



**COMMENTS OF HIF USA**  
**ON**  
**CALIFORNIA AIR RESOURCES BOARD**  
**PROPOSED LOW CARBON FUEL STANDARD AMENDMENTS**

**FEBRUARY 20, 2024**

Highly Innovative Fuels USA (HIF USA) appreciates the opportunity to offer these comments on the California Air Resources Board (CARB or the Board) Proposed Amendments to the Low Carbon Fuel Standard (LCFS) regulation.

A subsidiary of HIF Global, HIF USA is a global eFuels company focused on harnessing renewable energy sources to achieve fuel sector decarbonization. HIF USA is currently developing a large-scale commercially viable facility for generating low-carbon eFuels that can be used in a number of transportation applications and has submitted an LCFS pathway for its process that is currently awaiting CARB approval. HIF USA's focus on eFuel development fully aligns with CARB's mission in the LCFS program to encourage private sector innovation to develop a diverse supply of low-carbon transportation fuels in California. This is why HIF USA has been an active participant supporting CARB's 2022 Scoping Plan update process and, more recently, the LCFS update process.

**I. LCFS Incentives for Low CI Methanol**

HIF USA provided testimony to the Board during the September 28, 2023 hearing on the LCFS program amendments, emphasizing one specific way that CARB could incentivize the proliferation of innovative carbon-neutral fuels in California: by amending the LCFS regulations (specifically Section 95482) to ensure that low-carbon intensity (CI) methanol (also referred to as "green methanol") is made eligible for LCFS crediting as an opt-in fuel, when sold for use in marine and other specialty transportation applications such as direct methanol fuel cells. HIF USA writes to reiterate this request as CARB considers how to craft a final rule that will create optimal incentives for a variety of low-carbon transportation fuels in California.

HIF USA's process involves using low-CI electricity to power a process known as electrolysis. This process produces "green hydrogen" by breaking water molecules into hydrogen and oxygen. The hydrogen is then combined with CO<sub>2</sub> captured from biogenic or industrial sources to produce green methanol in a reactor through a process called synthesis. Further processing will produce other carbon-neutral eFuels that could be used for different purposes, such as eGasoline for road transport, Sustainable Aviation Fuel for air transport, and liquefied petroleum gas (LPG). HIF USA is currently in the front-end engineering and design phase for an eFuels facility in Texas that will produce carbon-neutral drop-in fuels, such as green methanol, for sale in the California transportation fuels market. As noted above, HIF USA has submitted to CARB a request for LCFS pathway approval so that its process may generate credits under the program.

Amending the LCFS regulations to identify green methanol as an opt-in fuel would create an important incentive for low-CI fuels in hard-to-decarbonize sectors such as marine transportation. Currently the LCFS regulations do not identify green methanol as an opt-in fuel, and they provide that transportation fuel used in most ocean-going vessels is exempt from regulation, meaning that



there is no opportunity for low-CI methanol created via HIF USA’s process to generate LCFS credits. CARB could amend the LCFS regulations to incentivize the production and sale of this fuel in California by specifying (1) that opt-in entities can obtain LCFS credits for low-CI methanol volumes sold for use in marine applications, and/or (2) that the aforementioned LCFS exemption does not apply to methanol provided as a transportation fuel for ocean-going vessels.

In a presentation during an LCFS workshop held in July 2022, CARB staff indicated that it was considering the inclusion of methanol as an opt-in fuel for “novel applications,” including “commercial harbor craft” under Tier 2 EER-adjusted pathways. Yet, the proposed regulations issued in these proceedings do not include this proposed change. We encourage CARB to pick this up again and specify in the forthcoming proposed rule that opt-in entities can obtain credits for low-CI methanol provided as a transportation fuel in marine and other specialty applications. To create as comprehensive an incentive possible for green methanol, we request that CARB allow any such fuel used in ocean-going vessels in California to qualify as an LCFS opt-in fuel.

According to the Methanol Institute, as compared to conventional fuels, green methanol cuts carbon dioxide emissions by up to 95%, reduces nitrogen oxide emissions by up to 80%, and completely eliminates sulfur oxide and particulate matter emissions.<sup>1</sup> Further, as explained by the Methanol Institute, the large-scale integration of low-carbon and net carbon neutral fuels, such as green methanol, at an accelerated rate in marine applications will be fundamental to achieving international targets for GHG reductions in the marine sector.<sup>2</sup>

Demand for methanol as a marine transportation fuel has grown steadily in recent years, as major shipping companies have built out their ship fleets capable of running on methanol. Allowing low-CI methanol to generate LCFS credits will further stimulate demand by making this fuel more readily available and cost-effective, ultimately incentivizing shipping companies to grow their ship fleets able to use green methanol and reducing emissions from the marine transportation sector.<sup>3</sup>

## **II. Proposed Regulatory Text for Book-And-Claim Accounting for Low-CI Electricity**

In the text of its proposed regulatory amendments, CARB appears to have proposed a change to 17 C.C.R. § 95488.8(i)(1)(A) that could potentially restrict the ability of eFuels proponents to use book-and-claim accounting (and specifically, Renewable Energy Certificates (RECs)) to claim the emission benefits of low-CI electricity used for hydrogen production through electrolysis used in the production of a transportation fuel. Because this potentially significant change is not explicitly addressed in the Initial Statement of Reasons (ISOR) that CARB issued with the proposed regulatory amendments, HIF USA presumes that it was inadvertent. We thus request clarification that CARB

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<sup>1</sup> See Methanol Institute, “Renewable Methanol,” <https://www.methanol.org/renewable/>.

<sup>2</sup> See Methanol Institute, “Components in Measuring GHG Intensity of Marine Fuels,” <https://www.methanol.org/marine/>.

