use of biomethane as a chemical product feedstock. This change promotes the development of biomethane-to-hydrogen markets, opens opportunities for chemical manufacturing applications, such as ammonia and methanol production, strengthens support for SB 1440 gasification and pyrolysis initiatives, and provides important pathways for dairy digester operators. (45d-SCG-425.3)

Agency Response:

No changes were made in response to these comments. Staff appreciate the commenters' support for the Proposed Amendments.

R-2.3a Multiple Comments: Strike Section 95852.1.1 or Eliminate complexities

The proposed requirements for biomass-derived fuels are premature. Until CARB provides clear, simplified pathways for verifying the carbon intensity of diverse biomass feedstocks, these reporting mandates will result in inconsistent data and excessive third-party verification costs.

... Align biomass reporting with existing federal (EPA) standards to reduce duplicative reporting burdens.(45d-Vidal-233.2)

Comment:

However, we have concerns with implementation of the provisions in § 95852.1.1, especially the proposed amendments in § 95852.1.1(a)(2)(C), which would limit eligibility for biomethane injected into a common carrier pipeline based on the annual average amount of fuel delivered to California over the previous 36 months. Tying eligibility to a fixed three-year historical average is arbitrary and creates practical implementation challenges that do not reflect how biomethane markets and production operate in practice.

Biomethane production volumes fluctuate over time due to operational factors that are largely outside a producer's control, including feedstock variability, digester maintenance cycles, pipeline outages, and seasonal production patterns. A three-year historical baseline could therefore under-represent a facility's actual available production in any given year and artificially limit eligible volumes. Additionally, the provision would restrict market flexibility for producers whose gas may be delivered to different jurisdictions over time. For example, a project that routed volumes to another Clean Fuel Program market (e.g., Oregon or Washington) in one year could be prevented from directing biomethane into California in a subsequent year, because the three-year historical average would cap eligible volumes below actual production. This constraint could unintentionally discourage participation in California markets and create unnecessary administrative complexity for projects operating in interconnected North American gas markets.

Finally, we note that the same 36-month historical averaging concept appears in the proposed manufacturing decarbonization incentive allocation provisions, which could create parallel implementation problems across multiple program elements and compound compliance uncertainty. We agree with the RNG Coalition that the whole of § 95852.1.1 is unnecessary and adds administrative burden and complexity that is unwarranted based on market conditions and industry practice. We support striking §

95852.1.1 in its entirety. This would simplify implementation and improve consistency with the way biomethane markets function.

If nothing else, we urge changes to the 36-month average reporting requirements in § 95852.1.1(a)(2)(C) to allow a facility's eligible share of biomethane to be determined based on the percentage of its total production delivered to California in the prior year, applied to the facility's actual production going forward. Using a prior-year percentage would allow the program to accommodate natural production variability, operational disruptions, and stored or banked gas volumes without locking projects into an outdated baseline. (45d-AA-364.3)

Comment:

As described in the RNG Coalition letter, biomethane provides a wide array of GHG benefits, including CO2 benefits from replacing fossil natural gas, as well as significant methane (CH4) reduction benefits. It is critical that the Cap-and-Invest program recognizes the wide array of GHG benefits from biomethane production and use, allowing crediting opportunities for both CO2 and CH4 benefits, and consistently accounts for those benefits across sectors and biomethane end uses.

The proposed amendments appropriately account for biomethane's GHG benefits if the fuel is used in the transportation sector or to produce renewable electricity, but do not similarly account for biomethane's full array of GHG benefits if the fuel is used in another sector, to decarbonize the gas system or industry, for example. CARB has identified shifting biomethane from the transportation sector to other sectors as a priority in the Scoping Plan, and in the Initial Statement of Reasons ("ISOR") for these proposed Cap-and-Invest amendments itself.

In order to support that transition, Cap-and-Invest must provide consistent value for both CO2 and CH4benefits for biomethane across all end uses. We reinforce RNG Coalition's suggested amendments to §95852.1, in order to ensure that any crediting regimes for industrial end uses, decarbonizing the gas system, carbon removal, or potential other uses that may emerge to support the state's priorities are treated similarly to the LCFS or Renewable Portfolio Standard under the program. Specifically, we urge the following changes to § 95852.1(c)(2)(C),:

...An entity claiming use of an exempt biomass-derived fuel must have sole ownership or contract rights to the biomass-derived fuel and any associated biogenic carbon dioxide emissions exemption ~~or emissions reductions~~ attributed to the use of the fuel for purposes of compliance with this subarticle, such that no other entity may claim an emissions exemption to reduce a Cap-and-Invest Regulation compliance obligation ~~or otherwise claim a reduction in emissions~~ associated with the use of the biomass-derived fuel. Exempt biomass-derived fuels may be associated with the generation of ARB Offset Credits, recognition in Renewable Gas Standard biomethane procurement, Renewable Identification Numbers, Renewable Energy Credits, ~~or~~ Low Carbon Fuel Standard Credits, or other approved crediting programs and protocols that support the state's building decarbonization, cement or other industrial decarbonization, carbon removal or other climate goals.

(45d-AA-364.4)

Comment:

Eliminate Unnecessary Complexity in Determining C&I RNG Eligibility

As explained above, the C&I program has not yet served as a significant incentive for new RNG development or use, primarily due to the low level of the carbon price in the program relative to the GHG abatement cost for RNG projects and misaligned accounting ignoring some of the key benefits. However, another significant barrier to RNG use in the program has been the unnecessary complexity of the eligibility requirement language now found in section 95852.1.1(a)(1)-(5) of the Draft Rule. The ISOR summarizes this problem appropriately when it states that, "Due to uncertainty expressed by covered entities, implementation of section 95852.1.1(a) has required substantial staff time to ensure the provisions are consistently implemented. Clarifications are proposed throughout section 95852.1.1(a) based on implementation experience and aim to provide certainty for entities regarding eligibility for emissions exemptions and to reduce administrative burden."

We recommend that, if CARB truly wants to eliminate administrative burden and unnecessary complexity, the entire section 95852.1.1 should be struck. There is no need to retain this section for the following reasons:

• CARB is actively looking for RNG producers to be nimble and to shift RNG between end uses over time to the sectors that are hardest to electrify. Requiring a period of non-production before any such shift is simply impossible for RNG facilities, which are not financially viable without ongoing revenues for the sale of their gas and associated recognition of environmental benefits.

• Empirically, there is no demonstrated problem with non-additional RNG supply being available in significant quantities to divert/shuffle toward C&I end uses, especially at low carbon prices.

• No other renewable fuel or greenhouse gas abatement strategy is subject to the same tests in the C&I program, even though the same theoretical arguments could be made about many other strategies that reduce compliance obligations in C&I.

• Three-years (and/or 36 months) is an arbitrary and capricious standard not well justified by the ISOR or historical regulatory precedent. No RNG project will ever cease operation intentionally just to become eligible to receive C&I incentives, it has always been very unclear as to why a three-year period hypothetically helps eliminate any perverse fuel reshuffling incentives.

If this unnecessary complexity in this section can be eliminated it more likely that consumers of gas will explore RNG as a compliance option and CARB's strategy to shift the RNG resource between hard-to-electrify end uses over time is more likely to be achieved. (45d-RNGC-390.9)

Comment:

Ensure eligibility for biomethane as an exempt biomass-derived fuel. Page 31 of Appendix A-1 of the Proposed Amendments states that "Non-exempt Biomass derived CO_2 means CO_2 emissions resulting from the combustion of fuel not listed under section 95852.2(a), or that is not verifiable under section 95131(i) of the MRR."

ABC urges CARB to ensure that the eligibility criteria for biomethane as an exempt biomass-derived fuel are workable for contract-based RNG transactions. These transactions reflect how biomethane is currently supplied and tracked in existing markets, including book-and-claim accounting systems used under the Renewable Fuel Standard (RFS) and Low Carbon Fuel Standard (LCFS).

Without clear recognition of these established accounting approaches, the proposed rule risks unintentionally treating emissions from biomethane as covered fossil emissions requiring allowance purchases, even though the same fuel is incentivized under the LCFS due to its low carbon intensity. (45d-ABC-406.2)

Comment:

Reduce complexity in eligibility determination and clarify historical use requirement.

ABC would like to express concern with the proposed eligibility framework detailed in section 95852.2 and 95131(i) of the MRR, with particular attention to the criteria detailed in §95852.1.1. As written, the framework introduces unnecessary complexity and may create unintended barriers to the use of biomass-derived fuels in California. In

particular, the provision tying eligibility to the “annual average amount of fuel used in California over the previous three years” raises practical questions for suppliers whose fuel may serve multiple markets over time.

The proposal’s reliance on a 36-month historical period for determining eligibility could create uncertainty for projects whose offtake arrangements change over time, including shifts in operational performance and between California transportation markets and other end uses. Biomethane production volumes fluctuate over time due to operational factors that are largely outside a producer’s control, including feedstock variability, digester maintenance cycles, pipeline outages, and seasonal production patterns. A three-year historical baseline could therefore under-represent a facility’s actual available production in any given year and artificially limit eligible volumes. In addition, by linking eligibility for exempt biomass treatment to historical fuel use within California specifically, the proposed framework may unintentionally disadvantage projects that previously served other markets, or end uses but later contract to deliver fuel into California. In practice, this approach could limit the ability of suppliers to respond to changing market conditions and may discourage participation in California programs if doing so creates additional compliance uncertainty. Finally, ABC notes that the same 36-month historical averaging concept appears in the proposed manufacturing decarbonization incentive allocation provisions, which could create parallel implementation problems across multiple program elements and compound compliance uncertainty.

ABC recommends that CARB clarify the intent of this provision or striking § 95852.1.1 in its entirety and consider whether eligibility for exempt biomass treatment should focus on the characteristics of the fuel and the project producing it, rather than the geographic location or end use of the fuel during a prior historical period. This would simplify implementation and improve consistency with the way biomethane markets function. If nothing else, ABC recommends changes to the 36-month average reporting requirements in § 95852.1.1(a)(2)(C) to allow a facility’s eligible share of biomethane to be determined based on the percentage of its total production delivered to California in the prior year, applied to the facility’s actual production going forward. Using a prior-year percentage would allow the program to accommodate natural production variability, operational disruptions, and stored or banked gas volumes without locking projects into an outdated baseline. (45d-ABC-406.4)

Agency Response:

No Changes were made in response to these comments. The Proposed Amendments in section 95852.1.1(a) are based on implementation experience and aim to provide certainty for entities regarding eligibility for emissions exemptions for biogas and biomethane and to reduce administrative burden. Clarifying and updating the biomethane exemption ensures there are clear

requirements for this exemption from a compliance obligation and is also aligned with the 2022 Scoping Plan, which indicated that biomethane currently used in California's transportation sector may need to transition to beneficial use in hard-to-decarbonize industrial sectors long-term.

The commenters claim that the proposed 36-month criterion for historic biomass-derived fuel use may unintentionally under-represent a facility's actual available production, or that it implies that CARB requires non-operation of sources in order for fuel to be eligible for exemption. The Proposed Amendments are intended to support continued biomethane supply which also provides more methane reductions. The 36-month baseline clarifies the application and implementation of the existing 3-year baseline in sections 95852.1.1(a)(2)(A) and (B) of the Regulation effective April 1, 2019. As under the pre-existing Regulation, the 36-month baseline serves to establish production volumes, and does not require non-operation of a production facility.

Changes were made in response to these comments related to MDI allocation. The 36-month criterion for historic biomass-derived fuel use was removed from section 95891(g)(2)(A), instead specifying that the biomass-derived fuel must be used to reduce the facility's covered emissions. Further changes add capital costs for biomass-derived fuels use and methane emissions reduction projects as eligible expenditure for MDI allocation, add a spending limit of 50% for the costs of purchasing biomass-derived fuel, and exclude fuels that are partially exempt from a compliance obligation due to the fuel being only partially biogenic. The historic baseline for in-state biomass-derived fuel use as applied to MDI allocation is not necessary, as any out-of-state biomethane use covered by MDI allowance value still must meet all applicable requirements to be exempt from a compliance obligation, including the provisions in section 95852.1.1. Taken together, these changes incentivize reductions in facility covered emissions, including both CO2 and methane, and align the incentive for biomass-derived fuel uses with the practical economics and deployment patterns of both solid biomass-derived fuels and gaseous fuels, which is accessible to facilities connected to the natural gas transmission and distribution network provided that the biomethane is either directly delivered or injected into a common carrier pipeline in North America.

Concerning Section 95131(i) of MRR, please refer to Agency Response to comments B-13 and I-3 in the MRR FSOR.

Changes were made in response to these comments to section 95852.1. Section 95852.1 see Agency Response to comment R-2.1.

R-2.3b Multiple Comments: Strike 95852.1.1 or Eliminate complexities

Eliminate Unnecessary Complexity in Determining C&I RNG Eligibility

To reduce administrative burden and streamline RNG reporting, CARB should remove Section 95852.1.1 from the rule. Eliminating this unnecessary complexity would make RNG a more attractive compliance option for fuel end users and better support CARB's long-term strategy of reallocating RNG resources toward hard-to-electrify end uses. (15-AA-85.4)

Comment:

At the same time, ABC encourages CARB to reduce unnecessary complexity in the determination of RNG eligibility and recommends reconsideration or removal of Section 95852.1.1. Streamlining eligibility criteria helps accelerate deployment of RNG in sectors where needed most and is consistent with the broader goals of the Cap-and-Invest Program to drive cost-effective emissions reductions. (15d-ABC-95.6)

Agency Response:

No changes were made in response to these comments. Refer to the Agency Response to R-2.3a on changes to section 95852.1.1.

