BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Continue the Development of Rates and Infrastructure for Vehicle Electrification.	Rulemaking 18-12-006 (Filed December 13, 2018)

REPLY COMMENTS OF THE CALIFORNIA HYDROGEN BUSINESS COUNCIL ON SECTIONS 2, 3.1, 3.2, 3.3, 4, AND 5 OF THE ENERGY DIVISION'S DRAFT TRANSPORTATION ELECTRIFICATION FRAMEWORK

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I. Introduction

The California Hydrogen Business Council (CHBC)[1] welcomes the opportunity to submit reply comments on Sections 2, 3.1, 3.2, 3.3, 4 and 5 of the Energy Division's Draft Transportation Electrification Framework (TEF), pursuant to Rule 14.6 of the Commission's Rules of Practice and Procedure and Administrative Law Judge Doherty's March 24, 2020 e-mail ruling. We appreciate the recognition in the TEF of the CPUC's authority to set rates associated with hydrogen fuel cell electric transportation[2] and specifically wish to reply to the following opening comments.

II. Reply Comments

A. We agree with comments by California Independent System Operator (CAISO), CALSTART and others that the TEF should be more generally inclusive of hydrogen fuel cell electric transportation technology, which is a prominent priority of state policy goals.

The CAISO states that "the TEF should acknowledge that hydrogen-based transportation is a state goal." While the TEF does allude to the fact that since 2009, "legislation and Executive Orders have established a priority on plug-in electric and hydrogen fuel cell vehicles that are not

[1] The CHBC is comprised of over 100 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 dependence on oil. 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] TEF, Section 2.2, footnote 26

sources of emissions when in operation, also known as ZEVs,"[3] and while the CHBC appreciates this, this acknowledgement is relegated to a footnote. In the entire 200 page TEF, mention of hydrogen fuel cell technology only appears in one other location, also a footnote.[4] We believe this minimal mention does not reflect the importance of hydrogen fuel cell technology to realizing California's policy goals on zero emissions transportation.

Light duty hydrogen fuel cell electric vehicles, although they may be fewer in number than battery electric vehicles on California roads today, are an essential solution for expanding ZEV access to people who cannot easily plug in at a single family home, which the California Energy Commission pointed out at the April 20 TEF workshop, represents many if not most low income California residents.[5]

Hydrogen fuel cell vehicle technology also holds particular promise to transition the MHDV sector to zero emissions. CALSTART rightly points out that "many MHDV fleets are pursuing fuel-cell electric vehicles powered by hydrogen."[6] This is because, as the Energy Commission's *2019 Integrated Energy Policy Report* recognizes, "Relative to today's battery-electric heavy-duty vehicles, fuel cell electric trucks and buses offer the advantages of reduced weight, longer range, and quicker refueling times, all of which are important factors to public and commercial fleets."[7] These attributes enable hydrogen fuel cell heavy duty vehicles to offer a 1:1 replacement for medium and heavy duty diesel vehicles, which are the largest source of pollution threatening public health with respiratory illnesses and other serious ailments that are all the more dangerous in the era of COVID-19, especially in disadvantaged communities.

TURN furthermore states that hydrogen fuel cell electric vehicles are among the options that go unaddressed in the TEF that can enable California to decarbonize transportation.[8] We agree that the TEF ought to better recognize the need for hydrogen fuel cell electric vehicle and fueling technology to lower greenhouse gas emissions from the transportation sector, which is responsible for the largest share of emissions in California. In fact, hydrogen fueling is decarbonizing at a faster rate than the electricity grid, having already surpassed the 33%

[3] TEF, p. 9, footnote 8
[4] TEF, p. 15, footnote 26
[5] See Slide 4, *Investor-Owned Utility Roles in Transportation Electrification,* Noel Crisostomo, April 20, 2020
[6] CALSTART Opening Comments, p. 9
[7] *2019 IEPR,* California Energy Commission, p. 92
[8] TURN Opening Comments, p. 6

renewable hydrogen requirement mandated by SB 1505 to reach 39% renewable hydrogen content.[9] The international hydrogen industry has committed to achieving 100% decarbonized hydrogen for transportation by 2030,[10] a goal that CHBC supports and that is 15 years before battery electric vehicles are expected to be fully decarbonized in California.

B. The CHBC also asks the CPUC to clarify its response to party questions over its jurisdiction over electricity rates throughout the hydrogen transportation fueling supply chain.

CAISO comments that the "TEF does not include hydrogen-related infrastructure to support fuel cell electric vehicles."[11] CALSTART similarly comments that the "TEF seems to be silent on the IOU role in supporting hydrogen infrastructure" and calls for "at a minimum, the CPUC (to) focus on developing rates for hydrogen production.[12] We note that the TEF states that "the potential design of rates for electricity used to generate hydrogen as a transportation fuel falls within the CPUC's broad authority to regulate electric rates."[13] We hope this means the CPUC will exercise its authority to set electricity rates for the production of hydrogen via electrolysis, as well as for the liquefaction and distribution of hydrogen for transportation fueling. We believe this is well within the CPUC's jurisdiction and in keeping with policies, such as SB 1369, which calls for targeting increased use of electrolytic hydrogen, and Executive Order B-18-48, which aims to put 5 million ZEVs on California's roads by 2030 and increase both hydrogen fueling and battery electric vehicle charging infrastructure. Having access to wholesale or reasonable rates, along with reasonable demand and T&D rates will help ensure that low and zero carbon hydrogen is cost competitive, so that the industry's decarbonization goals can be achieved.