<sup>3</sup> Incentivizing the use of green methanol in California’s marine transportation sector is also consistent with emission reduction initiatives of several of the major California ports. For instance, the Ports of Los Angeles and Long Beach recently announced efforts to establish a trans-Pacific green shipping corridor between California and Asia to accelerate emissions reductions on one of the world’s busiest container shipping routes. See Port of Los Angeles, “Ports of Los Angeles, Long Beach, and Shanghai Unveil Implementation Plan Outline for first Trans-Pacific Green Shipping Corridor,” [https://www.portoflosangeles.org/references/2023-news-releases/news\\_092223\\_green\\_shipping\\_corridor](https://www.portoflosangeles.org/references/2023-news-releases/news_092223_green_shipping_corridor). Providing LCFS incentives for green methanol used in ocean-going vessels will significantly support this effort.



did not intend to eliminate the use of book-and-claim accounting for low-CI electricity used for hydrogen production through electrolysis and that CARB not finalize the language as proposed.

Specifically, HIF USA is concerned with the proposed amendments to 17 C.C.R. § 95488.8(i)(1)(A) reflected in Appendix A-1:Proposed Regulation Order as follows:

(i) Indirect Accounting for ~~Renewable or~~ Low-CI Electricity and, ~~Biomethane, and Low-CI Hydrogen.~~

(1) Book-and-Claim Accounting for ~~Renewable or~~ Low-CI Electricity Supplied as a Transportation Fuel, Direct Air Capture projects, or Used to Produce Hydrogen as a transportation fuel. Reporting entities may use indirect accounting mechanisms for low-CI electricity supplied as a transportation fuel ~~or~~, for hydrogen production ~~through electrolysis and processing for transportation purposes (including hydrogen that is used in the production of as a transportation fuel),~~, or for direct air capture projects, provided the conditions set forth below are met:

(A) ~~Reporting entities may report low-CI~~ For electricity used as a transportation fuel ~~or as an input to hydrogen production delivered through, the grid without regard to physical traceability if it meets all requirements of this subarticle. The low-CI electricity must be supplied to the grid within a California Balancing Authority . . .~~<sup>4</sup>

Based upon this markup to the existing regulatory text, CARB appears to propose to strike the provisions in 17 C.C.R. § 95488.8(i)(1) that currently allow eFuels producers to use indirect accounting for low-CI electricity supplied for hydrogen production through electrolysis. The ISOR is silent with respect to any specific intent to eliminate such accounting, however. In fact, CARB’s ISOR reflects an intent to *expand* book-and-claim accounting to “support . . . low-CI hydrogen production,” specifically by allowing fuel producers to use indirectly match power produced under dedicated power purchase agreements (PPAs) with power used for “both process electricity as well as for hydrogen production” in the context of hydrogen used as a transportation fuel.<sup>5</sup>

As CARB makes no mention in the ISOR of an intent to curb the use of book-and-claim accounting (including via RECs) for low-CI electricity used for electrolysis, HIF USA presumes the above-referenced strikeouts are inadvertent errors and not intended to be part of the proposed action. We request that CARB confirm this point in the FSOR and make the appropriate corrections. Specifically, HIF USA requests that CARB adopt a modified version of its proposed text that would preserve the use of RECs to book-and-claim low-CI electricity used to produce hydrogen through electrolysis, such as the following:

(i) Indirect Accounting for ~~Renewable or~~ Low-CI Electricity and, ~~Biomethane, and Low-CI Hydrogen.~~

<sup>4</sup> See CARB, Appendix A-1: Proposed Regulation Order (Proposed Sections for Amendments) (Updated 1/2/2024) at 148-149, <https://ww2.arb.ca.gov/rulemaking/2024/lcfs2024>.

<sup>5</sup> CARB, Staff Report: Initial Statement of Reasons (Dec. 19, 2024) at 34, <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2024/lcfs2024/isor.pdf>.

(1) ~~Book-and-Claim Accounting for Renewable or Low-CI Electricity Supplied as a Transportation Fuel, Direct Air Capture projects, or Used to Produce Hydrogen as a transportation fuel.~~ Reporting entities may use indirect accounting mechanisms for low-CI electricity supplied as a transportation fuel ~~or, for hydrogen production through electrolysis and processing for transportation purposes (including hydrogen that is used in the production of as a transportation fuel), or for direct air capture projects,~~ provided the conditions set forth below are met:

(A) ~~Reporting entities may report low-CI~~ For electricity used as a transportation fuel ~~or as an input to hydrogen production delivered through, the grid without regard to physical traceability if it meets all requirements of this subarticle. The low-CI electricity must be supplied to the grid within a California Balancing Authority . . .~~

HIF USA requests that CARB make conforming changes throughout its proposal to ensure the broadest possible use of indirect accounting for low-CI electricity used in the hydrogen production process. To the extent this proposed change was not inadvertent, HIF USA requests that CARB not adopt it or if it intends to proceed, CARB should provide another comment period and discuss the technical and policy bases for such a change to allow for adequate public comment opportunity on such an important issue, given the current preamble language that indicates the opposite intent.

### III. Conclusion

HIF USA recognizes, as CARB does, that this is a critical moment in history to address global climate change. We see this challenge as an opportunity, one that can be accelerated through the key incentives provided in the LCFS program. We look forward to working with CARB staff on our LCFS pathway application that will facilitate bringing innovative fuels to California, including green methanol.

If you have any questions or would like to discuss these comments, please contact Shannon S. Broome, Hunton Andrews Kurth LLP ([sbroome@huntonak.com](mailto:sbroome@huntonak.com)) or (415) 818-2275.