May 4, 2026

California Air Resources Board
1001 I Street
Sacramento, California 95814

Electronically submitted: https://ww2.arb.ca.gov/lispub/comm/bclist.php

**RE: COMMENTS OF THE GREEN HYDROGEN COALITION ON THE 15-DAY NOTICE OF MODIFIED TEXT FOR PROPOSED AMENDMENTS TO THE CAP-AND-INVEST REGULATION**

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## I. INTRODUCTION & SUMMARY

The Green Hydrogen Coalition (GHC) appreciates the opportunity to comment on the 15-Day Amendments to California's Cap-and-Invest program, including the Manufacturing Decarbonization Incentive (MDI) allocation. With the substantial changes to climate policy at the federal level, California Air Resource Board's (Board) steadfast determination to reducing emissions and meeting the state's long-term decarbonization goals is appreciated. The GHC supports the MDI and specifically the option for purchasing low carbon hydrogen. These comments focus on the allowances relating to low carbon hydrogen, along with a request to examine and consider opportunities for encouraging local production of low carbon ammonia to displace fossil-based ammonia imports in future evolutions of the program.

The GHC is an educational 501(c)(3) non-profit organization. GHC was formed in 2019 to recognize the potential of clean renewable hydrogen and to accelerate multi-sector

decarbonization and combat climate change. GHC's mission is to facilitate policies and practices that advance clean renewable hydrogen production and use in all sectors of the economy to accelerate a carbon-free energy future. Our sponsors include foundations, clean renewable energy users and developers, utilities, and other supporters of a reliable, affordable, clean renewable hydrogen fuel economy for all. The GHC's approach is focused on scaling clean renewable hydrogen as a viable and affordable alternative to fossil fuels.

The comments herein reflect GHC's strong support for the purchasing of low carbon hydrogen through the MDI. GHC appreciates the allowance of three options for low carbon hydrogen eligibility but has concerns with the 15-Day Amendments to the third eligibility option. In summary:

- GHC strongly supports the purchase of low carbon hydrogen as part of the MDI,
- Supports the amendments proposed to the first option (meets criteria for 45V),
- Supports the reference to Eligible Renewable Energy Resources in option three,
- Opposes the inclusion of matching and delivery requirements; and
- Requests the Board to consider ways to incentivize new in-state production of decarbonized molecules that are traditionally imported into California.

## II. GHC STRONGLY SUPPORTS THE MANUFACTURING DECARBONIZATION INCENTIVE PROPOSED IN THE CAP-AND-INVEST PROGRAM.

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.

## III. GHC SUPPORTS THE PROPOSED AMENDMENT TO THE FIRST OPTION FOR LOW CARBON HYDROGEN ELIGIBILITY BECAUSE IT ENSURES THE FOCUS IS ON COMPLIANCE WITH THE FEDERAL REGULATIONS.

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]

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[1] California Air Resources Board. (2026, April 14). *Attachment A-1: Proposed 15-Day Changes to Proposed Regulation Order (Proposed Sections for Amendments)* [15-Day Changes Available for Comment]. Page 202. Proposed Amendments on California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Rulemaking Page [Accessed on April 28, 2026].

[2] One Big Beautiful Bill Act of 2025, H.R. 1, 119th Cong. (2025). https://www.congress.gov/bill/119th-congress/house-bill/1/text [Accessed on April 29, 2026].

[3] California Air Resources Board. (2026). *Notice of Public Hearing to Consider Proposed Amendments to the Cap-and-Trade Regulation [Initial Statement of Reasons/45-Day Notice]*. Sacramento, CA: CARB.

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.

## IV. GHC SUPPORTS REFERENCING THE STATUTORY DEFINITION OF ELIGIBLE RENEWBALE ENERGY RESOURCES AND RECOMMENDS CITING SPECIFICALLY TO PUBLIC UTILITIES CODE 399.12.

