Shell Oil Company
910 Louisiana Street
Houston, TX 77002

Wayne Leighty
Hydrogen Business Development Manager, North America
Tel +1 (832) 337-0501
Email W.Leighty@shell.com

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Sam Wade
Chief, Transportation Fuels Branch
California Air Resources Board
1001 "I" Street
Sacramento, CA 95812
Delivered via website

Subject: Shell comments to CARB regarding the proposed "Hydrogen Infrastructure Investment Credits"

Dear Mr. Wade:

Shell is submitting the below comments in support of the attached proposal to create a pathway for generating "Hydrogen Infrastructure Investment Credits" under the California Low Carbon Fuel Standard.

Research has shown that meeting California's goals for greenhouse gas and criteria pollutant emission reductions for 2030 and 2050 require acceleration and scaling up of very low-emission options in the transportation sector. Zero and near-zero emission vehicles with very low-carbon fuels and an increasing rate of adoption are needed to achieve California air quality and emission reduction targets.

Specific to the Low Carbon Fuel Standard, decreasing the average carbon intensity of fuels requires both supply of low-carbon fuels and demand through conditions that enable customers to switch to a low-carbon fuel. The availability and competitive pricing of very low-carbon fuels is needed for consumer adoption, and supporting fueling network coverage and cost reduction are therefore consistent with the LCFS policy intent to reduce the average carbon intensity of transportation fuels in California.

Specific to hydrogen fuel, the initial low utilization of new refueling infrastructure capacity and coverage during early stages of the market limits the pace of development and availability of this fuel, and increases the cost, all of which inhibit customer adoption of fuel cell electric vehicles (FCEV) and switching to hydrogen fuel in furtherance of the LCFS policy intent.

Hydrogen refueling station capacity, coverage, and cost are amongst the factors limiting customer adoption of FCEVs, which are becoming available in larger numbers and range of models.

However, with modest scale in sustained development of hydrogen refueling infrastructure, we have verified that the cost of hydrogen refueling stations can be reduced by 50% or more.

With successful demonstration activity enabled by effective grant support for hydrogen fuel, there is now an opportunity to pivot from demonstration toward commercialization, to accelerate and scale up hydrogen refueling infrastructure with increasing renewable content, for progress toward California's greenhouse gas and criteria pollutant emission reduction goals, to decrease cost toward fuel price parity for Californians, and to harmonize across policy support for zero emission vehicles.

We therefore support the creation of a pathway for generating LCFS credits based on installed hydrogen station fuel dispensing capacity. Very simply, the number of credits generated through this "Hydrogen Infrastructure Pathway" would be equal to the potential for credit generation from the station capacity minus the credits generated through hydrogen fuel sales.

The Hydrogen Infrastructure Pathway accomplishes the following during the initial increase in FCEV sales:

- It partially offsets the initial low utilization of hydrogen refueling stations, thereby supporting refueling network development to increase the availability of this fuel and enable customer adoption;
- It enables efficient development of hydrogen refueling stations at a sustained pace and scale to achieve significant cost reduction, for efficient use of public and private funds and for progress in reducing the cost of low-carbon fuels for Californians;
- It enables the incentive structure already in place in the Low Carbon Fuel Standard to reduce the carbon intensity of hydrogen through increasing renewable content, by generating credits for the station capacity based on the fuel pathway rather than just the fraction of capacity initially used.
- It is self-balancing and sun-setting, with credit generation through the Hydrogen Infrastructure Pathway decreasing over time as hydrogen sales and station utilization increase.

The Hydrogen Infrastructure Pathway as proposed addresses the following:

- A potential unintended consequence of gaps in the hydrogen refueling network coverage, especially for connector and destination stations with lower initial utilization, is partially mitigated by the structure of the Hydrogen Infrastructure Pathway generating more credits for under-utilized stations, and may be further addressed with targeted grant funding opportunities.
- Potential manipulation through false/stranded/poor quality/excessive capacity hydrogen refueling infrastructure is addressed through qualification requirements for stations to meet established and industry-recognized performance standards.

This pathway would create a durable and scalable mechanism to partially offset low utilization during early commercialization of hydrogen fuel.

Sincerely,

Wayne Leighty