R-2.4 Comment:

Finally, we believe proposed sections 95852.1 and 95852.1.1 require some clarification. While section 95852.1.1 appears to have previously applied only to biogas and biomethane, ambiguous language in proposed section 95852.1 could be interpreted to apply to all biomass-derived fuels. Additionally, language in the Initial Statement of Reasons makes it apparent that 95852.1 applies only to biogas and biomethane. Assuming 95852.1 and 95852.1.1 does apply only to biogas and biomethane, we recommend CARB adjust language in section 95852.1 to clarify that the section and its requirements only apply to biogas and biomethane. (45d-GE-399.5)

Agency Response:

No changes were made in response to this comment. Section 95852.1 applies to all biomass-derived fuels while section 95852.1.1 refers to biogas and biomethane specifically. The proposed provisions specify that biomass-derived fuels use is only exempt from a compliance obligation if it meets the requirements of subsections 95852.1(a)-(c). Section 95852.1(b) states the "The fuel meets the *applicable* requirements of section 95852.1.1" (emphasis added); Section 95852.1.1 only applies to biogas and biomethane specifically, therefore the requirements therein only apply to biogas and biomethane.

R-2.5a Comment:

Section 95852.1 Compliance Obligations for Biomass Derived Fuels

Ag Council supports expanding the eligibility of agricultural wastes and byproducts that can be used as biomass-derived fuels. While we recognize the importance of reporting unintended emissions, reporting requirements should be structured so they do not create barriers for investors seeking to maintain and develop biomass energy projects. Increased use of biomass-derived fuels has the potential to reduce reliance on fossil fuels and contribute to the state's climate goals. In addition, further efforts should be made to promote biomass solutions that support the development of a circular economy within the Cap & Invest program. Expanding these opportunities could provide valuable outlets for agricultural waste during periods of economic stress while helping drive meaningful transformation across the agricultural sector. (45d-ACC-433.2)

Agency response:

Changes were made in response to this comment. Concerning the manufacturing decarbonization incentive and the 36-month criterion see Agency Response to comment R-2.3a.

Staff appreciates the support for the Proposed Amendments concerning the use of agricultural waste and residues used for biomass-derived fuels.

R-2.5b Comment:

Ag Council and Dairy Institute support expanding the eligibility of agricultural wastes and byproducts that can be used as biomass-derived fuels. While we recognize the importance of reporting unintended emissions, reporting requirements should be structured so they do not create barriers for investors seeking to maintain and develop biomass energy projects. Increased use of biomass-derived fuels has the potential to reduce reliance on fossil fuels and contribute to the state's climate goals. In addition, further efforts should be made to promote biomass solutions that support the development of a circular economy within the Cap & Invest program. Expanding these opportunities could provide valuable outlets for agricultural waste during periods of economic stress while helping drive meaningful transformation across the agricultural sector. (15d-ACC-102.2)

Agency response:

No changes were made in response to this comment. See Agency Response to comment R-2.5a.

R-2.6 Comment:

Adding language to Section 95852.2 Emissions Without a Compliance Obligation would clarify biomethane eligibility. Section 95852.2(a)(1)-(5) as amended by the proposed regulation appears to pertain to use of solid fuel biomass energy. However, if any of these feedstocks are converted into biomethane, they should be eligible for the exemption of emissions under this section. Section 95852.2(a)(7)(A) as proposed

includes biomethane and biogas from "[a]ll animal waste, plant waste, and other organic waste," which implies that the waste resources identified in Section 95852.2(a)(1)-(5) would also comply as "plant waste" and/or "other organic waste." The regulatory language should clarify this by adding the following to proposed section 95852.2(a)(7):

"(C) Feedstocks eligible in Section 95852.2(a)(1)-(5)." (45d-SCG-425.5)

Agency Response:

No changes were made in response to this comment. Section 95852.2(a)(7) as proposed specifies the scope of eligible organic waste feedstocks for the production of exempt biomethane, biogas, other biomass-derived gases, and other biomass-derived gases in compressed or liquefied forms. Solid biomass-derived fuels listed in section 95852.2(a)(1)-(5) from waste sources are clearly covered by the feedstock criteria in section 95852.2(a)(7) and the definitions for "biogas" and "biomass" in section 95802.

R-2.7 Multiple Comments: Support for 15 Day Changes – Section 95852.1

On behalf of Highly Innovative Fuels, we appreciate the California Air Resources Board's continued work on the Cap-and-Invest Program and, in particular, the recent updates to § 95852.1, addressing exempt biomass-derived fuels. In our earlier comments, we highlighted the importance of ensuring that this provision was clearly scoped to regulatory compliance claims so that it would not create unintended ambiguity for other emissions accounting contexts. We appreciate that the adopted language now provides greater clarity by specifying that no other entity may claim an emissions exemption to reduce a compliance obligation in the Cap-and-Invest Program or in a linked external GHG emissions trading system. This is a helpful and meaningful clarification that improves regulatory certainty while preserving the integrity of the program.

We commend CARB staff's responsiveness to stakeholder input and their targeted revision to strengthen the clarity of the regulation without undermining its environmental safeguards. Thank you for your continued leadership and for your consideration of these comments. (15d-HIF-45.1)

Comment:

Support Changes to Section 95852.1 Clarifying Compliance Obligation for Biomass-Derived Fuels Amp supports the clarifying text in Section 95852.1, which ensures that CO2 and methane benefits from biomethane projects are properly recognized, while preventing double counting of biogenic CO2. These clarifications align with the program's broader objective of recognizing the full GHG benefits of RNG across end uses. (15-AA-85.2)

Comment:

ABC supports CARB's proposed updates to Section 95852.1 to clarify the compliance obligations for biomass-derived fuels. Clear and consistent treatment of these fuels is critical to ensuring that regulated entities accurately account for emissions and can confidently invest in low-carbon alternatives. Improved clarity in this section will help reduce uncertainty and support broader development of biomass-derived fuels, including renewable natural gas, within the Cap-and-Invest program. (15d-ABC-95.3)

Comment:

We Support Changes to Section 95852.1 Clarifying Compliance Obligation for Biomass-Derived Fuels

For RNG projects to be properly incentivized, it is critical that both the carbon dioxide (CO2) and methane (CH4) benefits be properly recognized and that consistent accounting exist in C&I to align claims for these GHG reductions across all programmatic end uses. Section 95852.1 of the 15-Day Package includes modified text that improves program participants' ability to make proper statements around RNG use and ensures no double-counting of RNG biogenic CO2 benefits within the C&I Program. (15d-RNGC-105.2)

Comment:

The 15-Day language would modify the requirements for "biomass-derived" fuels to be claimed as an emission without a compliance obligation (i.e., as set forth in proposed amendments to Section 95852.1). The revised language would state that:

"An entity has a compliance obligation for every metric ton of CO2e emissions from biomass-derived fuels as set forth in this subarticle, except for CO2 emissions from exempt biomass and exempt biomass-derived fuels. An entity claiming use of an exempt biomass-derived fuel must have sole ownership or contract rights to the biomass-derived fuel and any associated emissions exemption or emissions reductions attributed to the use of the fuel such that no other entity may claim an emissions exemption to reduce a compliance obligation in the Cap-and-Invest Program or in a linked external GHG emissions trading system."

Dairy Cares appreciates these revisions that clarify and simplify this provision in the regulation. We understand that the intent of this language is to ensure that only one entity is able to claim an exemption for the use of biomass-derived fuels under the Cap-and-Invest regulation. We also understand that this language does not preclude the producer of the fuel from seeking offset credits under a compliance offset protocol for emission reductions attributable to the feedstock. For example, it is our understanding that a dairy can develop an offset project for methane destruction derived from manure

capture at the dairy and also sell the upgraded biogas to a covered entity which is ultimately used to claim an exemption from the Cap-and-Invest regulation. We would appreciate CARB's confirmation of this understanding in the Final Statement of Reasons. (15d-DC-120.3)

Comment:

First, the District appreciates the numerous changes in the Regulations that effect covered entities that use biomass derived fuels. We note that it is important that these entities be allowed to participate in unlinked incentive programs, and as such, this is a welcome and important clarification. (15d-PCAPCD-155.2)

Comment:

The draft regulation as revised in the 15-day language proposes to modify the requirements for "biomass-derived" fuels to be claimed as exempt from incurring a compliance obligation (i.e., as set forth in proposed amendments to Section 95852.1). The revised language states that: An entity has a compliance obligation for every metric ton of CO2e emissions from biomass-derived fuels as set forth in this subarticle, except for CO2 emissions from exempt biomass and exempt biomass-derived fuels. An entity claiming use of an exempt biomass-derived fuel must have sole ownership or contract rights to the biomass-derived fuel and any associated emissions exemption or emissions reductions attributed to the use of the fuel such that no other entity may claim an emissions exemption to reduce a compliance obligation in the Cap-and-Invest Program or in a linked external GHG emissions trading system."

CalBio appreciates these revisions that clarify and simplify this provision in the Cap-and-Invest regulation. We understand that the intent of this language is to ensure that only one entity is able to claim an exemption for the use of biomass-derived fuels under the Cap-and-Invest regulation. We also understand that this language does not preclude the producer of the fuel from seeking offset credits under a compliance offset protocol for emission reductions attributable to the feedstock. For example, it is our understanding that a dairy can develop an offset project for methane destruction derived from manure capture at the dairy and also sell the upgraded biogas to a covered entity which is ultimately used to claim an exemption from the Cap-and-Invest regulation. We would appreciate CARB's confirmation of this understanding in the Final Statement of Reasons. (15d-CBLLC-159.1)

Agency Response:

No changes were made in response to these comments. Staff appreciate the support for the proposed changes.

The commentors also request confirmation that the proposed language does not preclude a producer of an exempt fuel from seeking offset credits under a

compliance offset protocol for emission reductions attributable to the feedstock. CARB confirms that this is accurate.

R-2.8a Multiple Comments: 1383 Requirements

The amendments clarify rules for biomass-derived fuel exemptions, which is helpful. However, the proposal does not explicitly recognize the following as eligible decarbonization infrastructure for future incentive allocations:

 Anaerobic digestion

 Co-digestion at wastewater treatment plants

 Landfill gas-to-energy upgrades

 Composting operations that reduce methane emissions

 Advanced thermal conversion technologies that process organic waste and are capable of demonstrating greater methane reductions than composting operations.

Public Works recommends CARB:

 Explicitly identify that organic waste processing facilities creating renewable energy are eligible for future Cap-and-Invest-supported incentives.

 Ensure that local jurisdiction projects can participate in both Cap-and-Invest exemptions and external incentive programs without penalty.

 Consider establishing a dedicated organic waste processing sector carve-out within future allowance-based incentive programs.

These steps would align the Cap-and-Invest program with the State's SB 1383 methane reduction priorities.(15d-LADPW-28.2)

Comment:

SB 1383 mandates a 75 percent reduction in organic waste disposal and 20 percent edible food recovery Statewide. Meeting these requirements requires substantial capital investment of up to $1 billion Statewide in:

 Organic waste collection systems

 Composting facilities

 Anaerobic digesters

 Transfer and preprocessing infrastructure, including high diversion organic waste processing facilities

 Advanced thermal conversion facilities processing organic waste

 Renewable fuel and electricity production from organic waste

The Cap-and-Invest amendments acknowledge the importance of decarbonization but do not integrate SB 1383 infrastructure needs into the program's budget planning.

Public Works recommends CARB:

 Incorporate SB 1383 infrastructure needs into future Cap-and-Invest budget

allocations.

 Prioritize organic waste-related projects in future funding cycles.

 Coordinate with CalRecycle to ensure consistent Statewide planning.

This alignment is essential to achieving the State's SB 1383 goals. (15d-LACDPW-28.3)

Comment:

Given the scale of infrastructure required, Public Works urges CARB to collaborate with CalRecycle, the State Legislature, and other partner agencies to develop a Statewide organic waste infrastructure investment strategy, including:

 A multi-year funding plan

 Identification of priority regions with capacity shortfalls, including Los Angeles County

 Integration of Cap-and-Invest revenues, federal grants, and private sector financing

 Support for local jurisdictions facing high siting and permitting barriers, including Los Angeles County.

Such a strategy would provide clarity to local jurisdictions and help accelerate the development of needed infrastructure. (15d-LACDPW-28.4)

Comment:

The use of municipal biomass waste should not be credited as in compliance with SB138 by combustion or for instate production of renewable gas - keeping sources as close to the community is important for municipal accountability and truth in operation evidence. The City of Stockton has entered into contract with DTE to combust City of Stockton organic wastes because the City "could not find a use". The City has not provided evidence of any actual efforts to increase use of composted organic green wastes nor acknowledged that the City will be polluting the air of the community with criteria air pollutants and greenhouse gases. DTE is the number one source of stationary air pollution in Stockton CA. (15d-Elizabeth-74.1)

Agency Response:

No changes were made in response to these comments. The Proposed Amendments to support the use of exempt biomass-derived fuel use through clarifications to existing exemptions and exempt biomass-derived fuel and methane emission reductions through the MDI. This would allow for covered facilities to use MDI allowance allocation towards the purchase of biomass-derived fuels, supporting the goals of SB 1383. CARB supports SB 1383 and continues to work with a range of state agencies to support reaching the goals of SB 1383. However, assessing compliance with the specific requirements for SB 1383, including whether municipal biomass waste is in compliance with SB 1383 is out of the scope of the Cap-and-Invest Program this rulemaking.

