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December 11, 2017

CHBC Comments on ARB Proposed Fiscal Year 2017-18 Funding Plan for Clean Transportation Incentives

Dear Chairman Nichols and Members of the Board,

The California Hydrogen Business Council (CHBC) appreciates the opportunity to comment on the Proposed Fiscal Year 2017-18 Funding Plan for Clean Transportation Incentives. The CHBC is a California industry trade association with a mission to advance the commercialization of hydrogen in transportation and stationary sources to reduce greenhouse gas, criteria pollutant emissions and dependence on oil. Our more than 100 members include fuel cell and electrolyzer companies, auto manufacturers, industrial gas companies, and natural gas companies with an interest in hydrogen and hydrogen infrastructure in California.ⁱ

We have reviewed the plans for freight facilities, the incentives for buses and the Three-Year Investment Strategy for Heavy Duty Vehicles, and we are pleased that they are favorable to the hydrogen industry and include fuel cell technologies as part of the paths to clean transportation.

Zero and Near-Zero Emission Freight Facilities Project

ARB's plan to reduce GHG and criteria pollutant emissions in freight facilities with the proposed \$100 million Low Carbon Transportation Allocation and \$50 million Trade Corridor Enhancement Account Allocation is fully supported by the CHBC. The additional public health benefits to disadvantaged communities make these proposed projects essential for California. It is critical to take the necessary measures to ensure the GHG reduction goals set by AB32 are met. Demonstrating the widespread commercial acceptance of the various types of zero emission vehicles is required to move forward on the path to commercialization. Furthermore, this will drive forward the adoption of heavy duty hydrogen fueling infrastructure by taking advantage of a universal fueling hub for multiple types of zero emission hydrogen fuel cell vehicles.

Deploying hydrogen fuel cell vehicles and equipment in freight facilities will demonstrate the practicality and economic viability of the technology.

The actions set forth in the California Sustainable Freight Action Plan for a Sustainable Freight Transport System, including deploying over 100,000 freight vehicles capable of zero-emission operation by 2030, require funding such as the monies proposed for the Zero and Near-Zero Emission Freight Facilities Project to enable the transition of freight facilities to zero emission. This important step forward will create flagship projects to act as models, allowing and encouraging other facilities to emulate this progress.

There are many applications for fuel cells in on and off-road equipment including: yard trucks, on-road delivery trucks, transportation refrigeration units, drayage trucks, locomotives, cargo handling equipment, rubber tired gantry cranes, yard trucks, ground support equipment, forklifts, tugboats and other harbor craft. With the growing adaptation of fuel cells around the globe, particularly in Asia, the unit cost of production is declining and therefore hydrogen fuel cells are becoming a more economically competitive zero emission technology option.

So, the CHBC applauds and supports the efforts and funding proposed in the Zero and Near-Zero Emission Freight Facilities Project and recommends to the Board that the project be executed as written.

HVIP for Fuel Cell Electric Buses

We are very supportive of the proposed \$300,000/bus incentive. This will enable the industry to bridge the gap between current price levels and diesel hybrid bus prices. As it takes some time to convince operators and conduct transit bus procurements, we would request the proposed voucher to be in place for at least a three-year period.

The proposed \$100,000/bus funding for hydrogen infrastructure is appropriate for transit agencies who have already existing infrastructure to conduct an upgrade to accommodate more vehicles, but it is not enough to support the construction of new fueling stations. We recommend dedicated funding for new heavy duty hydrogen stations in the funding plan.

Three-Year Investment Strategy for Heavy-Duty Vehicles with specific page comments

Page 140 – We appreciate that fuel cell technology is recognized as one of the pathways to near-term and long-term goals.

Page 144-146 – In the Technology Status Snap-Shot, we request adding that a scalable hydrogen refueling station will address the needs of large vehicle fleets at a potentially competitive cost as a benefit of fuel cell electric vehicles for heavy duty application. We disagree with the text that says “Unknowns about the life cycle of the fuel cell and time before replacement” on page 145. Fuel cell electric buses (FCEBs) have been in commercial service for over 10 years in different climate conditions. Current fleets in operation at AC Transit and London UK have proven that fuel cell stack life time is over 20,000 hours, or six years of operation. In agreement with the statement on page 146 “In on-road applications FCEV technology is straddling pilot and commercial stages for transit buses and could benefit from some additional pilot funding, particularly to assist with infrastructure”, we strongly support the need for additional funding for hydrogen infrastructure. Also on page 146, FCEV Opportunities over the Next Three Years, we want to note that progresses made with FCEBs will accelerate the integration of fuel cell technology and infrastructure for trucks. There is also an opportunity for hydrogen and fuel cell technology in rail applications, with on-going pilot projects in China and Germany.

