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**HD FCEV industry stakeholder members CaFCP comments 2020
IEPR Update_IEPR Commissioner Workshops on HD ZEV Market
Trends**

Additional submitted attachment is included below.



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Commissioner Patty Monahan
California Energy Commission
1516 9th St
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Re: HD FCEV industry stakeholders CaFCP comments 2020 IEPR Update/IEPR
Commissioner Workshops on Heavy-Duty Zero-Emission Vehicle Market Trends
(docket#: 20-IEPR-02-Transportation)

Dear Commissioner Monahan,

We appreciate California Energy Commission's continued participation in California Fuel Cell Partnership efforts. We also appreciate the acknowledgement that ZEVs are fuel cell electric vehicles and battery-electric vehicles, as both technologies are essential to achieve California's targets.

During the Integrated Energy Progress Report 2020 Update workshops on the status of Heavy-Duty ZEVs on May 20 and May 21, you encouraged stakeholders to submit comments to the 2020 IEPR Update Transportation docket. The following response reflects areas identified by the heavy-duty fuel cell electric vehicle industry stakeholders of the California Fuel Cell Partnership. This feedback is intended to provide supplemental thoughts and items for consideration in addition to those discussed by the workshop panelists.

Thank you for the opportunity to comment on the status of Heavy-Duty ZEVs, specifically in the areas of "Ports and Off-Road Equipment", "Medium- and Heavy-Duty ZEVs, Moving Goods", and "Heavy-Duty ZEVs, Moving People". In the context of providing new information for the 2020 IEPR Update and CEC's planning for the future based on current trends, we submit the following points for consideration:

Applicable to all areas

- Cost reduction of electric drive train components and related development of the electric drive train supplier base is important for all HD ZEV technologies.
- Based on our experience with the industry standardization of the fueling interface for light-duty ZEVs, a major factor contributing to a broad rollout of ZEVs, long-term market success, and public access of fueling infrastructure is the use of the same standard for each HD ZEV technology. This will bypass the market segmentation that currently exists in the LD plug-in electric vehicle market. Clarity is needed on the status of standardization and the adoption of fast-charging connectors for HD vehicle applications.
- Electricity as a HD ZEV fuel is not guaranteed to be sourced from renewable sources at the point of fueling, contrary to hydrogen, which is required to have at least 33% new (not previously claimed) renewable resource-based content at the nozzle.

Zero-emission on-road goods and people movement areas specific

- Due to the cost of replacing HD zero-emission trucks in the near term, the oldest vehicles may not be replaced in the near term as discussed, because the focus will be on demonstrating operational capabilities and collection of data needed to make investment decisions for future HD ZEV manufacturing and HD ZEV fueling infrastructure rollout.
- The Advanced Clean Trucks (sales) rule is acknowledged to be under development, but in the context of IEPR and the related energy outlook, this can be expected to play a significant contextual role with regards to energy needs.
- For HD ZETs, CEC should confirm if most of the trucks on the road are operated by small (one or few person) outfits, or larger entities.
- To facilitate optimal fleet operation and technology adoption, fueling time for both trucks and buses should be assumed similar as those used for conventional vehicle fueling and the resulting operational ranges.
- Transit agencies are focused on providing a reliable service for riders with the least complexity, high pullout, and maximum performance vehicles for flexible route use.
- HD hydrogen fueling infrastructure appears more challenging, but over the last 20 years has delivered for transit HD bus applications.
- One trend that needs to be strongly considered is CARB's Innovative Clean Transit rule, which is a major influential aspect of decision making at transit agencies about the mix of future zero-emission bus technologies.

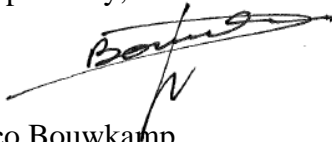
In the context of previous comments, we also submit the following questions:

- Due to charging time, to what extent are significant operational adjustments assumed to be made by HD vehicle operators?
- How do the discussions during these workshops and the information provided feed into the update of the final version of the 2020 IEPR?

Understanding the HD ZEV market in the IEPR context is important to facilitate broad HD ZEV rollout supported by the decarbonized energy system that California needs. In addition to supporting HD ZEV fueling infrastructure, we applaud CEC's on-going contribution to the rollout of retail hydrogen station infrastructure for light-duty fuel cell electric vehicles¹.

Thank you again for the opportunity to provide these comments for the 2020 IEPR Update and the inclusion of FCEVs in upcoming IEPR workshops. We look forward to continuing our collaboration as we work with all stakeholders towards a self-sustaining, heavy-duty zero-emission vehicle market.

Respectfully,



Nico Bouwkamp
Technical Program Manager
California Fuel Cell Partnership

¹ Per Executive Order 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>