Please also refer to the Agency Response to comments 45-42-1 and 45-42-2 in the Response to Comments on the Environmental Impact Analysis.

Additionally, in Resolution 26-7 the Board has directed CARB to evaluate and propose future amendments that would further align the MDI program with statutory climate targets, such that there is sufficient support to help achieve the methane reduction targets under SB 1383.

R-2.8b Comment:

Good afternoon, Board members. Noam Elroi on behalf of CR&R Environmental, which is a recycler, waste hauler and operator of the largest organic waste anaerobic digester in the state. The current proposal would result in sending money to undelivered, out-of-state biomethane. Instead, we need to invest Cap-and-Invest resources into the development of in-state biomethane to meet the SB 1383 methane reduction and organic waste diversion goals. Thank you very much.(BH-CRRE-202.1)

Agency Response:

No changes were made in response to this comment. Please see response to R-2.8a.

R-3 Biomass Fuel Requirements in MRR (Out of Scope)

R-3.1 Comment:

For biomass-derived blendstocks, CARB should consistently provide separate emission factors and allow entities the option to use those factors, rather than requiring the use of the same factor as fossil blendstocks. While biodiesel and renewable diesel are treated differently from distillates, bionaphtha is currently assigned the same emissions factor as fossil blendstocks. Consistently providing separate emission factors for biomass-derived blendstocks, and allowing entities the option to use them, ensures that GHG

accounting accurately reflects the carbon content of bio-based fuels while enabling regulated entities to select the most appropriate factor for reporting.(45d-CUSAI-296.6)

Agency Response:

No changes were made in response to this comment in this rulemaking. This comment refers to proposed amendments to the Mandatory Reporting Regulation and is outside the scope of this rulemaking. Please refer to Agency Response to comment I-2 in the MRR FSOR.

R-3.2 Comment:

Our recommendation is that CARB should uphold and re-affirm direct biogenic content testing requirements following the ASTM D6866 Method B standard to verify the renewable (biogenic) content of any heterogenous emissions. Direct biogenic testing requirements are the only reliable method of incentivizing the use of biomass-derived content and guaranteeing compliance in mixed bio- and fossil streams. In addition to the provisions for co-processing and waste incineration included in this rule, we recommend extending biogenic requirements to the following applications. (15d-BALLC-98.1)

Agency Response:

No changes were made in response to this comment in this rulemaking. The recommendation in this comment is out of scope of the requirements of the Cap-and-Invest Regulation and therefore is out of scope of the current rulemaking. These comments refer to proposed changes to the MRR. See Response to comment D-2 in the MRR FSOR.

S. CCUS Provisions

S-1 General Support

S-1.1a Multiple Comments: Support for CCUS Provisions

WPTF supports inclusion of new placeholder language CARB pursuant to SB905 to address future provisions to reduce compliance obligations associated with carbon that is captured, removed, stored or utilized. We also support the proposed approach that would essentially treat CCUS as an offset credit subject to a 100 year permanence standard, under protocols and calculation methods to be developed. (45d-WPTF-335.3)

Comment:

IETA is pleased that CARB included carbon capture, use and storage (CCUS) provisions in the proposed regulation. We encourage CARB to integrate the CCUS provisions with the SB 905 rollout and align CCUS standards across the Cap-and-Invest, LCFS, Net-Zero Cement, and Climate Disclosure programs. (45d- IETA-341.11)

Comment:

Air Products supports the inclusion of regulatory text that recognizes the potential for reducing program obligations via carbon capture, utilization and sequestration (CCUS) projects (geologic or otherwise). This begins to close an important gap in the current regulation for CCUS projects that are needed to meet the State's carbon neutrality targets in 2045. We anticipate that additional language will be added as a result of the on-going SB 905 process, and while we support robust language to ensure that the reductions occur and are properly monitored and managed over time, it will be important to find instruments or mechanisms to share or limit liability so that projects are viable and insurable for private entities. We look forward to CARB further developing concepts and language in the future.(45d-AP-351.6)

Comment:

We strongly support proposed amendments to incorporate CCUS into the Cap-and-Invest program. CARB has identified CCUS and carbon removal as critical strategies to achieve the state's climate goals and formally incorporating them into Cap-and-Invest is a necessary step to help scale deployment of these important strategies. We especially support removal of references to geologic sequestration, in order to allow a wider array of CCUS strategies to participate in the program and support California's climate goals. We look forward to working with CARB through the SB 905 process and ongoing implementation of Cap-and-Invest and other programs to more fully flesh out the CCUS framework for California, ensure eligibility and appropriate crediting for CCUS coupled with biomethane and bioenergy, and quickly develop a wide array of new utilization and storage protocols to most quickly scale this important set of technologies. (45d-AA-364.7)

Comment:

95852.3(a): CCEEB supports the treatment of utilized or sequestered captured CO2 and encourages swift adoption of associated carbon capture and storage (CCS) regulations and accounting methodologies. (45d-CCEEB-377.7)

Comment:

6. Support incorporating CCUS and additional utilization and storage protocols

ABC supports the proposed amendments to incorporate carbon capture, utilization, and storage (CCUS) into the Cap-and-Invest program. CARB has identified CCUS and carbon removal as critical strategies for achieving the state's long-term climate goals and formally integrating these approaches into the framework represents an important step toward scaling deployment of these technologies. (45d-ABC-406.8)

Agency Response:

No changes were made in response to these comments. Any future CCUS provisions will be in compliance with SB 905 and all other applicable requirements. Provisions adopted in a future rulemaking process may address the potential treatment in the Program of carbon that is utilized or permanently sequestered, including geologically sequestered carbon. Staff appreciate the commenters' support for the Proposed Amendments.

S-1.1b Multiple Comments: Support for CCUS Provisions

Constellation continues to support amendments to the Cap-and-Invest Regulation that will encourage the construction of CCS projects essential to achieving the state's climate goals, while also maintaining the reliability of the grid. CCS technologies are key to achieving the state's 2045 emission-reduction targets. (15d-CELLC-148.1)

Comment:

It is our interpretation that this amendment is designed to create a compliance-grade pathway for engineered CDR and carbon capture, utilization, and storage (CCUS) technologies leveraged in projects across the state consistent with CARB's broader mandate under SB 905 and AB 1207. Assuming that interpretation is correct, we support the intent of this amendment and believe it can represent a meaningful step forward in establishing durable demand infrastructure for high-integrity carbon removal within California's Cap-and-Invest program and toward meeting the State's target of achieving carbon neutrality by 2045.(15-CRO-170.2)

Agency Response:

No changes were made in response to these comments. See Agency Response to comment S-1.1a. Staff appreciate the commenters' support for the Proposed Amendments.

S-2 Geologic Sequestration

S-2.1 Multiple Comments: Removal of word "geologic" from Description of Sequestration

We support the inclusion of CCUS formally into the program through the Proposed Amendments, and the removal of reference to "geologic" sequestration, which appropriately expands eligibility to a broader range of CCUS technologies. However, we urge CARB to avoid requiring future amendments to the program each time a new protocol is developed. Instead, CARB should incorporate CCUS protocols by reference, so that newly finalized CCUS strategies can be deployed under the Cap-and-Invest program without unnecessary delay. Simultaneously, we encourage CARB to begin work through the SB 905 process to expeditiously develop and finalize additional CCUS

protocols, including for carbonate mineralization. We look forward to continued participation in that forum and supporting CARB's efforts. (45d-BP-6.2)

Comment:

The Proposed Amendments "remove the word geologic from the description of sequestration to include potential future carbon sequestration methodologies that are not geological sequestration". We understand and support the underlying goal of recognizing the full range of durable engineered CDR approaches, including non-geologic storage pathways (such as mineralization and ocean-based approaches) and future technologies... We therefore recommend that CARB adopt the following amended language for the relevant definition:
"Carbon dioxide capture, removal, or sequestration project" means a carbon dioxide capture project, a carbon dioxide removal project, or a sequestration project that seeks to provide for the long-term isolation of carbon dioxide from the atmosphere through storage in a geologic formation or equivalent.
The phrase "geologic formation or equivalent" is a precise and workable formulation that preserves the statute's intent - integrating and scaling engineered CDR into California's policies and programs - while creating space for non-geologic pathways and future carbon sequestration methods that result in carbon sequestration of a similar storage lifecycle, like enhanced rock weathering and marine CDR methods. CARB would retain full discretion to define "equivalent" through the future rulemaking process. (45d-ECDRSB-323.1)

Comment:
We respectfully urge CARB to reconsider the proposed removal of the term "geologic" from "geologic sequestration" within the Cap-and-Invest regulatory framework. Regulatory consistency with federal programs. At the federal level, "geologic sequestration" is a well-established and regulated term under both Internal Revenue Code Section 45Q and EPA's Class VI Underground Injection Control (UIC) program. These frameworks provide clear definitions, permitting pathways, monitoring and verification requirements, and long-term stewardship obligations for the secure storage of carbon dioxide in geologic formations. Removing "geologic" from CARB's regulatory language creates a divergence from federal programs that project developers, regulators, and financiers rely on for permitting, compliance, and financing. Alignment across CARB, EPA, and Treasury is especially important for projects that depend on stacked state and federal policy signals to reach financial close.

Avoiding ambiguity and preserving standards. We understand and support CARB's objective to be inclusive of a broader range of carbon management pathways. However, removing "geologic" introduces ambiguity around permanence, durability, and storage

integrity. Without the geologic qualifier, “sequestration” risks conflating secure storage regulated by the Class VI UIC program with utilization or storage pathways that may not provide equivalent long-term durability. This ambiguity could complicate compliance accounting under Cap-and-Invest, create uncertainty for regulated entities, and undermine investor confidence in the environmental integrity of credited removals or avoided emissions. Geologic sequestration is distinct precisely because it is the gold standard for storage security and is subject to stringent site characterization, monitoring, post-injection site care, and long-term stewardship requirements. This distinction is also reflected in SB 905, which directs CARB to establish a regulatory framework for carbon capture and storage centered on the safe, permanent geologic storage of carbon dioxide.

Market signal clarity for CDR, DAC, and CCS Cap-and-Invest sends critical market signals to developers, lenders, and technology providers. Clear and consistent definitions are essential to support project financing and timely deployment. Uncertainty regarding what qualifies as compliant “sequestration” and how CARB’s definitions align with federal eligibility criteria increases transaction costs and may inadvertently slow investment in high-integrity geologic storage projects that California’s climate modeling assumes will be necessary to meet 2045 goals.

At the same time, we encourage CARB to continue exploring ways to integrate CDR into the Cap-and-Invest framework and to create a meaningful and durable market signal for high-integrity removal pathways, consistent with the authority provided in statute and the direction outlined in the Scoping Plan. Clear recognition that durable CDR—including DAC paired with secure geologic storage—can play a role within California’s compliance market would help catalyze investment, accelerate innovation, and provide developers with the long-term policy certainty necessary to deploy these technologies at scale.

Similarly, it will be important for the program to thoughtfully incorporate point-source carbon capture and storage (CCS) as a compliance pathway where captured emissions are securely stored. Properly integrating CCS within the Cap-and-Invest framework can ensure that industrial and power-sector facilities have viable decarbonization pathways while maintaining the environmental integrity of the program. Providing clear policy signals around both CCS and CDR will help ensure California continues to lead in the deployment of a full portfolio of carbon management solutions.

A proposed alternative. We support CARB’s goal of inclusivity and recommend retaining “geologic sequestration” as a defined, high-integrity category aligned with EPA Class VI and 45Q, while creating a separate, clearly defined category for non-geologic carbon sequestration pathways. This approach would preserve regulatory alignment with

federal programs, maintain clarity for market participants, and allow CARB to thoughtfully incorporate innovative CDR pathways with appropriate durability, monitoring, reporting, and verification criteria—without diluting the meaning of secure sequestration. (45d- 1PF-378.1)

Comment:
ABC also supports the proposal to remove references limiting eligibility to geologic sequestration, which would allow a broader range of CCUS strategies to participate in the program and better support California's climate objectives. This work should include ensuring appropriate eligibility and crediting for CCUS systems coupled with biomethane and bioenergy pathways, as well as the timely development of additional utilization and storage protocols needed to accelerate deployment of these technologies. (45d-ABC-406.10)

Agency Response:

No changes were made in response to these comments. The removal of the word "geologic' in section 95852.3 was made when the text was moved from section 95852(g) to allow for methods of sequestration other than geologic sequestration to be considered for future Board-approved CCUS quantification methodologies and future incorporation into the Cap-and-Invest Regulation. The removal of 'geologic' in this section is the only place in the Regulation where the word 'geologic' was removed. The definition of "geologic sequestration" was unchanged, as was the specific reference to "geologic sequestration" in the definition of CO2 suppliers. The goal of the change was to indicate potential expansion of options not removal or reprioritization of existing methods for sequestration. The suggestion for including new CCUS protocols in the future by reference as a way to streamline implementation will be taken under consideration and CARB staff note that all changes to the Regulation require a rulemaking process. The work to advance SB 905, including potential additional methods of carbon removal that could be included, is ongoing across the agency. Staff appreciates the support for the Proposed Amendments and encourages the commenters to remain engaged in future rulemaking processes, including the SB 905 rulemaking.

