

**DOCKETED**

<b>Docket Number:</b>	24-ALT-01
<b>Project Title:</b>	2024–2025 Investment Plan Update for the Clean Transportation Program
<b>TN #:</b>	256716
<b>Document Title:</b>	Anastassios Petropoulos Comments - Existing Light Duty FCEVs need working infrastructure with equitable pricing
<b>Description:</b>	N/A
<b>Filer:</b>	System
<b>Organization:</b>	Anastassios Petropoulos
<b>Submitter Role:</b>	Public
<b>Submission Date:</b>	6/6/2024 12:53:48 AM
<b>Docketed Date:</b>	6/6/2024

*Comment Received From: Anastassios Petropoulos*  
*Submitted On: 6/6/2024*  
*Docket Number: 24-ALT-01*

**Existing Light Duty FCEVs need working infrastructure with equitable pricing**

*Additional submitted attachment is included below.*

## Existing Light Duty FCEVs need working infrastructure with equitable pricing

Light Duty FCEVs are present here and now on the roads of California. Almost 1 out of every 1000 light duty cars is an FCEV. The development of reliable hydrogen refuelling infrastructure and competitive hydrogen pricing has not kept up with demand.

The 2024–2025 Investment Plan must explicitly support equitable fuelling of LD FCEVs. And existing and future Grants should hold developers to suitable standards of performance such that equitable fuelling of LD FCEVs becomes a reality.

I would ask that you do all in your power to support and incentivize the development of reliable new LD hydrogen filling stations and the conversion of pioneering 11-year-old stations with modern, reliable ones. I would also ask that you promote fair, competitive pricing of hydrogen to LD FCEV drivers. It is patently unfair that Medium and Heavy Duty FCEVs pay less than half the price that LD drivers see at the pump per kilo of hydrogen.

MD and HD FCEVs make up only a miniscule fraction of the trucks on the road. Any support offered to them should include support for the LD FCEVs that are present here and now. Please support the requirement that MD and HD stations are in fact multi-use stations that cater to LD FCEVs as well.

One kilo of hydrogen in an LD FCEV offsets almost 3 gallons of gasoline, on average. One kilo of hydrogen in an HD FCEV offsets just over 1 gallon of diesel. In terms of CO<sub>2</sub>, by far the most important GHG associated with gasoline or diesel and therefore the most important for climate change, hydrogen in an LD FCEV offsets more than twice the CO<sub>2</sub> than the same hydrogen in a Class 8 FCEV. Only in exceptional cases, such as the Port of Oakland and Long Beach, where pollution from concentrated use of diesel is a more pressing concern than climate change, does it make sense to prioritise MD/HD over LD since MD/HD.

Again, LD FCEVs are present here and now. Ensuring an equitable and reliable provision of hydrogen to them is the fastest and most immediate way to reduce Green House Gas emissions from transportation. The LD refuelling infrastructure must be built out to support this.

I myself drive an LD FCEV since 2022. But in fact I do not drive it much now, because the price of hydrogen has almost tripled since early 2022 for LD drivers. And so I am back to producing GHGs with my gasoline car. Hence, another reason for my plea to support LD hydrogen equity and reliability.

The LD FCEV market has very clearly been quashed in the last half year by the hydrogen price and lack of stations and unreliability of stations. See chart.

I also espouse the analysis of Dr. Ogitsu, as submitted to this docket, 24–ALT–01. That analysis, together with my comments here, point towards a pressing need to support LD FCEVs at least as strongly as BEVs and as MD/HD FCEVs. In particular, the CEC Draft Staff Report 2024–2025 Investment Plan Update, is worrying in that LD FCEVs do not seem to be getting any support at all. The report does state "The CEC will continue to evaluate the FCEV

market and is committed to providing a sufficient hydrogen fueling infrastructure that will provide the reliable coverage and the capacity to support current and future light-duty passenger vehicles." But everywhere else in the report, LD FCEVs are excluded. For example, Table ES-2 (or Table 5), does not mention funding for LD FCEVs, and even the line item that is there for MD/HD FCEVs is shared with BEVs. In contrast, LD BEVs are supported in line items throughout the report.

