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California Hydrogen Car Owners Association (CHCOA)

November 30, 2024

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2024



Over the river and
through the woods . . .

**Happy
Thanksgiving!**

Proton Monthly

- - -

November 2024

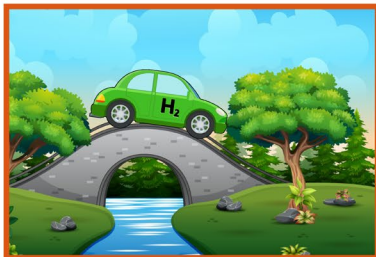
2030



Over the passes . . .



2040



And across the plains . . .

Graphics: Shutterstock and Istock, as modified by CHCOA



LCFS and Hydrogen Price

- - -

A Cloudy, but Positive, Crystal Ball

By Bobbie Cane

After a grueling 12+ hours, amendments to the Low Carbon Fuel Standard (LCFS) were passed by a 12-2 vote of the Board during a CARB [hearing](#) on November 8th. One purpose of the proposed revisions was to strengthen the LCFS program for light, medium, and heavy-duty transportation, since the tanking of the LCFS credits is partially to blame for the average of \$34.70/kg for hydrogen at the stations. Given the importance of the hearing, I watched the entire day-long process. It was an eye-opening experience.

The first hour included a presentation by CARB staff in which they pointed out the billions of gallons of petroleum saved in the last year alone by the LCFS program. They continued with a description of the transparency utilized to conduct thousands of meetings over the last several months to help them improve and update the LCFS. The majority of the rest of the time was allotted for public input; over 115 comments from the audience, and another 50 or so who called in. There were numerous questions about whether LCFS increases gasoline prices. CARB staff were emphatic that LCFS is not a major driver in higher gasoline costs, but that they have no control over the costs that oil companies choose to pass onto their consumers (see slide). Many of the comments from the audience were from environmental justice groups, who are concerned that LCFS is prolonging the use of fossil fuels; others were people who lived in areas with poor air quality.

While there were a few comments about hydrogen still being mostly fossil fuel based, dairy farms producing biomethane, and food crops producing biofuels received the

majority of the negative comments. It was, frankly, refreshing to watch a hearing where hydrogen was not the main target of commenters' angst.

Several of the pro-H₂ comments were made by familiar organizations including FirstElement Fuel, Air Products, Chevron, CHC, CHBC, Green H₂ Coalition, Iwatani, Toyota, and CalSTART. There were also a few other pro-H₂ organizations like Noyes Law Corp, Republic Services, H-Cycle, AMP Americas, and Tom's Truck Center.

During the last four hours of the hearing, the Board and staff members held a discussion to review hearing comments and to debate a final framework for the amendments. In the end, realizing that:

- the proposed changes were not perfect, but
- that the longer a decision was delayed, the longer there would continue to be higher GHG emissions,

the Board passed the amendments.

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So, what does all this mean for LD FCEV drivers, you say?

I reached out to several different H₂ industry representatives to ask that question. Their collective answer was that it was overall a "win" and they were all cautiously optimistic. HRI crediting was extended for both LD and HD, which helps to make investments in stations less risky, and also provides for longer term padding for operational costs.

However, they agreed that there are still some challenges yet to work through, such as:

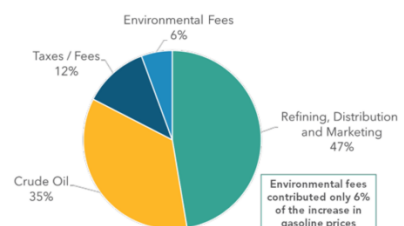
- There is a bank of available credits that is still very large, so it may take time for supply and

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Fuel Pricing Affected By Many Variables

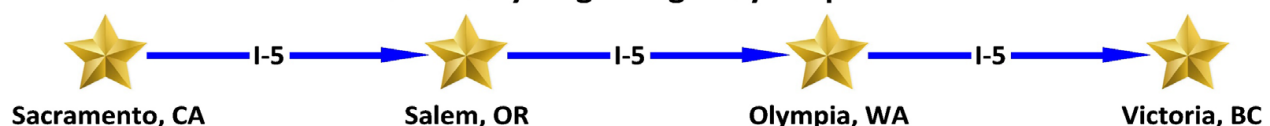
- 80%+ of the increase in prices due to pricing policies by oil refiners.
 - Federal, State and local taxes and fees account for 12%,
 - Environmental requirements are the smallest fraction (6%) of the total.
- LCFS, and other climate action, will have impacts to the cost of pollution sources, but the exact cost is unknown.
 - Third party and industry data indicates about a \$0.08 to \$0.10 per gallon current pass through
- No model can accurately predict future credit prices, future transportation fuel prices, or passthrough cost for retail gasoline or diesel.