S-2.2 Comment:

As noted above, the existing Cap-and-Invest Regulation and proposed amendments provide that carbon dioxide suppliers (i.e., entities that capture emissions) are covered entities. However, the Regulation does not currently provide that entities engaged in geologic sequestration are also covered entities. CARB should propose additional amendments in a 15-day package to close this gap as part of this rulemaking.

To accomplish this, CARB should add “geologic sequestration facilities” to the list of covered entities and specify an inclusion threshold for such facilities, which likely should be 0 MTCO2e. CARB should also add a subsection providing that “geologic sequestration facilities” have a compliance obligation for the total quantity of “surface leakage” of CO2.

These additional amendments will provide default rules around which the parties involved in the chain of custody for captured and sequestered CO2 may contract, and in so doing, will facilitate the development of risk-allocation tools to ensure the permanence of sequestered CO2. (45d-CEGLLC-370.2)

Agency Response:

No change was made in response to this comment. The scope of this rulemaking with regards to CCUS provisions is limited to the creation of a new section as a placeholder for a future rulemaking if and when more detailed provisions regarding geologic sequestration or the equivalent are added to the Program. In a future rulemaking, CARB will consider whether new facility types may need to be added to the list of covered entities. Staff encourage the commenter to stay engaged in future regulatory processes including SB 905.

S-3 Calculation of Compliance Obligations

S-3.1a Multiple Comments: CCUS and Reduction of Compliance Obligation

Establish clear accounting rules for captured and stored CO_2. The C&I program currently does not include a protocol that recognizes captured and permanently sequestered CO_2 for purposes of reducing a facility's compliance obligation. Without such recognition, a cement manufacturer that successfully captures and stores emissions would receive no direct compliance benefit under the very program that imposes the obligation — weakening the economic case for investment. At a minimum, California cement producers deploying CCUS should receive a financial incentive for CO_2 capture and storage equal in value to the carbon price set by the C&I market. Without such rules, the program's carbon price signal, which is intended to incentivize decarbonization, will fail to perform that function for the single most important decarbonization technology available to the cement industry. Signal that the C&I program will evolve to support CCUS. Even if comprehensive CCUS provisions cannot be adopted in this rulemaking, CARB should use this proceeding to signal that CCUS integration is a near-term priority for the C&I program. A clear statement of intent with a timeline for developing accounting rules, incentive provisions, and coordination with the SB 905 process would provide a measure of confidence to producers and investors evaluating CCUS projects today. (45d-CSCME-352.3)

Comment:

As part of this cap-and-invest rulemaking, CARB should update the proposed regulation to include specific and comprehensive regulatory provisions that enable greenhouse gas (GHG) emissions reductions that result from CCUS to be fully accounted for as part of an entity's reduction in a compliance obligation under the program now. This will enable California to take full advantage of the emissions reduction benefits from CCUS projects that are poised to begin capturing and sequestering emissions in the near-term and provide critically needed regulatory certainty for ongoing investment and deployment of projects moving forward. Given the state's need to affordably meet increasingly stringent climate targets, we cannot afford to delay the benefits that CCUS technologies will provide. (45d-CCSC-356.1)

Comment:

CARB has identified that sequestering carbon is a necessary tool for achieving the State's 2045 carbon neutrality goal, and multiple CCS projects are already under development. In turn, project developers and offtakers need clear, durable rules to ensure compliance obligations are commensurate with actual emissions by these projects, in order to justify continued investment and long-term offtake commitments. To ensure consistency and accuracy, CMUA recommends that CARB amend the Mandatory Reporting Regulations to clarify that electric generation facilities equipped with CCS will be attributed only emissions to the atmosphere from the facility and do not include any gases that are captured, sequestered, and/or utilized; the entities that receive and sequester captured emissions should be responsible for any associated emissions that occur during those later, distinct processes.

CMUA supports the proposed amendments in Cap-and-Invest regulations, which clarify that CCS will reduce the compliance obligation of a carbon dioxide supplier, but recommends against deferring this effect until after a subsequent Cap-and-Invest rulemaking, given the importance of ensuring certainty for utilities and other stakeholders who are investing in this important technology in the near term. (45d-TCMUA-368.14)

Comment:

The current Cap-and-Invest Regulation does not provide clarity for CCS developers on how aggregated compliance obligations are calculated. In a placeholder provision in Section 95852(g), it provides in a general way that a covered source (e.g., a gas-fired power plant that is a "first deliverer of electricity") capturing and permanently sequestering CO2 (as a "carbon dioxide supplier") will have an "aggregate" compliance obligation, reduced to reflected captured and sequestered CO2. But it provides few details and requires only that reporting and verification adhere to "a Board-approved carbon capture, utilization, and sequestration quantification methodology" that "must be incorporated into the Cap-and-Invest Regulation before it can be used."

CARB's proposed amendments provide no further clarification. The proposed amendments would retain Section 95832(g), but relocate the language quoted above to a new Section 95852.3 entitled "Compliance Obligations for Sequestered or Utilized Captured Carbon Dioxide." They also would add a statement that any "Board-approved carbon capture, utilization, and sequestration quantification methodology" to be adopted in the future will also have to meet the requirements of SB 905.

CCS projects are being developed for facilities subject to the Cap-and-Invest Program today, and developers need clear ground rules on how their aggregated compliance obligations will ultimately be calculated. If CARB waits until future rulemaking to adopt such rules, CCS project developers and their commercial partners – those transporting CO2 in a pipeline meeting requirements adopted by the Office of State Fire Marshal pursuant to SB 614, those conducting sequestration within a permitted Class VI Underground Injection Control ("UIC") well, and those purchasing the near-zero-emission electricity generated by CCS-equipped power plants to serve their customers – will not have the clarity needed to ensure permanent sequestration of the sequestered CO2 and allocate responsibility among themselves. This could slow down and ultimately impede the development of projects essential to achieving the state's climate goals.

Constellation encourages CARB to propose further amendments to the Cap-and-Invest Regulation as part of a 15-day package to explain how a carbon dioxide supplier's "aggregated compliance obligation" is calculated. The starting point for the "aggregated compliance obligation" calculation should be the total CO2 reported with respect to upstream manufacturing processes, other processes, and/or production wells from which the carbon dioxide supplier captures, extracts, or otherwise produces a CO2 stream. The regulations should then clearly provide that the "aggregated compliance obligation" subtracts all CO2 verified to be geologically sequestered as reported under section 95125 (i.e., CARB's newly proposed provision for reporting geologic sequestration under the MRR), in compliance with other applicable laws and regulations, including SB 905.

It is essential that CARB provide a clear accounting roadmap for CCS developers in calculating their aggregated compliance obligations under the Cap-and-Invest Program. (45d-CEGLLC-370.1)

Comment:

CARB appears to anticipate adopting additional requirements to ensure permanence and compliance of CCUS projects. CRC does not object to the development of regulations implementing these statutory requirements. However, those requirements should be adopted in the current rulemaking to provide regulatory certainty. (45d-CRC-379.3)

Comment:

The 2022 Scoping Plan makes clear that there is no path to carbon neutrality without carbon removal and sequestration. The Plan assumes substantial CCUS deployment across refining, industrial manufacturing, and fossil-based electric generation. CCUS is also critical for upstream oil production, where emissions are tied to legacy field infrastructure and steam generation systems. Post-combustion capture retrofits, pre-combustion capture at gas processing facilities, and emerging CDR technologies all require predictable compliance credit to support investment. If permanently stored CO_2 does not receive timely compliance recognition, California cannot achieve the deployment levels assumed in its own climate planning.(45d-CRC-379.5)

Comment:

Ensure that carbon capture, utilization, and storage (CCUS) and carbon dioxide removal (CDR) projects are eligible to reduce covered emissions and are reflected in MRR net emissions reporting. … CARB should integrate CCUS and CDR as eligible compliance pathways, which would incentivize investments in emerging decarbonization technologies while providing California industry with additional options to achieve emissions reductions cost-effectively. CARB has repeatedly acknowledged that CCUS and CDR are “essential tools for achieving climate neutrality,” 32 and AB 1207 directs CARB to “[c]onsider developing additional compliance offset protocols. . . , including carbon dioxide removal.” ... 5. CCUS and CDR projects should directly reduce covered emissions and be reflected in MRR reporting. By CARB’s own account, both CCUS and CDR technologies will be critical to achieving California’s 2045 carbon neutrality target. CARB’s planning documents, including the 2022 Scoping Plan Update, acknowledge that large-scale deployment of CCUS and CDR is necessary to achieve long-term climate goals. While large-scale deployment is aspirational given the long-term investment signal CARB is sending, these technologies have been shown to directly prevent CO2 from entering the atmosphere or permanently remove CO2 already emitted. However, under the current regulatory framework and the Proposed Amendments, covered entities that invest in CCUS or CDR do not receive clear or direct compliance recognition under either Cap-and-Invest or MRR, significantly weakening the incentive to pursue these capital-intensive, long-lead-time projects.AB 1207 specifically directs CARB to “[c]onsider developing additional compliance offset protocols to address sectors that are not covered by the market-based compliance mechanism but are identified in the scoping plan . . . , including carbon dioxide removal.” CARB’s Proposed Amendments largely defer

development of CCUS pathways pending CARB’s adoption of its Carbon Capture, Removal, Utilization, and Storage Program, instead creating new § 95852.3 as a placeholder to address the treatment of utilized or sequestered carbon dioxide in the

Program. To ensure that the Cap-and-Invest program remains effective and supports the State's long-term GHG reduction targets, CARB should explicitly recognize qualified CCUS and CDR projects as covered GHG emissions reductions eligible for meeting compliance obligations. Covered entities that capture and permanently store or verifiably remove CO2 should be allowed to reflect those reductions in their covered emissions, rather than being required to surrender allowances as though the captured GHG emissions had been released into the atmosphere. Absent such clarity, the program risks discouraging investment in precisely the technologies that CARB has identified as essential for achieving carbon neutrality.

Equally important, the MRR must be updated to provide a clear pathway for reporting net GHG emissions that account for CCUS and CDR. Specifically, CARB should clarify in the MRR that covered entities may report net GHG emissions, including direct GHG reductions from CCUS and CDR projects. Without corresponding changes to the MRR, covered entities cannot accurately report the GHG emissions reductions achieved through these technologies, nor can CARB ensure consistent, transparent, and verifiable accounting across the program. Aligning the MRR with Cap-and-Invest treatment of CCUS and CDR is necessary to provide regulatory certainty and ensure environmental integrity.

Clarifying CCUS and CDR treatment under both Cap-and-Invest and the MRR would also function as an important cost-containment mechanism. By permitting covered entities to reduce their compliance obligations through verified emissions capture and removal, CARB can help moderate allowance demand, support market stability, and lower overall compliance costs while still delivering real, in-state emissions reductions. This approach is particularly critical for EITE sectors facing limited near-term decarbonization options. WSPA urges CARB to amend both regulations to explicitly recognize qualified CCUS and CDR projects as direct reductions to covered emissions. Doing so is essential to enabling private investment, accelerating deployment of carbon-negative technologies, and ensuring the Cap-and-Invest program can credibly and affordably support California's path to carbon neutrality by 2045.(45d-WSPA-381.7)

Comment:

As part of this regulatory update, CARB should ensure that the Cap-and-Invest program supports carbon capture, removal, utilization and sequestration (CCUS) technologies that California will need to meet our climate goals. CARB's 2022 Scoping Plan includes CCUS and targets 100 million metric tons of emissions reductions by 2045. The Legislature has similarly recognized this need through Senate Bill 905, which directs CARB to establish a Carbon Capture, Removal, Utilization and Storage Program.

California companies are making significant investments to deploy CCUS projects in the state that will deliver key climate benefits while supporting an affordable transition to

lower-carbon alternatives. However, the Cap-and-Invest Program does not currently include the regulatory provisions necessary to account for and credit the emissions reductions these projects will deliver. The draft regulations currently contain only a placeholder on this issue. Regulations should include specific accounting language that specifies how emissions reductions resulting from CCUS would be counted and assigned to the appropriate entity with a compliance obligation, consistent with the reporting framework already used under the program.