Page 157-160 – “Beach heads to technology pathways” – In Figure II-11, the figure shows the fuel cell electric transit bus leading to fuel cell range extender technology demonstration and nothing further. We strongly believe that fuel cell technology will enable electrification of medium and heavy duty trucks. That is because the tradeoffs stemming from accommodating battery weight at the cost of payload is unlikely to meet the requirements by some fleet operators regarding vehicle range and battery recharging time, which is not compatible with high vehicle utilization needed for some applications. Therefore, there should be an arrow (path) from “FC range extender tech demo” to MHD delivery and HD regional, since fuel cells will be a part of those applications.

Page 167 – We are fully supportive of the identified “Seed Promising Next Markets”. Coupled with this will be aggressive pilot stage investments, including FCEV transit buses, FCEV yard hostlers and other off-road equipment, and FCEV medium-duty delivery vehicles, particularly in the higher weight classes (classes 6-8).

Page 168 – “Funding Needed. To assemble the recommended funding, staff identified the required level of activity to move pathway technologies forward toward 2030 goals over the three-year funding period”. It is very important for deployment projects to have the funding visibility of a three-year period.

Page 170 - “In the early years of deployment, assistance with infrastructure costs will be crucial.” The CHBC is supporting this because a three-year funding plan must include hydrogen infrastructure for heavy duty vehicles.

Thank you for your consideration!

Sincerely,



Emanuel Wagner
Assistant Director | California Hydrogen Business Council

ⁱ The views expressed in these comments are those of the CHBC, and do not necessarily reflect the views of all of the individual CHBC member companies. Members of the CHBC include Advanced Emission Control Solutions, Air Liquide Advanced Technologies U.S. LLC., Airthium, Alameda-Contra Costa Transit District (AC Transit), American Honda Motor Company, Anaerobe Systems, Arriba Energy, Ballard Power Systems, Inc., Bay Area Air Quality Management District, Beijing SinoHytec, Black & Veatch, BMW of North America LLC, Boutin Jones, Cambridge LCF Group, Center for Transportation and the Environment (CTE), CNG Cylinders International, Community Environmental Services, CP Industries, Dash2energy, Eco Energy International, LLC, Eldorado National – California, Energy Independence Now (EIN), EPC - Engineering, Procurement & Construction, Ergostech Renewal Energy Solution, EWII Fuel Cells LLC, First Element Fuel Inc, FuelCell Energy, Inc., GenCell, General Motors, Geoffrey Budd G&SB Consulting Ltd, Giner ELX, Gladstein, Neandross & Associates, Greenlight Innovation, GTA, H2B2, H2Safe, LLC, H2SG Energy Pte Ltd, H2Tech Systems, Hitachi Zosen Inova ETOGAS GmbH, HODPros, Horizon Fuel Cells Americas, Inc., Hydrogenics, Hydrogenious Technologies, Hydrogen Law, HydrogenXT, HyET - Hydrogen Efficiency Technologies, Hyundai Motor Company, ITM Power Inc, Ivys Inc., Johnson Matthey Fuel Cells, Kontak, LLC, KORE Infrastructure, LLC, Life Cycle Associates, Linde North America Inc, Longitude 122 West, Inc., Loop Energy, Luxfer/GTM Technologies, LLC, McPhy Energy, Montreux Energy, MPL Consulting, Inc., National Renewable Energy Laboratory (NREL), Natural Gas Fueling Solutions – NGFS, Natural Hydrogen Energy Ltd., Nel Hydrogen, New Flyer of America Inc, Next Hydrogen, Noyes Law Corporation, Nuvera Fuel Cells, Pacific Gas and Electric Company - PG&E, PDC Machines, Planet Hydrogen Inc, Plug Power, Port of Long Beach, PowerHouse Energy, Powertech Labs, Inc., Primidea Building Solutions, Proton OnSite, RG Associates, Rio Hondo College, Rix Industries, Sacramento Municipal Utility District (SMUD), SAFCell Inc, Schatz Energy Research Center (SERC), Sheldon Research and Consulting, Solar Wind Storage LLC, South Coast Air Quality Management District, Southern California Gas Company, Sumitomo Corporation of Americas, Sunline Transit Agency, T2M Global, Tatsuno North America Inc., The Leighty Foundation, TLM Petro Labor Force, Toyota Motor Sales, United Hydrogen Group Inc, US Hybrid, Verde LLC, Volute, Inc., WireTough Cylinders, LLC, Zero Carbon Energy Solutions.