% of increase in Gas Prices (2019 to 2023)



Slide from staff presentation

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A Nice Day at the Beach



A Line of Mirais at the Huntington Beach Owner Appreciation Event

By Stephen Mirkin

Saturday, November 9th, I had a really, really nice day at the beach. And it did not include going into the water, sitting on the sand and wiggling my toes in it or working on my fall/winter tan. I was there to enjoy a gathering of Mirai owners in Huntington Beach, California hosted by Toyota and by Zach Woosley who runs a Toyota Mirai Owners [Facebook](#) page.

As I have written in the past, my prior car was a 2011 Subaru WRX. Each year that I owned it, I would attend an event known as *Subiefest*, where owners of any form of Subaru would go to be around other likeminded car owners. It was a true pleasure to attend *this* event for *Mirai* owners. Was it as big as Subiefest...no. However, that is to be understood. Subaru cars have been for sale in the USA since the 1960s. With the vast total of Subaru cars in the USA and their establishment as fun and cool cars (yes, WRX owners would always flash a "peace" sign when we encounter each other on the road) has been decades in the making.



Incredible! Sand Sculpture

When I arrived at the beach for the event, I quickly met Zach, a friendly and open fellow with a bright smile and a naturally orange colored beard (in contrast to my white one). We spoke at length about his

involvement with Toyota, working for a marketing firm that has Toyota as its client. Zach hails from Texas where he works for Fanology and where he cannot own or drive a Mirai due to the non-existence of any H₂ fueling locations. However, that has not stopped Zach from doing an amazing amount of promotion for Mirai and has run the Facebook page as if he was an owner of this amazing car. If you have a question or comments about your Mirai or about refueling it, Zach will know the answer, or will find it out for you.

I asked Zach who was funding this event? He stated it was Toyota and they made it very special. Prizes were awarded, give aways were given away, drinks, pastries,

even a food truck was made available to us at no cost; heck there was not a fee to attend (yet I always paid an entrance fee for Subiefest). There was a DJ to play music and even a beautiful sand sculpture of a Gen 2 Mirai was created for the event.

When I attended Subiefest, there were thousands of visitors and hundreds of cars at the events. There were 162 attendees and over 50 cars at our event. Scope please. The number of Mirai cars in California is nowhere in comparison to the number of Subaru cars in our state. So, the size of our attendance probably matched in comparison as a ratio (no science to back this up so do not Google it). However, in talking to Zach, he envisions a time when we could have thousands of attendees to the event.

While at the event, I handed out my CHCOA business card (supplied to me by Bobbie and Greg earlier this year) to attendees that I spoke to and, with their approval, here are some of the people I met at the event. I met Bruce Spellman, a retiree who worked in the film industry and loves his Mirai. Yet, he and his wife have a second car and it is a Corvette. I like the juxtaposing of these two cars (she loves to drive a stick shift car, as did I with my WRX). I met Doug Dumitru who told me about his amazing life and how he created and runs a



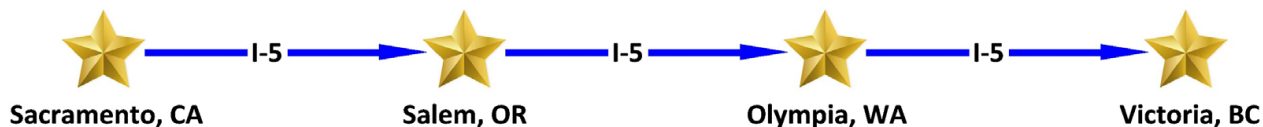
A Reminder:

From Water, to Water

webpage H2-CA.COM where it lists all the open or closed H₂ refueling stations. From this site you can drill down to specific stations and see all the stats on how many kilos are available and that stations performance (in many cases more info than is listed on True Zero's website). I met Maria Kahn who told me of an accident she was involved in with her Mirai and that she walked away from it. She is on her fourth Mirai. You have got to believe in a car that can save your life. And I met Melissa Luy who asked many of us to be interviewed on her phone to talk about our love of our Mirai cars. At some point she will make this film available to us. I think that is wonderful. (Side note: I was included in a film about Subaru owners "Between The Lines" where I explain about my love for my Subaru and my involvement with Children's Hospital Los Angeles as a platelet donor was told. We did two blood drives at Subiefest because of this film.)

After the last prize was given away, the last bit of food
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LCFS (cont)

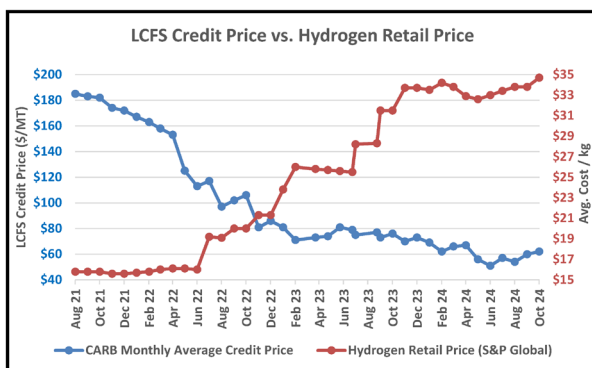
demand to push LCFS prices back up;

- It defined renewable as either electrolytic or reformed H₂ using biogas, but it doesn't provide for other pathways that could lower carbon intensity;
- It strengthens the regulation from the current 40% renewable to 80% renewable by 2030, and 100% by 2035. This, by all accounts, may be difficult to achieve.