CARB's implementation of Senate Bill 905 is well behind schedule. SB 905 implementation should not serve to delay inclusion of CCUS in the Cap-and-Invest program—both regulatory actions must proceed without further delay.(45d-AMPetrie-Norris-432.4)

Comment:

The CCMC recommends that CARB clarify CCUS provisions in the proposed amendments to better incentivize early deployment of this technology. The proposed amendments provide that a "Board-approved quantification methodology must be incorporated into the Cap-and-Invest Regulation before it can be used to reduce a CO2 supplier's compliance obligation." However, the amendments do not define the standards, procedural mechanism, or timeline for such "incorporation." This omission creates material regulatory uncertainty that can and should be addressed in this rulemaking. This uncertainty risks delaying investment and undermining incentives for early deployment, as stakeholders lack clarity on when CCUS reductions may be eligible for compliance use. To address this ambiguity, CARB could, for instance, more clearly articulate the mechanism, timing, and criteria for incorporating Board-approved quantification methodologies into the Cap-and- Invest Regulation. CARB could also detail the accounting framework that would be used to recognize CCUS reductions when determining an entity's compliance obligation. Given the delays to SB 905 implementation and the importance of this cap-and-invest regulatory update, CCMC believes stakeholders would benefit from a clearer understanding of CARB's envisioned approach sooner than later. CARB could help provide this clarity by previewing a predictable compliance pathway for early CCUS projects without undermining the program's environmental integrity while SB 905 implementation process is being completed.(45d-CCMC-439.4)

Comment:

PG&E strongly supports the inclusion of Carbon Capture, Utilization, and Storage (CCUS) technologies within the Cap-and-Invest Program. CCUS is a critical tool to achieve California's climate goals as outlined in CARB's 2022 Scoping Plan and will be particularly helpful for industrial processes that require high heat and face technological barriers to electrification. We appreciate CARB's ongoing recognition, including in the

ISOR, of the important role that CCUS will need to play as part of the C&I program moving forward.

However, we believe that companies that are actively deploying CCUS projects or considering them need greater clarity from CARB on how emissions reductions from CCUS will be accounted for in relation to their compliance obligations. A comprehensive regulatory structure is essential to reduce market uncertainty and help drive investments in CCUS projects in a timely manner. Time is of the essence, as CCUS projects must break ground before 2033 in order to qualify for the generous federal carbon capture tax credit, 45Q.

For these reasons, we respectfully request that CARB update the proposed regulation in a timely manner to include specific and comprehensive regulatory provisions that enable greenhouse gas emissions reductions that result from CCUS to be fully accounted for as part of an entity's reduction in a compliance obligation under the program in this rulemaking. (45d-PG&E-445.10)

Comment:

ClimateBuild supports the objective of strengthening integrity and aligning CCUS accounting with statutory requirements. However, clarity and timing are essential if CCUS is to function as a viable compliance pathway rather than an aspirational one. The core issue is sequencing. Under the proposed structure, a CCUS project cannot reduce a compliance obligation unless a Board-approved quantification methodology has been formally incorporated into the regulation. That requirement ensures rigor. At the same time, it may introduce multi-year delays between the development of technically viable capture projects and the availability of compliance recognition. For capital-intensive projects, regulatory recognition timing is not a minor detail. Facilities considering capture investments must assess the certainty of compliance treatment before committing capital. If recognition depends on future rulemaking cycles with uncertain timelines, the economic case for investment weakens substantially. We therefore recommend adding a narrowly tailored provisional pathway that preserves all integrity standards but allows time-limited compliance recognition pending full regulatory incorporation. Specifically, we propose modifying the final sentence of § 95852.3(a) as follows: Current language provides: "…The Board-approved quantification methodology must be incorporated into the Cap-and-Invest Regulation before it can be used to reduce a CO_2 supplier's compliance obligation." We recommend revising this to read: "…The Board-approved quantification methodology must be incorporated into the Cap-and-Invest Regulation before it can be used to reduce a CO_2 supplier's compliance obligation, except that the Executive Officer may approve a provisional quantification approach for a limited pilot period where the approach meets the requirements of this subsection, is consistent with Section 39741.1 of the Health and Safety Code, and

includes enforceable monitoring, reporting, and third-party verification sufficient to ensure reductions are real, quantifiable, verifiable, enforceable, and permanent to at least a 100-year permanence standard. Any provisional approval shall be subject to public notice and shall expire unless incorporated into the Regulation by the Board." This amendment does not relax environmental standards. The permanence threshold, verification requirements, and statutory consistency remain intact. What changes is the timing mechanism. Such a structure aligns with the broader carbon neutrality framework established in AB 1279, which contemplates that a portion of reductions will occur through indirect mechanisms, including removal and sequestration. AB 1279's 85 percent direct / 15 percent indirect architecture underscores that durable carbon removal pathways must be operationalized within compliance programs, not left as abstract future concepts. Providing a provisional pathway also improves regulatory clarity. Rather than leaving project developers uncertain about whether and when recognition will occur, CARB would establish defined criteria and public documentation standards. That clarity reduces investment risk without sacrificing oversight. From an affordability standpoint, the relevance is straightforward. If CCUS projects can proceed with predictable compliance treatment, industrial facilities are more likely to modernize rather than curtail operations. Modernization maintains in-state production and moderates downstream cost impacts. Conversely, if recognition lags, facilities may face escalating compliance costs without a feasible mitigation pathway. The recommended amendment strengthens environmental integrity while enhancing regulatory workability. It treats compliance recognition not as a theoretical exercise but as a practical tool that must operate on real-world investment timelines. (45d-CBC-446.16)

Comment:

CARB should clarify that Cap-and-Invest compliance obligations align with atmospheric emissions and incorporate flexibility to support near-term deployment of CCS technology.

SMUD appreciates the intent of the proposed amendments in Cap-and-Invest § 95852.3 (a), which clarify that CO2 that is verified to be sequestered or utilized through use of a Board-approved CCS methodology will be excluded from an entity's Cap-and-Invest compliance obligation. However, the amendments also defer the effect of CCS in reducing compliance obligations until after a subsequent Cap-and-Invest rulemaking incorporates the Board-approved CCS procedure.

SMUD is concerned that deferring CCS's ability to reduce Cap-and-Invest compliance obligations until after the completion of three successive rulemakings–the current Cap-and-Invest rulemaking, the as-yet-uninitiated SB 905 rulemaking, and a subsequent Cap-and-Invest rulemaking–could add substantial and unnecessary delays. Rather than deferring to a subsequent Cap-and-Invest rulemaking, CARB should clarify that CCS

will reduce compliance obligations only for those facilities that satisfy the Board-approved methodology.

SMUD accordingly suggests the following amendments to Cap-and-Invest § 95825.3:

An entity A carbon dioxide supplier has an aggregated compliance obligation for every MT of CO2 captured from a CO2 stream, except for CO2 that is verified to be sequestered or utilized through use of a Board-approved carbon capture, utilization, and sequestration quantification methodology that ensures that the emissions reductions are real, permanent to at least a 100-year permanence standard, quantifiable, verifiable, and enforceable. Any methodology must be consistent with Section 39741.1 of the Health and Safety Code. The CO2 supplier must meet the requirements of the Board-approved quantification methodology must be incorporated into the Cap-and-Invest Regulation before sequestered or utilized carbon it can be used to reduce a CO2 supplier's compliance obligation. The compliance obligation for an electricity generating facility equipped with carbon capture technology shall be based on its atmospheric emissions reported in MRR. (45d-SMUD-447.18)

Agency Response:

No change was made in response to these comments. As described in the CCUS Provisions chapter of the ISOR, the calculation of compliance obligations for CCUS is outside the scope of this rulemaking. A future rulemaking would be needed to address the potential treatment in the Program of carbon that is utilized or permanently sequestered, including geologically sequestered carbon. This includes how any reduction to a facility's compliance obligation would be calculated if the CO_2 is verified to be sequestered once there is a Board-approved quantification methodology. The work to advance SB 905 including sequestration protocols and creation a quantification methodology for CCUS technologies is ongoing across the agency. Please refer to the Agency Response to O-8.31a regarding CCUS provisions in the MDI. Future CCUS provisions will be in compliance with SB 905 and all other applicable requirements. Comments related to requirements in the Mandatory Reporting Regulation are outside the scope of this rulemaking. See Agency Response to comments G-2 in the MRR FSOR.

S-3.1b Multiple Comments: CCUS and Reduction of Compliance Obligation

Finally, if CARB does undertake an additional 15-day rulemaking package at this time, Constellation would encourage CARB to propose additional amendments to clarify the treatment of CCS in calculating the aggregate compliance obligation and net emissions rate of CCS-equipped facilities, as discussed in our comments on the 45-day package. (15d-CELLC-148.4)

Comment:

The cap and invest regulation is a central element of California's climate policy framework that can provide a critical regulatory incentive for investment in and deployment of CCUS projects. We appreciate CARB's ongoing recognition of the important role that CCUS will need to play as part of the cap-and-invest program moving forward. However, companies that are actively deploying these projects need a clear and comprehensive understanding of how emissions reductions from CCUS will be accounted for as part of their efforts to reduce emissions in support of state climate goals.

CARB should update the cap and invest program to include specific and comprehensive regulatory provisions that enable GHG emissions reductions that result from CCUS to be fully accounted for as part of an entity's reduction in a compliance obligation under the program now. This will enable California to take full advantage of the emissions reduction benefits from CCUS projects that are poised to begin capturing and sequestering emissions in the near-term and provide critically needed regulatory certainty for ongoing investment and deployment of projects moving forward. Given the state's need to affordably meet increasingly stringent climate targets, we cannot afford to delay the benefits that CCUS technologies will provide. (15d-CCSC-156.3)

Comment:

SMUD urges CARB to provide certainty in both MRR and Cap-and-Invest regarding CCS emissions accounting, which is necessary to enable near-term decisions on CCS investments.

SMUD is disappointed that neither the MRR nor Cap-and-Invest 15-Day amendments clarify the emissions accounting framework for power plants equipped with CCS. The state has widely recognized the role that CCS will play in achieving decarbonization goals. For electric utilities, this technology has the potential to significantly reduce GHG emissions while supporting affordability and reliability—two essential features of a resilient grid that will further encourage electrification of transportation, buildings, industry, and other end-uses. CCS is closer to market-readiness than ever, and regulatory certainty and acknowledgement of its importance to a clean, reliable grid is a priority for SMUD. Together with several other publicly owned utilities and the Balancing Authority of Northern California, SMUD is actively exploring near-term opportunities to procure electricity from plants equipped with CCS. However, without clarity from CARB, via changes to the MRR and Cap and Invest regulations, it is unclear how emssions from such plants will be counted. This is critically important to electric utilities like SMUD that are subject to the CEC's Power Source Disclosure regulations. Those regulations incorporate CARB's data regarding facilities' emissions in MRR, which are ultimately used to populate the utility's Power Content Label and relay information about the

utility's emissions to customers. SMUD's understanding is that, under the status quo, facilities equipped with CCS will report—and be responsible for—both atmospheric emissions and capture CO2. It is unclear, however, whether CARB will attribute only atmospheric emissions to that facility or all emissions—including those captured and geologically sequestered.GSMUD recognizes that important work regarding monitoring, financial responsibility, and leakage protection requirements is yet to be completed in CARB's SB 905 rulemaking, but utilities and other members of the energy industry who are eager to deploy firm, low- and zero-carbon resources require greater certainty in the near term, so **as not to** delay or derail these important projects. SMUD urges CARB to provide this clarity in a second round of 15-day amendments. At a minimum, however, CARB should clarify in the Final Statement of Reasons that only atmospheric emissions will be attributed to the facility and reported to the CEC for purposes of the Power Source Disclosure program.(15d-SMUD-167.4)

Agency Response:

No change was made in response to these comments. See Agency Response to comment S-3.1 and MRR FSOR response to comment G-2.

S-3.2 Multiple Comments: Biomass emissions net negative with CCUS

Formally recognize that capturing and storing CO_2 emissions that originates from biomass fuel combustion is a net carbon negative outcome. Without this recognition, there is no economic incentive to capture CO_2 resulting from biomass fuel combustion, which would represent a missed opportunity as California drives toward net carbon neutrality. (45d-CSCME-352.4)

Comment:

Recognize CCUS as a means for avoided emissions and associated compliance obligations and recognize that CCUS of biogenic emissions is carbon negative. We support CARB's proposed recognition of carbon capture, utilization, and storage (CCUS) as a means to avoid compliance obligations, contingent on CARB's adoption of a standard to ensure that the emissions reductions are real, permanent, quantifiable, verifiable, and enforceable. (Cap-and-Invest Proposed Regulation, Appendix A, p. 131-132) We further recommend CARB formally recognize that CCUS used in tandem with biogenic emissions is a net carbon negative outcome. Without this recognition, there is no economic incentive to capture CO_2 resulting from biogenic sources, which would represent a missed opportunity as California drives toward net carbon neutrality. (45d-NCCC-418.5)

Agency Response:

No change was made in response to these comments. Emissions verified under the MRR from biogenic fuels that meet the exemption requirements section

95852.2 of the Regulation will continue to be exempt from a compliance obligation under the Proposed Amendments. Until there is a Board-approved quantification methodology incorporated into the Regulation there will be no reduction in a compliance obligation for CCUS. Staff appreciates the comments and encourages the commenters to stay engaged in future regulatory processes related to CCUS, including the SB 905 rulemaking.

S-3.3 Comment:

We urge CARB not to include CCUS as a pathway for compliance to reduce emissions, given the multiple concerns environmental justice communities have with this technology. Currently, projects are being developed in the Central Valley, one of which CARB staff have toured, although the state does not have a rule to regulate these types of projects, putting community members in danger. We want to better understand the types of projects CARB aims to capture by expanding the definition of CCUS by removing the term “geologic” to include other forms of sequestration. (45d-CRPE-46.7)

Agency Response:

No change was made in response to this comment. See Agency Response to comments S-1.1a, S-2.1 and 46-4 in the Response to Comments on the Environmental Impact Analysis. Staff appreciates the comment and encourages the commenter to engage with future regulatory processes including the SB 905 rulemaking.