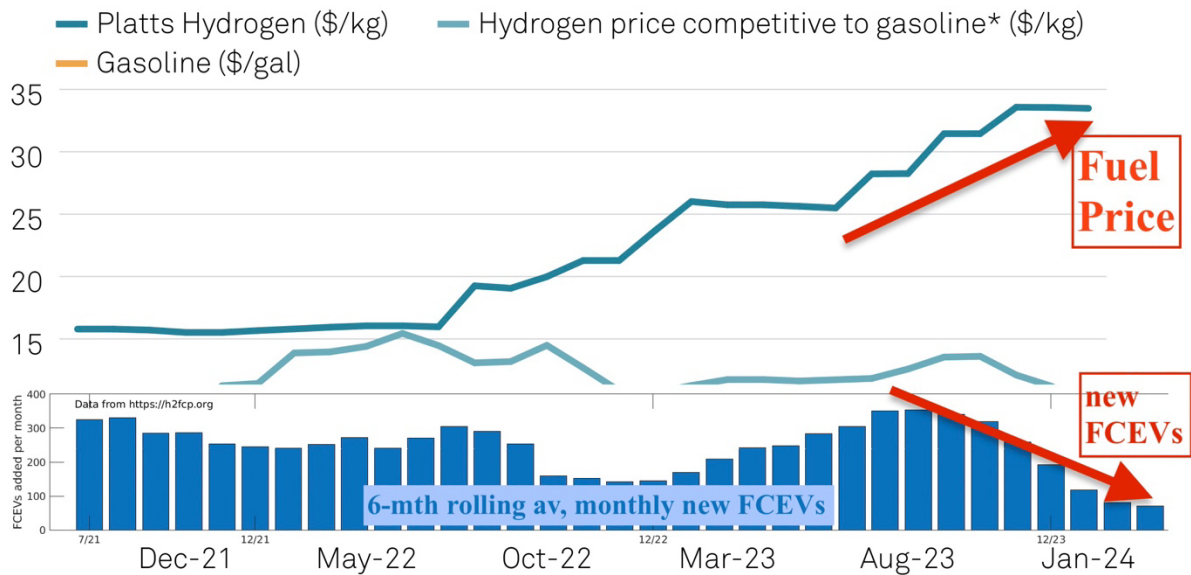
This quote, from p.48, is telling: "This Investment Plan proposes funding for medium- and heavy-duty hydrogen fueling infrastructure but not specifically for light-duty hydrogen infrastructure for FY 2024-2025 of the Clean Transportation Program. Light-duty stations are being developed through GF0-19-602 through current batches, with the potential for future batches. The CEC may further support light-duty hydrogen infrastructure by reinvesting unexpired, previously allocated funds (about \$34 million remaining) from the canceled Shell agreement, with an emphasis on reliability of the network." Elsewhere, the report states that the \$34M from the Shell cancellation may be directed to MD/HD hydrogen infrastructure.

I implore you, add support for LD FCEV fuelling in the Investment Plan, and supervise the already awarded and planned hydrogen GF0s closely.

The LD FCEV market exists and there is demand for equitable fuelling of LD FCEVs.

LD FCEV current vehicle sales are poor indicators of demand for hydrogen. Demand for new vehicles is strongly tempered by price of fuel. See the figure below. Rather, demand for hydrogen is best estimated by examining how much hydrogen would be used by drivers if it were readily available. Over four and a half million kg of hydrogen is what is needed annually to support the 18,000 LD FCEVs on the road today. That assumes they drive the average annual vehicle mileage and are unconstrained by hydrogen fuelling infrastructure and price problems. The fact that hydrogen vehicles drive far fewer annual miles than the average car speaks to these problems, not to a lack of demand. This hydrogen demand is about an average of 12,000 kg per day. Existing stations in no way meet this demand. On any given day in the recent past, only about 60% of the stations were online (around 34). The peak hydrogen reserve over the last three days of all of these stations combined, as reported by SOSS, is about 18,000kg. Two thirds of that reserve would have to be dispensed and replenished daily without interruption to meet that demand - a highly precarious proposition which fails for many of the operating stations. And this does not even take into account that fuelling demand varies significantly with time of day.

## Retail California hydrogen pump price vs benchmark



\*EER adjusted

Source: S&P Global Commodity Insights, Energy Information Administration

The past 10 years of FCEVs on the roads have taught us how to make this work. It is now time to support the modernisation and full-scale adoption of FCEVs, both LD and MD/HD. It is also essential to keep hydrogen pricing for LD FCEVs at fair levels, which has been shown to be possible by the transit agencies and the new MD/HD hydrogen stations.

In summary,

- 1) LD hydrogen fuelling infrastructure must be expanded
- 2) LD hydrogen stations must be more reliable and not have supply disruptions
- 3) LD hydrogen price must be brought inline with the price offered to MD/HD and transit agencies, and it should be competitive with gasoline.

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