Even with these challenges, they all thought the amendments should drive the credit prices back up, which in turn helps to offset costs and result in a lower price of fuel (see discussion insert, below), but as one executive put it, "It's a cloudy crystal ball." Some estimates reflect that fuel prices should start to drop in early 2025. Less optimistic estimates say we will wait until 2026 to see a positive impact.

FCEV drivers are, by and large, a dedicated, proud and stubborn bunch; we just have to hang in there and summon all of our patience to get through several more months until the price improves. We know it's not easy, especially because, as is the case for so many of us, our fuel card is either rapidly depleting or is already empty.

Since the passage of the amendments, LCFS prices have increased by \$10/credit; not a lot, but headed in the right direction and a reason to hope for better fuel prices!



There is much debate relative to the magnitude of impact of LCFS credit price on the hydrogen retail price. This graph does reflect, that in the most recent 3 years, when LCFS credit prices were high, H₂ price was low, and vice versa.

Owner Appreciation Event (cont)

was ordered from the food truck and as attendees returned to their cars to head home, I spoke to Zach once more to thank him for the event. Next year's event might be held in Northern California where there are many Mirai owners in the San Francisco area. Road trip!

I hope to attend more of these events for Mirai owners and happy to know that Toyota still appreciates all the folks that own a Mirai. And maybe call it "Mirafest"? Just a thought...

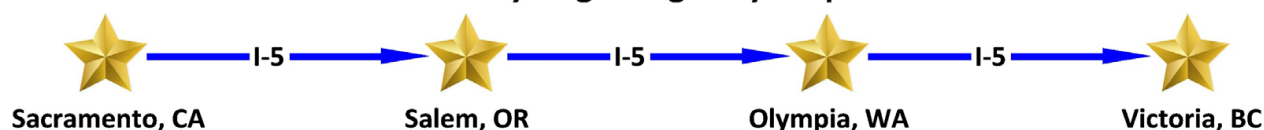


Zach Woosley and me (I'm the guy on the right with the fall/winter tan.)

A couple of additional fun photos:



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Nuggets from “CHARGE H2”

We attended the CHARGE H2 event held in Seattle on Nov. 20/21. The event was organized by RE+ and [CHARGE](#) of Washington State University (an integral part of the Pacific Northwest Hydrogen Hub). There were about 150 people attending; it was well-run and very informative.

The sessions were divided into ten panels, each with a different topic related to transportation-hydrogen. The panelists

included people in the trucking industry, H₂ production, current and former WA state legislators, and lobbyists from both WA

and CA. Some familiar faces were Bill Elrick of the H2FCP, Keith Malone of RE+ and Mik Skvarla of CHC. The main article about this event will be in the December newsletter, but there were a few nuggets of information that we wanted to pass along now:



One of ten informative panels.

- The “[Courage to Believe](#)” poster was well received. We are not sure how many people actually looked at it, but those who did were impressed at the breadth of the interest in transportation-hydrogen from so many market segments.
- The hydrogen HUBS across the country are all working together; but CA and WA are the only two that are “green”.
- The concern about what happens now that the election is over was a hot topic. By and large, the panelists agreed that they are just going to move forward and keep focusing on their work, although they acknowledged there will be more headwinds now. It was pointed out that other countries are forging ahead and not waiting to make strategic decisions based on our 4-year election cycle.

Further, there is bipartisan interest in hydrogen and many states have already adopted the hydrogen pathway, especially in the transit industry which, as one panelist stated, went from 20% H₂/80% EV to now, 80% H₂/20% EV as they realized the benefits of hydrogen.

- A representative of the trucking industry stated clearly that truckers are skeptical of BEV Class 8 trucks because of the loss of 5,000 - 10,000 lbs. of payload capacity and the long hours required for recharging. Given what are seen as BET shortcomings, FCETs are gaining in popularity.

That’s just a “teaser”... more to come in the December Proton Monthly!



Exhibit area, including the poster, “Transportation-Hydrogen, The Courage to Believe”.

Hydrogen Snippets



Two additional stories we will work to include in the coming months:

- 1) Sadly, State Senator Josh Newman, the staunchest legislative advocate for transportation-hydrogen, was not successful in his re-election bid. We’d like to talk to him to gain his insights as we all move forward.
- 2) On our trip north we had the opportunity to meet Julia Mercer of [HTEC](#). Lots going on with our Canadian neighbors to the north!

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