S-4 General Concerns

S-4.1 Comment:

We are concerned, however, that the text seems to limit the applicability of any future CCUS protocol to CO2 suppliers. Given the interest of electricity generators, importers and our emissions sources to use CCUS in the future, we request that Staff broaden the language of section 95852.3 to enable use of future protocols by other emission source categories. (45d-WPTF-335.4)

Agency Response:

No change was made in response to this comment. As stated in the ISOR section 95852.3 was created as a placeholder for future CCUS provisions. Because CCUS protocols will have implications across multiple sectors, the language was moved to its own section so as to not limit its potential future applicability. Staff encourages the commenters to remain engaged in future rulemaking processes, including the SB 905 rulemaking.

S-4.2a Multiple Comments: Include CCUS Quantification Methodology in Amendments

Notwithstanding all the deliberate work that is reflected in the Amendments, Bloom continues to be concerned about the lack of clarity on obligations for sequestered or utilized carbon dioxide. Section 95852.3 renders it clear that there is an intention to come up with a quantification methodology for determining what portion of sequestered or utilized carbon dioxide is excepted from compliance. Nonetheless, it also renders it clear that the methodology is yet to be determined and must be incorporated into the Cap-and-Invest Regulation before it can be used to reduce a CO2 supplier's compliance obligation. Until and unless that methodology is certain, no meaningful sequestration or utilization project will be able to get to Final Investment Decision (FID) in California. As such, and in the interest of getting these significant reductions in the near term, we encourage CARB to develop and approve this methodology as soon as possible. (45d-BE-344.2)

Comment:

CRC recognizes that CARB's proposed rule includes a crediting mechanism for CCUS projects.

However, the proposed rule also delays full implementation of that provision until CARB adopts a "…Board-approved…quantification methodology…," referenced in Section 95852.3 of this proposed rule, but presently not included in this proposed rule. CARB should adopt those requirements for a quantification methodology and permanence standard in the current rulemaking. Delay in defining the requirements for stored CO2 to be excluded from compliance obligations will result in a corresponding delay in the development and deployment of CCUS capacity. (45d-CRC-379.1)

Agency Response:

No change was made in response to these comments. Staff recognizes the commenter's concern over the lack of a Board-approved quantification methodology in the Proposed Amendments. The inclusion of the new section 95852.3 is a step toward the potential future inclusion of CCUS provisions. The 15-day Amendments include CCUS expenditures as a potential eligible use of MDI allocation, which provides a pathway for support of early CCUS investment, See the Agency Response to comment O-8.31a for additional detail. The work to create a quantification methodology for CCUS technologies for Board-approval is ongoing across the agency. Staff appreciates the comment and encourages the commenter to engage with future regulatory processes including the SB 905 rulemaking.

S-4.2b Multiple Comments: Include CCUS Quantification Methodology in Amendments

California's statutory carbon neutrality framework depends materially on the deployment of carbon capture, utilization, and sequestration (CCUS) and carbon dioxide (CO2) removal (CDR) technologies. AB 1279 establishes an architecture under which at least 85 percent of greenhouse gas reductions must come from direct emission reductions and up to 15 percent may be achieved through net reductions such as carbon removal and sequestration. The 2022 Scoping Plan for Achieving Carbon Neutrality operationalizes that framework through a CO2 removal and capture target of 20 million metric tons (MMT) by 2030 and 100 MMT by 2045. AB 1207 further directs CARB to consider developing additional compliance offset protocols, including CO2 removal. The proposed amendments reorganize CCUS compliance obligations under §95852.3, which provides that an entity has a compliance obligation for every metric ton of CO2 captured from a CO2 stream, except where that CO2 is verified to be sequestered or -approved quantification methodology that is incorporated into the Regulation before it can be used to reduce a supplier's compliance obligation. The limited CCUS-related MDI pathway under §95891(g)(2)(H) is contingent on the same methodology incorporation. interim, a facility that deploys CCUS and reduces its actual emissions must surrender allowances as if 100 percent of its CO2 were released to the atmosphere. The economic consequence is direct: a California facility investing in CCUS bears the capital and operating costs of the capture system and the full Cap-and-Invest compliance cost for emissions it has not released. There is no financial incentive under the proposed amendments to deploy the technologies the State's own climate framework relies on. businesses. When a facility cannot reduce its compliance obligation by capturing and sequestering CO2, the full compliance cost is embedded in the price of the fuel, natural gas, electricity, cement, steel, or refined product it produces. Californians pay that cost in their utility bills, at the pump, and in the price of goods throughout the economy, including for emissions that never reached the atmosphere. A compliance structure that imposes costs on emissions that have been prevented is not a cost effective structure and is inconsistent with the affordability directive of AB 1207. captured and sequestered CO2 has not reached the atmosphere, and the compliance obligation structure should recognize that reality. The sectors best positioned to deploy CCUS are the same energy-intensive, trade-exposed sectors most affected by leakage concerns, and the same sectors that anchor industrial employment across the State. A CCUS framework that operates on real investment timelines keeps modernization capital in California; a framework that does not accelerates capital flight to better-aligned jurisdictions. incorporating Board-approved quantification methodologies under §95852.3, so that CCUS projects can advance on real-world investment timelines; (ii) consider a narrowly tailored provisional compliance pathway that preserves the permanence and verification standards of §95852.3 while permitting

time-limited compliance recognition before full methodology incorporation; and (iii) align the compliance obligation treatment of verified captured and sequestered CO2 with the negative carbon pathway architecture established under AB 1279.9 (15d-LACBF-15.5)

Comment:

CRC strongly supports inclusion of a CCUS compliance pathway and agrees with CARB's stated conclusion that "…there is no path to carbon neutrality without carbon removal and sequestration." The 15-day amendments, however, do not resolve the core concern CRC raised in its March 9, 2026, letter. The proposed regulation still does not provide sufficient certainty regarding the methodology, permanence standards, or timing under which stored CO_2 will reduce compliance obligations. Regulatory certainty drives investor confidence. Large-scale CCUS projects require capital commitments of hundreds of millions of dollars. That capital competes directly with projects in jurisdictions that offer defined, durable compliance frameworks. Capital providers cannot underwrite a compliance pathway that depends on a future rulemaking of unspecified timing. Without a Board-approved quantification methodology in this rulemaking, investors will continue to discount or decline California projects, and capital will flow to other states. CRC recognizes that the proposed rule includes a crediting mechanism for CCUS projects. However, the rule defers full implementation of that provision until CARB adopts a "…Board-approved…quantification methodology…" referenced in Section 95852.3 but not included in this proposed rule. CARB should adopt the quantification methodology and permanence standards in this rulemaking. Continued delay will result in a corresponding delay in the development and deployment of CCUS capacity, and California will fall short of the deployment levels assumed in the 2022 Scoping Plan. (15d-CRC-161.1)

Comment:

CCUS compliance recognition. SB 905 implementation remains incomplete, and the 15-Day Amendments preserve the placeholder structure of new § 95852.3 without resolving how qualifying capture, sequestration, and utilization projects will receive compliance recognition. Several legislators have raised this concern in the 45-day record, and we share it. A workable provisional pathway preserving permanence, verification, and enforceability standards while allowing approved projects to proceed against defined criteria would substantially improve the investment case for the CCUS infrastructure CARB's own Scoping Plan identifies as essential to the 2045 trajectory. We encourage CARB to develop that pathway alongside SB 905 rulemaking rather than sequencing them serially. (15d-CB-201.23)

Agency Response:

No changes were made in response to these comments. Please see the Agency Response to S4-2a. See the Agency Response to comment S-3.1a for

information regarding CCUS and the reduction of compliance obligation. For information regarding the inclusion of CCUS in MDI please see Agency Response to comment O-8.31.

S-4.3a Multiple Comments: Cap and Invest and SB 905

C. Coordinate Cap-and-Invest Implementation with the SB 905 Regulatory Framework.

As discussed in the Proposed Amendments, CARB, in addition to Cap-and-Invest, is currently working to develop a Carbon Capture, Removal, Utilization, and Storage Program through SB 905. We commend CARB's commitment across both programs to advancing carbon capture, removal, utilization, and storage technologies, all of which are essential to combating climate change. Charm has been engaged in the SB 905 implementation process at CARB since its inception in 2023. Most recently, Charm submitted comments in response to the August 2025 Information Solicitation to Inform Implementation of SB 90513 and presented at CARB's SB 905 workshop in February 2025 on the status of deploying and scaling CDR technology to achieve carbon neutrality.14 Throughout our participation we have expressed our support for establishing an engagement and implementation timeline for SB 905 and providing CARB with the needed funding and resources to implement this important program.

Given California's need for progress, it is critical that there is alignment and consistency across Cap-and-Invest and SB 905 implementation so that there are clear pathways for market participation. For this reason, we believe these two programs should be designed in a coordinated manner, using a common set of core requirements and processes, so that projects can move efficiently between them without duplicative reviews or conflicting standards. In doing so, CARB can more efficiently incentivize the scaling of the CCUS and CDR technologies in line with the state's broader decarbonization goals. (45d-CI-354.3)

Comment:

b. CCUS exemption should not precede SB 905 rulemaking.

CBE echoes the concerns of environmental justice advocates and objects to CARB's preemptive approval of CCUS. CARB has an obligation to complete SB 905 (2022) rulemaking, and the discussion and advocacy under this process is essential to making programmatic changes regarding CCUS. CBE calls on CARB to remove exemptions for CCUS. (45d-CBE-449.5)

Agency Response:

No changes were made in response to these comments. The current Regulation includes compliances requirements for CO2 suppliers. As described in the ISOR, this language was moved to a new section, and the Proposed Amendments

specify the requirement that any future inclusion of CCUS in the Regulation is contingent upon a future Board-approved quantification methodology that is consistent with SB 905. Because there is no Board-approved CCUS quantification methodology in place to guarantee that GHG emissions reductions meet at least a 100-year permanence standard, as required by the Proposed Amendments, there are no exemptions for CCUS in this rulemaking. Work on CCUS, including a quantification methodology, are ongoing across the agency. Staff appreciates the comment and encourages the commenters to engage with future regulatory processes including the SB 905 rulemaking.

S-4.3b Multiple Comments: Cap and Invest and SB 905

As stated previously, Charm appreciates CARB's acknowledgement of the important role that sequestered and utilized captured carbon dioxide technologies play in the state's Cap-and-Invest program. To support this, a robust and comprehensive quantification methodology will be critical to providing a strong foundation for scaling permanent carbon removal solutions in alignment with the state's climate goals.

As currently written, the proposed 15-Day Amendments state that "a Board-approved quantification methodology must be incorporated into the Regulation pursuant to the requirements of section 95852.3." Given that CARB will be approving a quantification methodology through its Carbon Capture, Removal, Utilization, and Storage Program under the SB 905 Program, we recommend that the Cap-and-Invest Program adopt the same methodology. In doing so, CARB can streamline implementation and promote program consistency, thereby reducing administrative complexity, lowering barriers to participation, and ultimately providing clearer market signals to support investment and scale.

Charm already adheres to a peer-reviewed protocol (Isometric) that is independently verified for each tonne of carbon removed. Isometric's protocol was developed by experts, and underwent peer review and public consultation before publication. This type of rigorous methodology can provide technical background for CARB's approach, and leveraging the research and consultation that has been done previously can help CARB to accelerate progress. (15d-CI-115.4)

Comment:

While the 15-Day changes do not directly incorporate new CCUS protocols by reference, we understand that the regulation may be amended to incorporate new protocols as part of the SB 905 implementation process, and we look forward to working with CARB to quickly finalize that process and develop new protocols that would support the use of carbon sequestered aggregate and concrete...While we understand there remains more work to be done, including further amendments to incorporate

CCUS and new CCUS protocols formally into program, we support the rapid adoption and implementation of the proposed amendments and look forward to continued collaboration with CARB to quickly flesh out a broader framework to support the deployment of CCUS and industrial decarbonization.(15d-BP-130.2)

Comment:

By CARB's own assessment, both CCUS and CDR technologies are critical to achieving California's 2045 carbon neutrality target. CARB's planning documents, including the 2022 Scoping Plan Update, acknowledge that large-scale deployment of CCUS and CDR is necessary to achieve long-term climate goals. While large-scale deployment remains aspirational based on current long-term investment signals, these technologies have demonstrated the capacity to significantly reduce emissions by directly preventing CO2 from entering the atmosphere or to permanently removing CO2 that has already been emitted. AB 1207 specifically directs CARB to "[c]onsider developing additional compliance offset protocols to address sectors that are not covered by the market-based compliance mechanism but are identified in the scoping plan . . . , including carbon dioxide removal ."CARB's Proposed Amendments largely defer the development of CCUS pathways pending CARB's adoption of its Carbon Capture, Removal, Utilization, and Storage Program, instead establishing new Section 95852.3 as a placeholder to address the treatment of utilized or sequestered carbon dioxide within the Program. The Proposed 15-Day Amendments attempt to provide support for CCUS and CDR development by allowing entities to use MDI allowances to support capital, electricity, and development costs associated with CCUS projects. However, they stop short of recognizing the resulting emissions reductions as eligible for compliance under the Cap-and-Invest program. This creates a structural inconsistency that is difficult to justify: the program subsidizes the deployment of CCUS yet declines to credit the very emissions reductions those investments are intended to deliver. Covered entities are therefore expected to bear the cost and execution risk of deploying these projects without receiving corresponding compliance value. The result is a weakened investment signal and a policy framework that undermines its own stated objectives of enabling cost-effective emissions reductions. Although WSPA supports the inclusion of CCUS and CDR within the MDI, the broader regulatory structure remains fundamentally incomplete. There is still no clear or direct compliance recognition under either the Cap-and-Invest Program or the MRR for emissions reductions achieved through these pathways. As a result, the program effectively signals that these investments are desirable in theory while withholding the regulatory recognition that would render them financeable in practice. For capital intensive, long-lead-time infrastructure such as CCUS and CDR, this lack of compliance value is not a minor omission but rather a binding constraint on deployment. To ensure that the Cap-and-Invest program remains effective and supports the State's long-term GHG reduction targets, CARB should

explicitly recognize qualified CCUS and CDR projects as constituting covered GHG emissions reductions eligible for meeting compliance obligations. Covered entities that capture and permanently store or verifiably remove CO2 should be allowed to reflect those reductions in their covered emissions, rather than being required to surrender allowances as though the captured GHG emissions had been released into the atmosphere. Absent such clarity, the program risks discouraging investment in precisely the technologies that CARB has identified as essential to achieving carbon neutrality. (15d-WSPA-164.10)

Comment:

We understand that the provision appropriately defers to Board-approved methodologies - much of this work will take place under the SB 905 framework. The rigor of the SB 905 process, including its emphasis on permanence, additionality, and verifiability, is well-suited to establishing the high-integrity standards necessary for CDR to function effectively as a compliance tool. Further, linking this portion of Cap-and-Invest to methodologies approved under SB905 future-proofs the regulation, enabling CARB to consider new technologies and pathways that provide permanent, verifiable, and additional removals as they are established over time.(15-CRO-170.4)

> **Agency Response:**
> No changes were made in response to these comments. See Agency Response to comment S-4.3a. For information regarding CCUS and reduction of Compliance obligation please see Agency Response to comment S-3.1a. For information regarding inclusion of CCUS in the MDI please see Agency Response to comment O-8.31.

S-4.3c Comment:

SB 905 directed CARB and other state agencies to develop standards and guidance for carbon capture, utilization, and sequestration as a climate strategy. That work remains incomplete and we acknowledge delays in budgetary funding. The proposed amendments consolidate CCUS compliance obligations in new section 95852.3 but leave the practical compliance recognition pathway dependent on future rulemaking with uncertain timelines. For capital-intensive projects, regulatory recognition Timing is not a minor detail. Facilities considering capture investments must assess the certainty of compliance treatment before committing capital.

CARB should complete the SB 905 work and consider a provisional compliance recognition pathway, with full permanence, verification, and public notice requirements intact, that allows projects to proceed while the formal methodology is incorporated into the regulation. A well-sequenced CCUS framework is part of a durable carbon market architecture.(BH-MCAA-1.12)

Agency Response:

No changes were made in response to this comment. Please see Agency Response to comment S-4.3a for the intersection of SB 905 and the Program amendments. For information regarding inclusion of a quantification methodology and reduction of compliance obligations please see Agency Response to comments S-4.2a and S-3.1a.

S-4.4a Comment:

The proposed structure creates a perverse incentive: entities that wait to deploy CCUS will benefit, while those that invested early under state encouragement are disadvantaged. CRC has installed pre-combustion CO_2 capture at Elk Hills and expects to begin injection into a federally approved Class VI sequestration project in Spring 2026. Under the current proposal, CRC would be required to surrender allowances for CO_2 that is permanently stored until CARB completes a future rulemaking adopting a quantification methodology.

This outcome contradicts statutory direction to encourage early action and undermines investment confidence The proposed structure creates a perverse incentive: entities that wait to deploy CCUS will benefit, while those that invested early under state encouragement are disadvantaged. CRC has installed pre-combustion CO_2 capture at Elk Hills and expects to begin injection into a federally approved Class VI sequestration project in Spring 2026. Under the current proposal, CRC would be required to surrender allowances for CO_2 that is permanently stored until CARB completes a future rulemaking adopting a quantification methodology.

This outcome contradicts statutory direction to encourage early action and undermines investment confidence If CARB declines to finalize a methodology now, it should include an interim provision allowing exclusion from compliance obligations for CO_2 stored in federally permitted Class VI projects that meet Subpart RR requirements. Without such an interim mechanism to provide credit for “early action” in deploying CCUS, projects nearing completion will face unnecessary financial penalties. (45d-CRC-379.4)

Agency Response:

Changes were made in response to this comment. Please see the Agency Response to comment O-8.31a for details regarding the inclusion of CCUS as a potentially eligible use under the MDI.

S-4.4b Comment:

The proposed structure creates a perverse incentive. Entities that wait to deploy CCUS will benefit, while those that invested early under state encouragement are disadvantaged. CRC has installed precombustion CO_2 capture at Elk Hills and expects to begin injection into a federally approved Class VI sequestration project in Spring

2026. Under the current proposal, CRC would surrender allowances for CO_2 that is permanently stored until CARB completes a future rulemaking adopting a quantification methodology. This outcome contradicts statutory direction to encourage early action and undermines investment confidence.

If CARB declines to finalize a methodology in this rulemaking, it should include an interim provision allowing exclusion from compliance obligations for CO_2 stored in federally permitted Class VI projects that meet Subpart RR requirements. (15d-CRC-161.4)

Agency Response:

No changes were made in response to this comment. Please see the Agency Response to comment O-8.31a for details regarding the inclusion of CCUS as a potentially eligible use under the MDI. Please see the Agency Response to comment S-5.1 regarding Subpart RR in MRR.

S-4.5 Comment:

Recognize re-carbonation (carbon uptake) by concrete as a carbon sink.

Re-carbonation is a well-documented chemical process by which hardened concrete gradually reabsorbs CO_2 from the atmosphere over its service life. This phenomenon is not speculative; it is intrinsic to cement chemistry and has been observed and quantified across a wide range of structures and climates.

As noted by CARB in the Draft SB 596 Strategy:

“At final use, cement is mixed with aggregate, admixtures, and water to create concrete. Concrete is the most common building material in the world and theoretically can be a carbon sink and a source of permanent sequestration.” (page 56)

For the California cement industry, re-carbonation is not a substitute for deep process-emissions reductions, but it is a material component of a net-zero framework. The Draft SB 596 Cement Strategy explicitly recognizes the need to account for emissions and removals across the life cycle of cement used in California. Because carbonation constitutes a measurable downstream sink associated with cement use, it is directly relevant to how greenhouse gas intensity baselines and reduction trajectories are defined under SB 596.

For CARB and other stakeholders, the policy question is not whether carbonation occurs, but how to account for it rigorously. The California cement industry is currently working with leading academic researchers on this issue to quantify the re-carbonation effect under California-specific conditions and to develop a technically robust basis for recognizing the cement in concrete as a measurable carbon sink. This effort is intended to ground future policy discussions in empirical data so that any recognition of re-

carbonation within California's climate framework, including its GHG inventory and the Cap-and-Invest program, reflects defensible science rather than generalized assumptions. (45d-NCCC -418.6)

Agency Response:

No changes were made in response to this comment. Any carbon removal method needs to be real, quantifiable, and permanent. There is not currently a Board-approved CCUS quantification methodology in place to guarantee that GHG emissions reductions in the Cap-and-Invest Program meet at least a 100-year permanence standard, as required in the Proposed Amendments. Work on CCUS provisions, including a quantification methodology, and potential additional methods of carbon removal that could be included are ongoing and being coordinated across the agency. Staff appreciates the comment and encourages the commenters to engage with future regulatory processes, including the SB 905 rulemaking.

S-4.6 Comment:

Climate Investment Fund. Many of the ideas here are good and are broadly part of an effective CAP & Trade/Invest program. In the big picture, we should provide incentives to electrify everything we reasonably can and speed up the percentage of renewable generation we have to work with. What we should be very wary of is industry ideas like "carbon sequestration & storage." Projects like the Montezuma Carbon Hub proposal are very risky in terms of cost overruns and poor ROI, unlikely to make that much of a difference in meeting our 2045 goals, and very likely to cause a lot of emissions and public health problems in the very industrial AB 617 communities we are supposed to be improving. This is simply not a place where we should be subsidizing industry. Put the money into getting to 90% renewable electricity by 2045 and ask the public and industry to "Go Electric wherever possible" Don't subsidize carbon sequestration & storage unless you can prove it makes economic sense and doesn't cause public health problems greater than the the tiny amount of GHGs that will be removed from the atmosphere. (15d-Kilbreth-166.3)

Agency Response:

No changes were made in response to this comment. The Proposed Amendments specify requirement that any future inclusion of CCUS in the Regulation is contingent upon a future Board-approved quantification methodology that is consistent with SB 905 and in alignment with the goals stated in the AB 32 Climate Change Scoping Plan. Because there is no Board-approved CCUS quantification methodology in place to guarantee that GHG emissions reductions meet at least a 100-year permanence standard, as required by the Proposed Amendments, there are no exemptions for CCUS in this

rulemaking. Work on CCUS is ongoing across the agency. Please refer to EIA response 166.1 and Agency Response to comment O-8.31b for additional information.

S-5 CCUS Provisions in MRR (Out of Scope)

S-5.1a Multiple Comments: Subpart RR

The MRR already includes a definition for “geologic sequestration,” which means “the process of injecting CO2 captured from an emissions source into deep subsurface rock formations for permanent storage.” It also provides that operators of facilities within the “source categor[y]” of “geologic sequestration of carbon dioxide” are subject to reporting under the MRR. However, the MRR did not previously explain how operators of facilities engaged in geologic sequestration were to report.

In its proposed regulation, CARB has included a new Section 95125, which clarifies that such operators must report under the version of Subpart RR of the GHGRP in effect on November 29, 2013.15 CARB should finalize this proposed amendment to the MRR. In addition to confirming that reporting by geologic sequestration facilities must conform to Subpart RR, this proposed amendment fills two important gaps in the existing MRR, which arguably does not incorporate Subpart RR by reference at all (because it only adopts GHGRP rules that were promulgated on other dates) and does not provide a definition for “surface leakage,” which is critical to ensure permanence of sequestered CO2.(45d-CEGLLC-370.3)

Comment:

CARB has proposed adopting 40 C.F.R. Part 98, Subpart RR into the Mandatory Reporting Regulation (MRR), building on its prior adoption of Subpart PP. Together, Subparts PP and RR provide comprehensive accounting of Scope 1 greenhouse gas emissions associated with CCUS projects. CARB should designate Subpart RR as the approved quantification methodology for purposes of the Cap-and-Invest Program in this rulemaking. Adoption of Subpart RR for C&I purposes would:

 Provide immediate regulatory clarity,

 Harmonize state and federal requirements,

 Avoid duplicative rulemakings, and

 Maintain environmental integrity consistent with Health and Safety Code § 39741.1.4

Failure to designate a defined methodology in this rulemaking will materially delay CCUS deployment. (45d-CRC-379.2)

Comment:

Adoption of Subpart RR within the MRR, together with clear permanence and compliance provisions, would provide the necessary elements for CARB to designate a Board-approved quantification methodology allowing CCUS projects to reduce C&I compliance obligations. CCUS projects require enormous capital investment. Companies are unlikely to proceed without assurance that stored CO_2 will reduce compliance obligations in a predictable and timely manner. If CARB is not prepared to finalize an approved methodology in this rulemaking, it should proceed with all deliberate speed to complete that rulemaking as soon as possible. There is no time to waste if the CCUS deployment levels assumed in the 2022 Scoping Plan are to be achieved. (45d-CRC-379.10)

Agency Response:

Changes were not made in response to these comments in this rulemaking. These comments refer to proposed changes to the MRR, which is outside of the scope of this rulemaking. See Agency Response to comments G-2 and G-3 in the MRR FSOR.

S-5.1b Multiple Comments: Subpart RR

CARB has proposed adopting 40 C.F.R. Part 98, Subpart RR into the Mandatory Reporting Regulation (MRR), building on its prior adoption of Subpart PP. Together, Subparts PP and RR provide comprehensive accounting of Scope 1 greenhouse gas emissions associated with CCUS projects. CARB should designate Subpart RR as the approved quantification methodology for purposes of the Cap-and-Invest Program in this rulemaking. Adoption of Subpart RR for C&I purposes would provide immediate

regulatory clarity, harmonize state and federal requirements, avoid duplicative rulemakings, and maintain environmental integrity consistent with Health and Safety Code § 39741.1.4 Failure to designate a defined methodology in this rulemaking will delay CCUS deployment.(15d-CRC-161.2)

Comment:

CARB appears to anticipate adopting additional requirements to ensure permanence and compliance of CCUS projects. CRC does not object to the development of regulations implementing these statutory requirements. CARB should, however, adopt those requirements in the current rulemaking to provide regulatory certainty. Adoption of Subpart RR within the MRR, together with clear permanence and compliance provisions, would give CARB the elements it needs to designate a Board-approved quantification methodology and allow CCUS projects to reduce C&I compliance obligations. CCUS projects require enormous capital investment. Companies will not proceed without assurance that stored CO_2 will reduce compliance obligations in a predictable and timely manner. If CARB will not finalize an approved methodology in

this rulemaking, it should complete that rulemaking as soon as possible. The CARB 2022 Scoping Plan targets California to achieve 20 million metric tons of annual sequestration by 2030. CRC alone has sought permits for 9 Class VI injection projects across CA, with a total annual sequestration capacity of over 16 million metric tons per year. With development lead times of over 4 years from the point of final investment decision, we need to have regulatory certainty within the next 9 to 12 months if we are to achieve the 2022 sequestration targets. (15d-CRC-161.3)

Agency Response:

No changes were made in response to these comments in this rulemaking. See Agency Response to comment S-5.1a. See Agency Response to comments G-2 and G-3 in the MRR FSOR.

