DOCKETED	
Docket Number:	21-IEPR-07
Project Title:	Clean Transportation Benefits
TN #:	239315
Document Title:	California Hydrogen Business Council Comments - Transportation Benefits Report Workshop CHBC Comments
Description:	N/A
Filer:	System
Organization:	California Hydrogen Business Council
Submitter Role:	Public
Submission Date:	8/13/2021 4:03:37 PM
Docketed Date:	8/13/2021

Comment Received From: California Hydrogen Business Council
Submitted On: 8/13/2021
Docket Number: 21-IEPR-07

21-IEPR-07 Transportation Benefits Report Workshop CHBC Comments

Additional submitted attachment is included below.

CALIFORNIA HYDROGEN BUSINESS COUNCIL
Hydrogen Means Business in California!

18847 Via Sereno
Yorba Linda, CA 92886
Phone: (310) 455-6095 | Fax: (202) 223-5537
info@californiahydrogen.org | www.californiahydrogen.org

California Energy Commission
Docket Unit, MS-4
Docker No. 21-IEPR-07
1516 9th Street
Sacramento, CA 95814

August 13, 2021

RE: 21-IEPR-07 Transportation Benefits Report Workshop

I. INTRODUCTION

The California Hydrogen Business Council (CHBC)[1] appreciates the opportunity to submit comments on 21-IEPR-07 Transportation Benefits Report Workshop ("21-IEPR-07"). The 21-IEPR-07 workshop highlighted much of the progress California has enjoyed towards decarbonization through the Clean Transportation Program (CTP). Many benefits of the CTP were presented throughout the workshop and notices for future grants were promoted. However, with the climate crisis raging through California's forests and drying reservoirs, it is imperative for California to maximize the benefits of the CTP and expand funding eligibility to all technologies that contribute to decarbonization. Specifically, the CHBC supports (1) expanding the 200 light-duty hydrogen refueling station goal that is set to support only 230,000 fuel cell electric vehicles (FCEV) to a 1,000-station goal that would support approximately 1 million FCEVs[2], (2) allocating funding for 200 heavy-duty hydrogen refueling stations, and (3) utilizing a carbon intensity score in determining all funding awards under the CTP.

The CHBC respectfully submits the following comments in response to the workshop.

II. DISCUSSION

[1] The CHBC is comprised of over 120 companies and agencies involved in the business of hydrogen. Our mission is to advance the commercialization of hydrogen in the energy sector, including transportation, goods movement, and stationary power systems to reduce emissions and help the state meet its decarbonization goals**. The views expressed in these comments are those of the CHBC, and do not necessarily reflect the views of all of the individual CHBC member companies.** CHBC Members are listed here: https://www.californiahydrogen.org/aboutus/chbc-members/

[2] California Fuel Cell Partnership, "A California Fuel Cell Revolution: A Vision for 2030." 2019. https://cafcp.org/blog/california-fuel-cell-revolution-vision-2030.

a. To provide access and equity to all Californians transitioning to zero-emissions vehicles over the next decade, the current 200 light-duty hydrogen refueling stations by 2030 goal must be increased to 1,000 stations.

While battery electric vehicles (BEV) share an important solution for light-duty zero-emissions mobility, the charging process is not an option for many Californians who will have to transition to zero-emissions vehicles within the next decade. More than 80% of BEV drivers charge at home due to convenience and cost effectiveness.[3] However, many Californians, especially those living in low-income communities, reside in homes where BEV charging is not feasible, convenient, or affordable. Nearly half of all homes in the state are not single detached units and over 50 percent of Californians live in multi-unit dwellings.[4] Moreover, low-income people are most likely to live in rental units where BEV charging is either unavailable, limited by parking spaces and/or cost prohibitive to install. FCEVs will be key to enabling equitable and affordable access to ZEVs because multi-unit dwellings and on-street parking do not typically provide convenient, cost-effective access to EV charging.

