CALIFORNIA HYDROGEN BUSINESS COUNCIL

Hydrogen Means Business in California!

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California Air Resources Board
1001 I Street
Sacramento, CA 95814

October 17, 2022

RE: Proposed Advanced Clean Fleets Regulation

I. INTRODUCTION

The California Hydrogen Business Council (CHBC) is appreciative of the opportunity to comment on the California Air Resources Board's (CARB) staff proposal for the Advanced Clean Fleets (ACF) regulation. The CHBC is supportive of the staff proposal and suggests for the ACF proposal to be successful, specific funds be made available for fuel cell electric vehicles (FCEVs) in agency administered purchase programs and more investments need to be made in hydrogen fueling infrastructure for all classes of vehicles. With these intentional investments in the FCEV space, fleet purchasers will have additional options available to them to meet California's zero emissions transportation goals in a way that will best suit their operational and economic needs.

II. DISCUSSION

a. FCEVs will ensure success of ACF due to their ability to be a one-to-one replacement for diesel, provide flexibility in fleet operations, and a reduced cost for statewide infrastructure.

CHBC appreciates the vision for ACF and expects that scaling FCEVs and hydrogen infrastructure will help the state decarbonize the medium and heavy duty fleets this rule is focused on. As our members are experiencing

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in their pilot and demonstration projects,[1] the commercialization of FCEVs will provide the option for direct one-to-one replacement of their diesel fleet which will provide fleet operators the flexibility to utilize these vehicles for a wide range of potentially variable routes and vocations. This flexibility is important to ensure return on capital investment and ability to adapt to changing market conditions. It also ensures higher value for secondary markets and the capitalization of the vehicle as an asset.

While this rule is focused on fleet requirements and not infrastructure, ultimately the success of the envisioned transition will rely on the ability to finance, site, and build infrastructure that can be accessed statewide. For many fleets the costs of building private infrastructure will not make financial sense even with rate-based subsidies guaranteed. The costs of a statewide hydrogen refueling network will be cost-effective and mitigate some of the direct upfront economic impacts to these fleet operators. Furthermore, fast refueling--similar to the diesel experience--will ensure that labor costs are reduced, and drivers spend their time driving. Publicly available refueling at scale will further replicate the efficient operations and logistics of the current fleet at an all-in public cost that is less than the fully-costed electrical infrastructure needed to perform the same task.

b. *This staff proposal would be most effective if paired with specific FCEV purchase funds and equitable vehicle incentives through existing agency purchase programs.*

California has led the way in ZEV purchase programs and, with this staff proposal, now is the time to create an FCEV fund within the Hybrid and Zero-Emission Truck and Bus Voucher

[1] https://pressroom.toyota.com/toyota-kenworth-prove-fuel-cell-electric-truck-capabilities-with-successful-completion-of-truck-operations-for-zanzeff-project/; https://www.hyundai.news/eu/articles/press-releases/xcient-fuel-cell-trucks-surpass-million-kilometre-benchmark.html; https://nikolamotor.com/press_releases/more-game-day-cheers-less-emissions-anheuser-busch-delivers-new-era-of-beer-with-innovative-zero-emission-fleet-153. Accessed 10/17/22.

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Incentive Project (HVIP) and the Carl Moyer Memorial Air Quality Standards Attainment Program (Carl Moyer). Creating an FCEV fund will ensure equitable funding availability for the market maturation of FCEVs as economic alternatives to battery electric vehicles (BEVs), particularly for fleets that have operations that make adoption of BEVs impractical or uncompetitive.

The HVIP has significantly advanced the market maturity of MHD BEV vehicles in California by providing point-of-sale rebates to offset the upfront cost of such vehicles. This program is so popular, that with $430 million available in March 2022, it was almost immediately oversubscribed in the area needed most—drayage trucks[2]. However, various fleets in the MHD trucking industry will struggle to adopt BEVs into their operations. The current challenges experienced by these fleets include:

1. High duty cycles or impacts to owner-operators' and drivers' available hours of service that don't permit downtime for charging;
2. High payload requirements;
3. Daily range requirements in excess of 300 miles;
4. Not owning domicile properties or otherwise lacking the ability to upgrade infrastructure to accommodate charging requirements; and,
5. Not having regular operating routes; etc.

Similar to the "Public Transit Bus Set-Aside," and the "Innovative Small e-Fleet Set-Aside," an FCEV set-aside for trucks and busses would ensure funding availability for these hard-to-decarbonize fleets and would send the right market signals to manufacturers for further needed technology development. Additionally, this set-aside could be leveraged in

[2] CA HVIP. "HVIP Completes Successful Relaunch and Remains Open—Continue to Apply Today." March 2022. https://californiahvip.org/news/hvip-completes-successful-relaunch-and-remains-open-continue-to-apply-today/. Accessed October 12, 2022.

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California's Alliance for Renewable Clean Hydrogen Energy Systems (ARCHES)[3] public private partnership effort, being coordinated by the California Governor's Office of Business and Economic Development (Go-Biz), to secure match funding from the U.S. Department of Energy for the development of California's hydrogen economy, thus contributing additional monies to CARB's efforts to phase out emissions from MHD transportation.