S-5.2 Multiple Comments: CCUS Amendment Requests for the MRR

CARB should propose amendments to the MRR to establish that, when an electricity generating unit or cogeneration unit's CO2 emissions are sequestered, that quantity of CO2 is not considered an "emission" from the electricity generating unit or cogeneration unit.

The California Energy Commission ("CEC") imposes power content disclosure requirements on retail suppliers to ensure that consumers have accurate information on the emissions associated with their power. Because CEC regulations base the Power Content Label on a facility's reported emissions under the MRR, the MRR should facilitate reporting that supports accurate power content disclosures for facilities whose emissions are geologically sequestered at a Class VI UIC facility. Specifically, the MRR should report an electricity generating facility's total emissions as its net emissions, after accounting for sequestered CO2.

This amendment will ensure that commercial counterparties to CCS projects can rely upon the emission reductions achieved by CCS in conveying to their customers the carbon content of delivered electricity. (45d-CEGLLC-370.4)

Comment:

Carbon capture and sequestration retrofits of electricity generating facilities can support state carbon neutrality goals but require regulatory certainty.

Carbon capture and sequestration (CCS) is a promising and well-positioned emerging technology to support the near-term decarbonization of California's power supply, which is a key component of the state's economywide GHG reduction goals. Critically, CCS technology will allow electric utilities to significantly reduce GHG emissions while supporting affordability and reliability—two essential features of a resilient grid that will further encourage electrification of transportation, buildings, industry, and other end-

uses. It has been widely acknowledged that CCS will be necessary to reach carbon neutrality by 2045, and recent CEC modeling shows that CCS has the potential to achieve significant cost savings for the electricity sector as a clean, firm resource. CCS's ability to deliver significant, immediate emissions reductions is especially important as other emerging technologies, like green hydrogen and seasonal long-duration storage, are still under development and have not yet reached commercial maturation. It is imperative that all options for reducing electricity sector emissions remain on the table to continue and accelerate progress toward the state's decarbonization goals.

But for CCS to truly succeed in California, the electricity sector urgently requires regulatory support and certainty. Specifically, CARB must ensure that atmospheric emissions from a given electricity generating facility are the basis for attribution under the MRR and compliance obligations under the Cap-and-Invest program. To ensure complete and accurate emissions reporting, accounting, and compliance obligations, both regulations should clearly delineate roles and responsibilities at each stage of the CCS process – capture at electricity generating facilities, pipeline transport, and geologic sequestration.

The MRR is the foundation for the state's GHG emissions data and is therefore the appropriate venue to address emissions accounting for CCS. Because other agencies, regulations, and programs look to the MRR to determine facility-specific emissions factors, MRR must accurately attribute emissions; if a gas-powered facility with CCS is emitting 95 percent less than a facility situated elsewhere, that gas-powered facility should have an emissions factor reflecting its actual emissions. Gases that are not released into the atmosphere—e.g., those that are captured, transported, and sequestered or utilized—are not "emissions" that should be attributed to any electricity generating facility or operator.

SMUD appreciates that additional important work regarding financial responsibility, monitoring, and development of a voluntary unified permit application for CCS facilities will be established in the SB 905 rulemaking process, along with strategies to minimize environmental and local air quality impacts associated with CCS project development. But these revisions to the MRR need not and should not wait for that process to be complete; utilities across California, including SMUD, are evaluating and pursuing potential CCS projects today, and further delay and regulatory uncertainty will unnecessarily interrupt those carbon-reducing efforts.

California must take steps to ensure its policies, programs, and regulations support the entire ecosystem of decarbonization opportunities, including CCS. At this important juncture, CARB has a unique opportunity to pave the way for a promising tool that will deliver near-term, reliable, affordable decarbonization within the state. Accordingly,

SMUD strongly urges CARB to integrate the concepts set forth below into 15-Day language for MRR and Cap-and-Invest. (45d-SMUD-447.15)

Comment:

MRR and Cap-and-Invest should clearly differentiate the roles and responsibilities of electricity generating facilities, CO2 transportation pipelines, and geologic sequestration facilities.

To ensure complete and accurate emissions reporting and accounting at each step of the CCS process, the MRR should clearly differentiate between electricity generating facilities, geologic sequestration facilities, and CO2 transportation pipelines. This is necessary because different entities may own and control one or more of these facilities. The current MRR does not define “geologic sequestration facility” or “CO2 transportation pipeline,” but relies instead on a broad definition of “carbon dioxide supplier”28 in § 95102 (a):

(a) . . . . "Carbon dioxide supplier" means: (a) facilities with production process units, located in the State of California that capture a CO2 stream for purposes of supplying CO2 to another entity or facility or that capture the CO2 stream in order to utilize it for geologic sequestration where capture refers to the initial separation and removal of CO2 from a manufacturing process or any other process, (b) facilities with CO2 production wells located in the State of California that extract or produce a CO2 stream for purposes of supplying CO2 for commercial applications or that extract a CO2 stream in order to utilize it for geologic sequestration, (c) exporters (out of the State of California) of bulk CO2 that export CO2 for the purpose of geologic sequestration, (d) exporters (out of the State of California) of bulk CO2 that export for purposes other than geologic sequestration, and (e) importers (into the State of California) of bulk CO2. This source category is focused on upstream supply and is not intended to place duplicative compliance obligations on CO2 already covered upstream. The source category does not include transportation or distribution of CO2, purification, compression or processing of CO2, or on-site use of CO2 captured on-site.

SMUD is concerned that this definition lacks the precision needed to clearly and accurately address the scenario in which an electricity generating facility is equipped with CCS but subsequently transfers the captured carbon to another entity for sequestration. For example, category (a) of the above definition appears to cover electricity generating facilities equipped with CCS (“facilities with production process units … that capture a CO2 stream for purposes of supplying CO2 to another entity”), but not the entity that receives the CO2 for purposes of geologic sequestration. The entity(ies) that receive the captured CO2 (e.g., for transportation and sequestration) also do not appear to fall within the additional categories of the definition (production wells, exporters, importers). However, it is the entity(ies) receiving CO2 for ultimate

disposition, not the entity capturing and transferring the CO2, that should be responsible for reporting emissions that occur after that entity takes custody of the gas (e.g., to account for the quantity of transferred and sequestered emissions as well as any fugitive emissions).

SMUD therefore recommends that CARB amend definitions within both MRR and Cap-and-Invest to differentiate between these distinct roles. SMUD believes this could be accomplished by adding individual definitions for “CO2 transportation pipeline” and “geologic sequestration facility”, or by revising the definition of “carbon dioxide supplier” as follows:

(a) . . . . "Carbon dioxide supplier" means: (a) facilities with production process units, excluding electricity generating units and cogeneration units, located in the State of California that capture a CO2 stream for purposes of supplying CO2 to another entity or facility or that receive, transport or capture the CO2 stream in order to utilize it for geologic sequestration where capture refers to the initial separation and removal of CO2 from a manufacturing process or any other process, ...

This change would make clear that entities receiving a CO2 stream for purposes of sequestration or utilization are covered under the definition of carbon dioxide supplier, but electricity generating facilities that transfer responsibility for captured CO2 to another entity are not. It would also ensure that entities receiving captured CO2 for sequestration are covered by and subject to MRR requirements, which SMUD anticipates may be necessary for complete and accurate accounting of CO2 emissions. SMUD additionally recommends conforming changes to the definition in Cap-and-Invest § 95802 for consistency and to enable accurate attribution of Cap-and-Invest compliance obligations. These changes can be accomplished now and will be necessary regardless of the outcome of the SB 905 process. (45d-SMUD-447.16)

Comment:

CARB should amend MRR § 95112 (b) to expressly clarify that captured and sequestered CO2 is excluded from an electricity generating facility’s MRR report.

Under the current MRR, electricity generating facilities are generally required to report emissions using the methodologies specified in Subparts C and D of 40 CFR Part 98 or Subpart D of Part 75. SMUD’s understanding is that none of the current calculation methodologies expressly address carbon capture and sequestration. While the Tier 4 calculation methodology (i.e., calculating CO2 mass emissions using continuous emissions monitoring systems) would implicitly account for the effects of CCS, as emissions would be measured after the absorber, SMUD understands that other methodologies, such as Tier 3, would not. The scenario could therefore arise where two identical electricity generating facilities are both retrofitted with CCS with a 95 percent

capture rate and each produce 100,000 MT CO2, but one facility reports 5,000 MT CO2 using the Tier 4 methodology, and the other facility reports 100,000 MT CO2 using the Tier 3 methodology. This would be an illogical outcome and would result in inaccurate data regarding the latter facility's emissions factor.

To ensure consistent and accurate accounting, CARB should amend the MRR to clearly address the effect of CCS on electricity generating facility emissions, regardless of which calculation tier methodology is used. As described above, only CO2 that is actually emitted into the atmosphere at the time of generation should be attributed to the electricity generating facility. Reports regarding CO2 that is captured and transported to another entity for sequestration should be the obligation of the entity(ies) responsible for such transport and sequestration.

SMUD therefore recommends that CARB add a subparagraph (9) to MRR § 95112 (b) to ensure accurate accounting for reported emissions when CO2 emissions are geologically sequestered:

(b)(9) Capture, transportation and geological sequestration of CO2 either on-site or off-site. The total reported emissions for any electricity generation unit or cogeneration unit that captures carbon dioxide shall only include quantities of gases that are released into the atmosphere and are not transferred to any entity or entities responsible for the transportation, sequestration, or use of those gases, including a Carbon Dioxide Supplier, as defined in Section 95852(g).

> (A) Notwithstanding the foregoing, if the owner or operator of an electricity generation unit or cogeneration unit is also a Carbon Dioxide Supplier, or otherwise geologically sequesters CO2 produced by the facility, the owner or operator shall separately report the CO2 geologically sequestered, consistent with the requirements of Section 95123 or Section 95125, as applicable.
>
> (B) If the owner or operator of any electricity generation unit or cogeneration unit that captures CO2 and transfers the captured CO2 to a separate entity or entities, such as a Carbon Dioxide Supplier, for purposes of sequestration or use by that separate entity, the owner or operator of the electricity generation unit or cogeneration unit shall report the quantity of CO2 captured and transferred to such entity. The quantity of CO2 captured, transferred and sequestered shall not be considered an "emission" from the electricity generating unit or cogeneration unit.
>
> (C) Carbon Dioxide Suppliers responsible for the transportation, sequestration, or use of Carbon Dioxide shall be independently responsible for reporting surface leakage and other emissions of CO2 received from electricity generation and

cogeneration units, consistent with the requirements of Section 95123 or 95125, as applicable.

(D) For all electricity generation and cogeneration units utilizing carbon capture or transferring CO2 to a Carbon Dioxide Supplier, the Executive Officer shall publish emissions levels for those units that reflect only those greenhouse gases emitted into the atmosphere at the facility during the reporting period, and consistent with this section, shall exclude any quantity of greenhouse gases captured, sequestered, transported, or otherwise stored by a Carbon Dioxide Supplier. (45d-SMUD-447.17)

Agency Response:

Changes were not made in response to these comments. These comments refer to proposed changes to the MRR, which is outside of the scope of this rulemaking. See Agency Response to comment G-1 in the MRR FSOR.

S-5.3 Multiple Comments: CCUS Eligibility to reduce covered emissions

Ensure that carbon capture, utilization, and storage (CCUS) and carbon dioxide removal (CDR) projects are eligible to reduce covered emissions and are reflected in MRR net emissions reporting. (15d-BAC-61.9)

Comment:

Similarly, the MRR cannot remain unchanged in connection with any future treatment of CCUS and CDR under Cap-and-Invest. It must be updated to expressly permit reporting of net GHG emissions that reflect verified reductions from CCUS and CDR projects. Without this alignment between the MRR and Cap and-Invest regulations, entities are unable to consistently report emissions outcomes that CARB itself has identified as critical to achieving carbon neutrality, and the program continues to lack the basic accounting coherence necessary for transparent and verifiable implementation. WSPA previously provided CARB with such language and can do so again as needed to ensure proper program alignment and accurate carbon accounting.(15d-WSPA-164.11)

Agency response:

Changes were not made in response to these comments in this rulemaking. These comments refer to proposed changes to the MRR, which are outside of the scope of this rulemaking. See Agency Response to comments G-2 and G-3 in the MRR FSOR. For information regarding CCUS projects eligibility to reduce compliance obligations under the Program see Agency Response to comment S-3.1a.