Centralized hydrogen refueling is the more pragmatic ZEV fueling option for many Californians, including low-income drivers. Hydrogen refueling for FCEVs is centralized and convenient, it requires no up-front cost by customers, and has been developed under a retail distribution model which has evolved over decades of customer experience to maximize convenience, access to amenities, and other related services. Further, the addition of zero emission hydrogen fuel to retail distribution centers requires no financial investment from the communities they serve. These retail distribution centers provide similar properties of speed and convenience as today's petroleum refueling model and stand to serve the largest number of consumers with the highest level of convenience.[5] To ensure that driving a ZEV will be equitably available to all California drivers, state funding should support the advancement of FCEVs and hydrogen fueling centers, including hydrogen refueling centers in low-income communities.

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[3] https://www.energy.gov/eere/electricvehicles/charging-home
[4] https://energyinnovation.org/wp-content/uploads/2020/09/Increasing-Electric-Vehicle-Charging-at-Multi-Unit-Dwellings_FINAL3.pdf
[5] https://www.energy.gov/eere/articles/5-things-know-when-filling-your-fuel-cell-electric-vehicle.

Currently, the state plans on funding 179 light-duty hydrogen refueling stations by 2026, estimated to serve approximately 230,000 FCEVs.[6] Additionally, California has a stated goal of five million zero-emission vehicles on the road goal by 2030[7] and 100 percent zero-emission new vehicles sales by 2035[8], which requires charging and fueling support for at least six million ZEVs by 2035. As stated previously, almost half of Californians are not able to invest in BEVs due to difficulties with charging accessibility and charging time; therefore, the state's investment in ZEVs should reflect the needs of almost half of Californians that will be investing in FCEVs to meet their transportation needs. In a 2019 report by the California Fuel Cell Partnership (CaFCP), the CaFCP estimated 1,000 hydrogen refueling stations will serve 1 million FCEVs by 2030.[9] Working off the math provided by the 21-IEPR-07 workshop that calculated that 230,000 FCEVs would be supported by 179 hydrogen refueling stations, 1,000 hydrogen refueling stations will support approximately 1.2 million FCEVs.[10] Both of these reports make it clear the 200 station goal falls terribly short in helping California meet it's five million FCEV goal by 2030 and 100 percent zero-emission new vehicles sales by 2035 because those needing FCEVs will have extremely limited refueling options which are necessary for vehicle operation.

The CHBC supports increasing funding to meet the goal of 1,000 hydrogen refueling stations by 2030.

b. Allocating funding for 200 heavy-duty hydrogen refueling stations is necessary to decarbonize the heavy-duty trucking industry that makes up 9 percent of California's total greenhouse gas (GHG) emissions.

Heavy-duty trucks make up only 2 percent of the vehicles on the road in California but 9 percent of the state's GHG emissions as well as 3 percent of the particulate emissions and 32 percent of nitrogen

[6] 21-IEPR-07 Transportation Benefits Report Workshop, July 30.
[7] B-48-18; https://www.ca.gov/archive/gov39/2018/01/26/governor-brown-takes-action-to-increase-zero-emission-vehicles-fund-new-climate-investments/index.html.
[8] N-79-20; https://www.gov.ca.gov/wp-content/uploads/2020/09/9.23.20-EO-N-79-20-Climate.pdf .
[9] California Fuel Cell Partnership, "A California Fuel Cell Revolution: A Vision for 2030." 2019. https://cafcp.org/blog/california-fuel-cell-revolution-vision-2030.
[10] 21-IEPR-07 Transportation Benefits Report Workshop, July 30.