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).~~
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> ~~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.[4] 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.[5] 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.[6]

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[4] Energy Division - Renewable Procurement & Market Development Section (2024). *Renewables Portfolio Standards Program: Program and Compliance Information for New California Load-Serving Entities* [PowerPoint Slides]. California Public Utilities Commission. https://www.cpuc.ca.gov/-/media/cpuc-website/industries-and-topics/documents/energy/rps/2024/rps-onboarding-for-new-ca-retail-sellers-2024.pdf [Access on May 2, 2026].

[5] California Energy Commission. (2025, December 19). *Transcript of the December 19, 2025 Business Meeting*. https://efiling.energy.ca.gov/GetDocument.aspx?tn=268344&DocumentContentId=105534. [Access on May 4, 2026].

[6] At least **75%** of renewable procurement must be PCC 1, which requires the renewable energy to be delivered directly into a California Balancing Authority (CBA). See *Energy Division*.

## V. MATCHING AND DELIVERY REQUIREMENTS FOR ELECTROLYTICALLY PRODUCED HYDROGEN IN OPTION THREE SHOULD BOTH BE STRIKEN ENTIRELY BECAUSE THEY WILL CREATE CONFUSION IN THE MARKETPLACE, CHILL DEVELOPMENT, AND HINDER PROGRESS OF CALIFORNIA'S RECENT ENERGY POLICIES

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."[7] 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

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[7] California Air Resources Board, *Notice of Public Availability of Modified Text and Availability of Additional Documents and/or Information*, [Proposed Amendments to the Regulation for the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms, April 14, 2026.] P. 16. https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2026/cap_invest/nc_15d_ci_noticeada.pdf. [Accessed on May 4, 2026].

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."[8] 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.

The delivery requirement in 3(a) could unintentionally remove a substantial pool of renewable energy resources by limiting local balancing authorities. Assembly Bill 825

[8] California Air Resources Board. *About Section on LCFS*. https://ww2.arb.ca.gov/our-work/programs/low carbon-fuel-standard/about. [Accessed on April 24, 2026].

(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.[9] A preliminary study noted that this expanded regional model could provide a reduction in natural gas generation within California and overall reduce emissions.[10] 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.[11] 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.

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

[9] Assembly Bill 825 (Petrie-Norris, Chapter 116, Statutes of 2025), adding Cal. Pub. Util. Code §§ 345.1, 345.2, 345.6, & 399.16.5).
[10] California State Senate Floor. (2025). Analysis of AB 825. Sacramento, CA. https://leginfo.legislature.ca.gov/faces/billAnalysisClient.xhtml?bill_id=202520260AB825#. [Accessed on April 28, 2026].
[11] Letter from Siva Gunda, Vice Chair, California Energy Commission, to Liane Randolph, Chair, California Air Resources Board (June 2025).

quarter."[12] Furthermore, the federal 45V matching requirements are annual until 2030.[13] 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.

## VI. THE BOARD SHOULD CONSIDER WAYS TO UTILIZE THE CAP-AND-INVEST PROGRAM FOR ADDRESSING CALIFORNIA'S SUBSTANTIAL IMPORTATION OF FOSSIL FUEL-DERIVED AMMONIA

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.

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[12] California Air Resources Board, *Low Carbon Fuel Standard (LCFS) Guidance 19-01: Book-and-Claim Accounting for Low-CI Electricity,* 2019. https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/guidance/lcfsguidance_19-01.pdf. [Accessed on May 2, 2026].

[13] United States, Department of the Treasury, and Internal Revenue Service. "Credit for Production of Clean Hydrogen and Energy Credit." *Federal Register*, vol. 90, no. 7, 10 Jan. 2025. FederalRegister.gov. [Accessed on May 4, 2026].

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.

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.

## VII. CONCLUSION

California's Cap-and-Invest program has been highly effective at reducing emissions. GHC applauds the Board for the development of the MDI and including the purchase of low carbon hydrogen as a pathway for achieving industrial decarbonization. We respectfully urge CARB to adopt the recommendations above to ensure the program supports both industrial decarbonization and industrial development, and positions California as a leader in emerging clean commodity production. Thank you for your consideration of these comments.

Sincerely,

Tim Kamermayer
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Green Hydrogen Coalition