C. The CHBC also encourages the CPUC to provide regulatory support for hydrogen fuel cell transportation technology that is comparable to battery electric transportation technology.

[9] p. 47, *2020-2023 Investment Plan Update for the Clean Transportation Program*, CEC; March 2, 2020 https://www.energy.ca.gov/programs-and-topics/programs/clean-transportation-program/2020-2021-investment-plan-update
[10] https://hydrogencouncil.com/en/our-2030-goal/
[11] CAISO Opening Comments, p. 4
[12] CALSTART Opening Comments, p. 9
[13] TEF, p. 15, footnote 26

CALSTART states, "It may be appropriate for the IOUs to have a more hands-on role in developing hydrogen stations to support alternative fuel corridors, as will likely be necessary to convert the state's long- haul truck fleet to zero-emission."[14] While the CHBC does not opine at this time on this specific idea, we do strongly agree with the principle that just as the CPUC has created regulatory frameworks that have encouraged massive investment in charging infrastructure, so too should the agency provide comparable regulatory support for spurring investment in hydrogen fueling infrastructure.

The TEF argues that CPUC authority to provide support is limited because hydrogen vehicles "do not fall under the TE definition adopted in SB 350."[15] Notably, CARB is calling for changing this as a priority for bringing down the cost of ZEV fuel, which is needed for the state to succeed in its ZEV goals. [16] In their recently released *Draft Assessment of CARB ZEV Programs Per SB 498*, the agency specifically recommends the hydrogen fuel cell electric transportation be included in the SB 350 TE definition, explaining that excluding hydrogen fuel cell vehicle technology has "meant that utilities and other stakeholders interested in investing private funds into this zero-emission technology have not been able to work together and with the State to develop this critical hydrogen infrastructure. Notably, development and planning for hydrogen production facilities that can or will support California's FCEV market has occurred in other neighboring states with generally more favorable business environments or with utility policies specifically supportive of hydrogen (like Washington). Those states then stand to inherit the benefits such as new clean energy jobs, and the hydrogen that is delivered to California's fueling station network then incurs greater distribution-related emissions than if the hydrogen was produced in-State."[17] We urge the CPUC to consider these concerns and adopt CARB's recommendation to include hydrogen fuel cell electric vehicle technology in its definition of transportation electrification. This is also consistent with the definition in the Joint Automakers' Opening Comments, in which they reference "transportation electrification" as "including battery electric, plug-in hybrid, and hydrogen fuel cell technologies."[18]

[14] CALSTART Comments, p. 15
[15] Ibid.
[16] *DRAFT: ASSESSMENT OF CARB'S ZERO-EMISSION VEHICLE PROGRAMS PER SENATE BILL 498*, CARB, December 2019, pp. vi, p. 87
[17] Ibid, p. 11
[18] p. 2, Joint Automakers Opening Comments

D. We agree with the Public Advocates Office comment that hydrogen transportation is a topic within the scope of the OIR, and also wish to correct the mistaken differentiation in their comments between Zero Emissions Vehicles (ZEVs) and Hydrogen Fueled Vehicles.

The Public Advocates Office correctly states that hydrogen transportation is one of the topics in the scope of the OIR.[19] However, they mistakenly differentiate between "Zero Emissions Vehicles" (ZEVs) and "Hydrogen Fueled Vehicles."[20] Hydrogen fuel cell electric vehicles are, in fact, one of two types of ZEV, the other being plug in battery electric vehicles, as the TEF rightly states.[21]

E. We wish to correct the record regarding TURN's reference to hydrogen fuel cell electric long-haul trucking as an example of an immature technology that may therefore not merit substantial public support at this time.

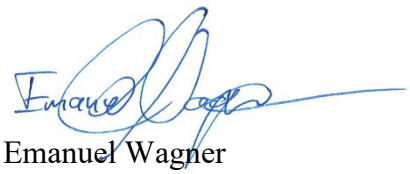
We appreciate and agree with TURN's noting that long-haul hydrogen fuel cell electric trucking has potential to play an important role in decarbonization, but wish to also correct the record on their assumption that this is immature technology.[22] This perspective needs to be updated because not only have fuel cell electric buses been on California roads for over 20 years, but also industry is advancing drivetrains which are fundamentally identical to those used in trucks. There are a number of active projects in California with Class 8 hydrogen fuel cell electric trucks, and major truck manufacturers such as Daimler, Volvo, and Hyundai are making major strategic investments in growing their fuel cell electric drivetrain capabilities. These drivetrains are also identical to battery electric drivetrains, with the addition of fuel storage and a fuel cell module power plant, both of which have been proven in commercial deployments of fuel cell electric buses.

III. CONCLUSION

The CHBC thanks the Commission for their consideration and continues to looks forward to working together to support the successful and equitable transition to zero emissions technology for all transportation applications and across vehicle classes in California.

[19] Public Advocates Opening Comments, p.1, footnote 2
[20] Ibid
[21] TEF, p. 9, footnote 8
[22] TURN Opening Comments, p. 15, footnote 22

Respectfully submitted, **Dated: April 27, 2020**



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