oxides—an unsustainable industry model that not only warms the planet but has immediate negative affects on local air pollution.[11] California has set a goal of 100 percent heavy-duty ZEV sales by 2045, where feasible,[12] which is a necessary target on the path to decarbonization. However, there is no heavy-duty specific hydrogen refueling station goal to support this monumental transition within the heavy-duty industry. The CHBC supports establishing a heavy-duty hydrogen refueling station goal and will continue to advocate for such in every applicable policy venue. The CHBC defers to the CaFCP's most recent report, "A California Fuel Cell Electric Trucks: A Vision for Freight Movement in California and Beyond," that states 200 heavy-duty hydrogen refueling stations will be necessary to service the 70,000 heavy-duty FCEVs needed to decarbonize and eliminate the harmful local pollutants of the heavy-duty trucking industry.[13] Like the light-duty industry, hydrogen refueling stations are necessary to support the growing number of FCEVs on the road. Because of the heavy-duty FCEVs' ability to carry industry required payload, refuel quickly, drive exceptionally long distances, and infrequently incur maintenance due to limited parts within the fuel cell,[14] the FCEV heavy-duty truck will be the answer for many trucking and transport companies in the near future.

The CHBC encourages set-aside funding for the deployment of 200 heavy-duty hydrogen refueling stations within the CTP to clean California's air and drastically reduce GHG emissions.

c. Including a carbon intensity score as an eligibility metric for all CTP funding is necessary for California to reach the stated GHG emission reduction goals.

The value of hydrogen in a decarbonizing economy can be measured is a variety of ways. Traditionally, hydrogen has been grouped by colors based on the method by which the fuel was produced – grey, blue, green, pink, yellow, white, etc. Integrating the many colors of hydrogen into complex regulatory decarbonization programs is a difficult task and relies solely on broad definitions which are not

[11] California Fuel Cell Partnership, "A California Fuel Cell Electric Trucks: A Vision for Freight Movement in California and Beyond." 2021.
[12] N-79-20; https://www.gov.ca.gov/wp-content/uploads/2020/09/9.23.20-EO-N-79-20-Climate.pdf.
[13] California Fuel Cell Partnership, "A California Fuel Cell Electric Trucks: A Vision for Freight Movement in California and Beyond." 2021.
[14] *Id*.

based on objective science, provide little insight, or (relative decarbonization) value in terms of comparing one source of hydrogen or emerging decarbonization technologies against another.

The CHBC supports a move away from color base definitions of hydrogen for regulatory programs and instead, supports an objective science-based approach that provides an easy-to-use method for comparing production pathways across the hydrogen spectrum. The CHBC supports a Carbon Intensity (CI) index, or CI score be used to classify various forms of hydrogen. By way of example, CARB currently uses a CI based model to compare the relative carbon values of transportation fuels in the Low Carbon Fuel Standard (LCFS).[15] Expanding CTP funding eligibility for fuel pathways based on CI scores provides regulators, the regulated, and project developers an objective way to plan, set standards, and invest with certainty.

Like the LCFS, CI based regulatory glidepaths can be developed for any technology seeking funding under the CTP. For example, the CTP's grant funding opportunity, GFO-20-609 is awarding 7 million dollars to prospective projects that can produce equal or less than 30g of CO2e/MJ.[16] This type of CI based eligibility should be applied to all funding opportunities under the CTP to allow new and emerging technologies that do not fit under established titles or come from specified feedstocks to be funded, and if successful, implemented in the fight to reduce the state's GHG emissions. Under this regimen, regulators can assess the interim and end goals of any project, develop a compliance pathway that provides insurance that the goals will be met, and bring certainty for investors who can evaluate project risks and rewards against clear, well-defined regulatory requirements. Longer glidepaths create greater compliance flexibility, investment planning horizons, and market certainty for investors.

The CHBC supports the use of a CI score for eligibility requirements within all CTP funding opportunities to ensure the most effective technologies are being utilized to ensure California reaches its decarbonization goals.

III. CONCLUSION

[15] University of California, Berkeley Law. "California Climate Policy Fact Sheet: Low Carbon Fuel Standard." 2019.
[16] 21-IEPR-07 Transportation Benefits Report Workshop, July 30.

The CHBC appreciates the opportunity to submit comments on 21-IEPR-07 Transportation Benefits Report Workshop and respectfully recommends consideration of the aforementioned proposals.

Respectfully Submitted,

Sara Fitzsimon Nelson, J.D.
Policy Director
California Hydrogen Business Council