California Hydrogen Coalition

December 7, 2020

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California Air Resources Board
1001 Ninth Street
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Re: Public Workshop to Discuss Potential Regulatory Revisions to the Low Carbon Fuel Standard

The California Hydrogen Coalition (CHC) appreciates the opportunity to provide comments on Potential Regulatory Revisions to the Low Carbon Fuel Standard. We appreciate the work that Air Resources Board (ARB) Staff has put into the LCFS to date and the opportunities and investments its generated for the build out of hydrogen fueling infrastructure to support the state's growing fleet of fuel cell electric vehicles. To that end, we have provided four recommendations that could enhance the LCFS and accelerate bringing additional decarbonized hydrogen into the marketplace.

The mission of CHC is to enable California's transition to zero emission vehicles (ZEVs) by expanding the availability of reliable, convenient, and affordable hydrogen fueling to support the state's emission reduction goals. We are confident light, medium, and heavy-duty FCEVs will play a critical role in California's transition to a zero-emission transportation sector because of the advantages this technology provides today with respect to range, size, and fast refueling, and may soon provide for cost and carbon intensity reductions. CHC is equally confident in the development of a hydrogen fuel market that will continue providing quality jobs and opportunities to decarbonize locally owned fueling stations throughout California. FCEVs and hydrogen closely emulate existing consumer behavior for the gasoline and diesel vehicle experience which eliminates the pressure to change consumer behavior while the jobs associated with the existing distribution and fuel delivery markets. We are excited and prepared to accelerate the adoption of this ZEV technology over the next several years.

Summary of Recommendations

In the 2020-2021 rules cycle for LCFS, we are seeking several changes to the regulations that would enable hydrogen providers and vehicle drivers in California to reduce their carbon footprints while simultaneously increasing investments in low-carbon production and supply.

This document outlines two levels of recommendations. Firstly, those that affect the scope and impact of the overall policy itself:

Item 1: Extending the station HRI credits to include HD and MD vehicle refueling stations

Item 2: The LCFS should allow the decoupling of the environmental attributes of RNG so that RNG may be used both to produce renewable hydrogen and to generate RFS credits for natural gas used as a transportation fuel. Decoupling the RFS credits and LCFS credits would overcome the market limitations caused by not having H2 pathways in the current federal RFS programs.

Secondly, we have two additional recommendations that are policy clarifications and improvements that should have more modest policy impacts. These include:

Item 3: Allowing renewable process energy to be used to reduce the carbon intensity of hydrogen, similar to production feedstocks

Item 4: Allow for book-and-claim processes for hydrogen when it is supplied from mixed supply schemes such as pipeline networks connecting multiple production sources or bulk gaseous/liquid storage.

Background and supporting information are included in the following pages.

Item 1: Extending the station HRI credits to include HD and MD vehicle refueling stations

We are recommending that MD/HD stations be explicitly included in the HRI provisions of § 95486.2. *Generating and Calculating Credits for ZEV Fueling Infrastructure Pathways.* It is our understanding that, as written, the current regulations were intended for LDV infrastructure only.

Because of the higher capacity of MD/HD stations, we ask that for these applications, the capacity limit for MD/HD stations be scaled to the needs per the ARB's discretion. Crediting should be proportional to capacity to ensure that the business case for the station is hydrogen dispensing and not crediting.

We ask that the program have similar bounds to the LDV stations, using a limit of an additional 2.5 percent of deficits in the prior quarter for pathway approvals to be granted.

CHC would like to discuss with staff any additional provisions that would differ from the current HRI provisions to best suit HD/MD vehicles.

California Hydrogen Coalition

Justification

California has established aggressive regulations for decarbonizing the medium- and heavy-duty transportation sectors. These will require significant infrastructure upgrades for all ZEV platforms, and given the even bigger role that FCEVs must play to meet the recent MD/HD mandates in the ACT Regulation – further reinforced by EO N-79-20 – will require urgent HRI buildout for these sectors.

The addition of HRI credits for LDV stations has been very successful in advancing the LDV network, encouraging larger stations to enter the market earlier, and has resulted in substantial private investment in stations. This is most easily seen in the results of the most recent station funding announcements (GFO-19-602) where the average proposed station is approximately 200% larger than the average for previous station awards and the state contribution has been reduced from 60-75% to less than 30%. This has resulted in a net improvement in the state's investment (on a per kg dispensed basis).

Leveraging the success of the LDV HRI program to HD/MD applications is expected to have similar results. CA has established very aggressive schedules and policies advancing zero-emission truck and bus adoptions which will require similarly aggressive growth in the refueling networks required to fuel these vehicles. By implementing the recommended MD/HD HRI changes, we anticipate industry's response through further infrastructure investments would help enable this network growth.

Item 2: Decoupling the use of RFS credits and LCFS credits to overcome the market limitations of not having H2 pathways in the current federal RFS programs.

In the current renewable fuels markets, California's LCFS program is complimented by the federal EPA Renewable Fuels Standard (RFS) Program which enables renewable fuel providers to capture value in supplying renewable fuels along approved pathways. Currently, the EPA has no approved renewable H2 pathways which disincentivizes a fuel provider from supplying into this market. We are recommending CARB decouple the RFS and LCFS pathways such that hydrogen is given an equal opportunity to generate these credits.

