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Docket Number:	24-TRAN-03
Project Title:	2024 Zero-Emission Vehicle Infrastructure Plan
TN #:	261571
Document Title:	Matt Miyasato Comments - FirstElement Fuel comments on ZIP
Description:	N/A
Filer:	System
Organization:	Matt Miyasato
Submitter Role:	Applicant Representative
Submission Date:	2/6/2025 11:28:39 AM
Docketed Date:	2/6/2025

*Comment Received From: Matt Miyasato
Submitted On: 2/6/2025
Docket Number: 24-TRAN-03*

FirstElement Fuel comments on ZIP

Additional submitted attachment is included below.

February 6, 2025

Ms. Thanh Lopez
California Energy Commission
715 P Street
Sacramento, CA 95814

Subject: *2024 Zero-Emission Vehicle Infrastructure Plan*

Dear Ms. Lopez and CEC Staff,

Thank you for your continued work to support zero-emission infrastructure and vehicles. FirstElement Fuel (FEF) is the largest retail, light-duty (LD) hydrogen refueling station (HRS) provider in California and the United States due to the generous support of the California Energy Commission (CEC). We are also the designer, owner and operator of the largest, fast-fill, high-capacity heavy-duty (HD) truck HRS at the Port of Oakland, thanks to the CEC's support of the NorCal Zero project. And finally, we are proud members of the Alliance for Renewable Clean Hydrogen Energy Systems (ARCHES) and will be building stations throughout California as part of the ARCHES program. It is with this experience and perspective that we offer the following comments on the subject Infrastructure Plan which mirror our previous comments on the Clean Transportation Investment Plan¹.

Alignment of Light-Duty (LD) and Medium-Duty (MD)

Throughout the report and workshop presentation, the CEC staff refer to "MDHD" as a group separate from LD. It is currently understood, however, that MD vehicles will fuel predominantly at local neighborhood stations, much as they do now with gasoline and diesel. The United States Council for Automotive Research (USCAR), a collaborative automotive technology company consisting of Ford, General Motors and Stellantis, authored a whitepaper indicating that MD HRS are needed using the LD J2601 fueling protocol with higher fueling capacities (category D)². The whitepaper correctly identifies that HD fueling will require much larger capacities and a different fueling nozzle. The whitepaper concludes that LD stations should be modified to accommodate MD vehicles. The California Air Resources Board (CARB) during its Low Carbon Fuel Standard proceedings in 2024, also initially grouped LD and MD for its incentive structure, but eventually appropriately revised the incentive categories to be LD-MD and HD. We urge the CEC to similarly adjust its planning to accommodate MD vehicles at current LD HRS, which should impact the CEC's rollout strategy.

"MDHD Uncertainty"

There are several instances in the report and workshop presentation where the CEC staff indicate "Estimating the future demand of MDHD hydrogen refueling stations is challenging"³ alluding to the wide disparity in published forecasts for MDHD HRS. However, the wide discrepancy is mostly due to the CEC's AATE3 study which is vastly different, one to three orders of magnitude, than CARB's, ARCHES and

¹ <https://efiling.energy.ca.gov/GetDocument.aspx?tn=259611&DocumentContentId=95753>

² <https://uscar.org/download/53/hydrogen-fuel-cell/13748/2023-uscar-medium-duty-h2-infrastructure-white-paper.pdf>

³ <https://www.energy.ca.gov/sites/default/files/2025-01/CEC-600-2025-002.pdf>, page 51 and <https://efiling.energy.ca.gov/GetDocument.aspx?tn=261431&DocumentContentId=97821>, slide 32

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the CTC's forecasts for MD and HD fueling stations, as shown in the Table below compiled from the CEC's own Senate Bill 643 report⁴.

Combined MDHD Hydrogen Stations

Agency/Plan	2025	2030	2035
CARB / Scoping Plan	47	577	1,797
ARCHES	12	66	117
CTC / SB 671	28	601	2,157
CEC / AATE3	0	1	11

The large difference in stations indicates a fundamental disagreement in vehicle rollout forecasts amongst the agencies. This disagreement, however, is having a significant effect in further investment by both the vehicle manufacturers and station providers since the CEC is the primary agency administering funding for H2 infrastructure. We urge the CEC to re-evaluate the required number of stations by working with the other state agencies to come up with a unified California demand scenario.

In conclusion, the CEC is no doubt the leader in deploying HRS in California and is clearly trying to assist LD HRS providers through their efforts with IMPROVE and GFO-24-601. However, there seems to be a disconnect between the CEC and other state agencies, in particular CARB, who is responsible for vehicle rollout forecasting. We believe the CEC should adjust its planning to include MD with LD stations and to appropriately consider a greater number of stations (vehicle rollout) for MD and HD. We believe that evaluating and incorporating the other demand scenarios will enable the CEC to provide a more equitable treatment of hydrogen and battery EVSE. The CEC has been the leader in ZE infrastructure support, and we look forward to working with the Commission to continue transitioning the transportation sector to battery and hydrogen zero-emission vehicles.

Sincerely,



Matt Miyasato, Ph.D.
Chief Public Policy & Programs Officer

⁴<https://efiling.energy.ca.gov/GetDocument.aspx?tn=254100>, Tables 6, 8, 10 and 12