The Carl Moyer program, which offers grants for cleaner on-road trucks, busses, and off-road equipment, would also be improved with an FCEV fund. Fleet purchasers eligible under the On-Road Heavy-Duty Voucher Incentive Program within Carl Moyer would benefit significantly from an FCEV fund, as they are often owner-operators or small fleet owners of 10 or fewer vehicles that have less purchasing power than larger fleets but have the same challenging vehicle operational needs to meet their unpredictable and lengthy duty cycles, and may lack facilities where they can deploy permanent charging infrastructure or be inhibited by their available hours-of-service to use public charging facilities that would reduce available working hours for hauling loads.

Additionally, ensuring that MHD FCEVs realize either the same total funding or the same number of MHD FCEVs awarded funding as MHD BEVs have received would ensure an equitable glidepath towards widespread commercial viability of MHD FCEV trucks on par with BEV technology. It is critical FCEVs receive equal funding to battery electric vehicles to ensure California fleet purchasers have options that meet their needs. Adding FCEV funds within existing programs allows fleet purchasers to select the vehicle that can support their business needs while meeting ACF compliance to help decarbonize the transportation sector.

[3] ARCHES. https://archesh2.org/. Accessed October 12, 2022.

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c. *Without matching funding for MHD hydrogen fueling infrastructure funding and increased fueling station targets, fleet purchasers will lack infrastructure to meet CARB's accelerated MHD ZEV procurement targets.*

The staff proposal mandates fleet purchases without ensuring there will be sufficient hydrogen fueling infrastructure to support transitioning ZEV fleets. FCEVs are an excellent replacement for gas- and diesel-powered vehicles throughout Classes 2b-8 due to their longer ranges, higher payloads and shorter refueling times as compared to BEVs. However, there are only 60 public hydrogen fueling stations that can service Classes 2b-6 and 7 fueling stations that can service Classes 7-8. Currently, there is no statutory heavy-duty (HD) hydrogen fueling station goal. The CHBC has previously advocated for 200 public HD hydrogen fueling stations by 2035 to service 70,000 HD trucks[4]. A 200 HD hydrogen fueling station goal is a good first step to supporting the goals in N-79-20, but it falls shorts of servicing the accelerated targets in the staff proposal.

If the ACF regulations were implemented according to the ZEV Milestone Option with changes to prevent front-loading procurement of Milestone Group 1 vehicles at the expense of Milestone Group 2 and 3 vehicles, and all MHD vehicles were procured as FCEVs, the CHBC calculates that 2,225 Class 8 day cabs would be procured per year from 2023 to 2027 and would necessitate the construction of at least 11 MHD stations per year, each capable of dispensing at least 4 tons of hydrogen per day, starting in 2023. This infrastructure requirement would only accelerate from 2027 on as the regulations start accelerating for Milestone Group 2 vehicles and begin impacting Milestone Group 3 vehicles. As has been seen in the challenges in deploying Class 8 BEV trucks under the HVIP program, where only

[4] Hydrogen Fuel Cell Partnership. "Fuel Cell Electric Trucks: A Vision for Freight Movement in California—And Beyond." August 2021. https://h2fcp.org/resources. Accessed October 11, 2022.

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26 on-road Class 8 trucks[5] have had HVIP vouchers redeemed, i.e., a proxy for deployment into service, as of August 31, 2022, infrastructure plays an important role in ensuring that vehicles are deployed into service. Class 8 BEVs regularly realize a lead time of at least 12-18 months for infrastructure upgrades through the electric utilities, causing delays for implementing these vehicles into service. If California is to achieve its emissions reductions goals, the state must learn from the experience being currently realized with BEVs; hydrogen infrastructure must be deployed ahead of FCEV vehicle availability, or vehicles cannot be purchased and delivered to displace ICE vehicles. Given the faster fueling times at public hydrogen fueling stations as compared to BEV charging stations, if HD hydrogen fueling stations are deployed in the market, MHD vehicles can be immediately deployed into service upon their availability from manufacturers such as Hyundai, Hyzon, New Flyer, Nikola, and others.

Without sufficient funding and an established HD hydrogen station target that matches the procurement mandates within the staff proposal, fleet purchasers will not feel confident purchasing FCEVs even though they may serve their business needs best and will continue to point to their inability to meet the compliance requirements under the exemptions provided by Sections 2015.2(e) and 2015.3. It is essential that the funding allocation is made equal when looking at past distributions among the BEV and FCEV technologies. Additionally, the funding made available for hydrogen fueling infrastructure must be aligned with and support the procurement mandates within this staff proposal--meaning that such funding and fueling station deployment targets should be implemented immediately to ensure the availability of infrastructure for the planned deployment of FCEVs offered by OEMs such as Hyundai, Hyzon, New Flyer and Nikola in the March 2023 HVIP.

[5] CA HVIP. "Voucher Map and Data." https://californiahvip.org/impact/#deployed-vehicle-mapping-tool i.e., excluding Orange EV and Kalmar Ottawa Class 8 trucks, both of whom are yard tractor manufacturers. 25 BYD and 1 Volvo vouchers have been redeemed. Accessed October 12, 2022.

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III. CONCLUSION

The CHBC would like to emphasize its support for the ACF regulation and the goals of the regulation in driving down emissions from the transportation sector. However, the CHBC is concerned about the ability to skirt emissions reduction requirements through the ability to frontload Milestone Group 1 vehicle procurement and stresses the importance of tying the staff proposal to matching funding allocations and investments for the procurement of FCEVs and MHD hydrogen fueling infrastructure. We look forward to the workshop on October 27, 2022, and we will make additional comments based on the workshop discussion during that time. Thank you for your consideration of our comments.

Sincerely,

Sara Fitzsimon
Policy Director
California Hydrogen Business Council