RNG as an example: If an RNG supplier chooses to sell into a CNG application in CA, that seller is eligible to generate RINS through the approved EPA pathway and to generate fuel credits in the LCFS program along the similarly approved LCFS pathway. If that same RNG supplier, however, chooses to sell into a H2 production application in CA, only the fuels credits from the LCFS pathway are generated.

It is our recommendation to decouple these pathways such that if the RNG supplier chooses to sell RNG into a CNG (or similar RFS) pathway, the supplier could choose to generate ONLY the EPA RINS while retaining the LCFS environmental attributes of the RNG to be sold to a H2 application in CA. Effectively, the supplier could then capture the full value of the credits from both programs without the need for EPA H2 pathway approvals. We would anticipate this option to be terminated for any H2 pathways that are approved by the EPA RFS program in the future.

Applying such a process to the supply of renewable fuels in CA would enable H2 to have a market opportunity for renewable energy providers and would incentivize further sales and investments into renewable H2 production and supply pathways for the state.

Item 3: Allowing for process energy used in hydrogen production to use power-purchase agreements for low-carbon energy to be credited within the pathways similar to production feedstocks

Per the current regulation: *§ 95488.8. Fuel Pathway Application Requirements Applying to All Classifications*

> *(h) Renewable or Low-CI Process Energy. Unless expressly provided elsewhere in this sub article, indirect accounting mechanisms for renewable or low-CI process energy, such as the use of renewable energy certificates, cannot be used to reduce CI. In order to qualify as a low-CI process energy source, energy from that source must be directly consumed in the production process as described in (1) and (2) below:*

In order to provide equal benefit to fuels, **we recommend that the use of RECs qualify for all fuel pathways in both feedstock and process energy applications.**

By allowing for renewable energy credits (REC) to be used for feedstocks but not for process energy, the regulation significantly limits the potential to have the lowest possible CI fuels for consumers. This disproportionally affects hydrogen supply as the contribution to CI of process energy in the forms of compression, refrigeration, liquefaction, pumping and distribution is significantly higher than for other fuel options.

In order to address concerns about traceability, tracking, and reporting of these RECs across different regions, we would suggest that a certified third-party validation process be invoked to hold the reporting entities accountable for their pathway compliance.

California Hydrogen Coalition

Item 4: Allow for book-and-claim processes for hydrogen when it is supplied from mixed supply schemes such as networks connecting multiple production sources or bulk gaseous/liquid storage.

ARB staff has advised that the use of book-and-claim or equivalent methods to capture renewable energy credits in a fuel pathway is not allowed as it has not been explicitly indicated in the current regulation.

We are recommending that book-and-claim accounting be allowed under the current regulations.

By not allowing for such accounting methods, hydrogen suppliers are unable to provide the lowest possible CI fuels when the production, storage, or distribution of fuels involves mixed production supply schemes.

Example 1: A likely hydrogen supply scenario can have multiple production sources feeding into a single liquefier and or bulk storage system (vessels, tanks, or caverns). Without allowing for this book-and-claim scenario, when hydrogen from such a facility is distributed to a fuel retailer, the CI content can only be reported as the bulk average of the storage system. As hydrogen production increases for the transportation market, cost reductions through large scale, multi feed supply schemes are expected. Without book-and-claim on the hydrogen, the use of such schemes and in the investment in low-carbon production is disincentivized.

Example 2: In some processes, such as renewable diesel production, the use of low-CI hydrogen from a pipeline system is a feedstock that helps enable the lowest possible CI final product. Such pipelines would typically have multiple H2 production sources with varying CI scores feeding it and, without being able to use book-and-claim methods to tie renewable diesel production to specific H2 sources along the pipeline, optimizing these low CI fuels is not possible and the addition of low-CI H2 sources to pipeline networks is not incentivized.

In Conclusion

With announcements for substantial national and international investments in hydrogen production and infrastructure it is important to capitalize on the moment in California. CHC believes the moment to advance policies to further enable the development of lower-carbon fuels with zero carbon end uses like hydrogen and fuel cell electric vehicles is now. Previous LCFS rulemakings that have encouraged hydrogen have resulted in hundreds of millions of dollars in investment for low-carbon and renewable fuel production and hydrogen refueling

infrastructure. We are hopeful that ARB is willing to work with CHC to capitalize on the signals sent by the Governor's Executive Order to advance hydrogen production and refueling and further enable zero emission vehicles. CHC is committed to working diligently with ARB staff to further refine our recommendations over the next few months and bring more investment to California's transforming transportation and energy markets.

We appreciate the opportunity to comment on the workshop and urge ARB to open a more robust proceeding for the LCFS, specifically as it relates to hydrogen as a transportation fuel. If there are any questions, please contact me at TCooke@BHFS.com or our government affairs representative at the Gualco Group Inc., Mikhael Skvarla at Mikhael_Skvarla@gualcogroup.com.

Thanks you,

/s/

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