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7/14/2017

CHBC Comments to ARB on VW’s June 29, 2017, Supplement to the California Investment Plan

Dear Chairman Nichols, dear Members of the Board,

The California Hydrogen Business Council (CHBC)ⁱ is very appreciative of the sustained efforts of the ARB to help VW improve their proposed investment plan. It is in that light that the CHBC continues to be disappointed by VW’s sustained resistance to the requests by ARB and stakeholders to develop and commit to an investment plan that is consistent with the consent decree and the State of California’s GHG reduction and electrification priorities.

The CHBC has previously provided comments to the ARB as well as Electrify America concerning the role of hydrogen fuel cell technology in the investment plan. Today’s comments focus on Electrify America’s response to CARB and stakeholder requests to include fuel cell technology in both the public education and outreach as well as the infrastructure portions of the investment plan addendum (Section 7 “Hydrogen Fuel Cell Vehicle Technology”).

Public Education and Outreach

Electrify America states the following:

Electrify America plans to incorporate information on attributes of electric drive vehicles powered by both batteries and hydrogen fuel cells in its Cycle 1 California-specific Brand-neutral Public Education and Outreach activities, as CARB has requested.⁵

In footnote 5, Electrify America then qualifies this with the following statement:

⁵ The May 24, 2017 letter from CARB equates “brand neutral” with “technology-neutral.” Brand neutral is defined in Appendix C as materials that “do not feature or favor Settling Defendants’ vehicles or services.” It does not reference technology neutrality. Electrify America will incorporate fuel cell technology in its brand-neutral public education efforts where appropriate.

Considering electrification strategies vary among manufacturers, the CHBC disagrees with Electrify America’s interpretation of the definition of brand neutral in Appendix C of the Consent Decree.

If outreach activity focuses exclusively or in large part on certain technologies within the core of the Settling Defendant’s vehicles or services, it clearly favors these vehicles and services, and therefore inherently does not fulfill the definition of “brand neutral.” In addition, the seemingly purposeful vagueness of Electrify America’s statement to include fuel cell technology “where appropriate” gives us great pause and increases our concern of VW’s non-committal approach to this technology.

Therefore, CARB should require that Electrify America have an **objective** metric to determining that all electric drive technologies are promoted in a similar manner, including battery electric, fuel cell electric, plug-in battery and plug-in fuel cell electric technologies.

Investment in H2 Infrastructure

Electrify America states:

Electrify America is focusing its ZEV refueling infrastructure investments on filling the supply-demand gap to serve the greatest need for ZEV refueling.ⁱⁱ

Unlike plug-in battery EVs, which are mainly charged at home and for which public infrastructure is important for **improving** customer acceptance, FCEVs require infrastructure **in advance** of vehicle deployment since it is the only method for refueling. Electrify America rationalizes their exclusive focus on charging infrastructure with the statement:

By comparison, the projected supply-demand gap for plug-in electric vehicles (PEVs) through 2020 is more than 90 percent.

Electrify America provides **no evidence** for that assertion, and also claims that no such gap exists for FCEVs. Electrify America attributes the lack of a supply-demand gap for FCEVs from the January 2017 CARB/CEC AB8 Joint Staff Report.ⁱⁱⁱ

This attribution by Electrify America not only mischaracterizes the CEC/CARB report, but also disregards the important distinction that FCEVs **require infrastructure in advance of vehicle deployment**. While the CEC/CARB Joint Staff Report indicates sufficient H2 fueling capacity (see Table 5 below) through 2020, the more salient point of the Staff Report was **a lack of capacity by 2021** and the need to increase station deployment **prior to this time**.

Table 5: Stations, Fueling Capacity, and Projected Fuel Demand

	2017	2018	2019	2020	2021	2022
Quantity of Open Retail Stations	50	58	66	74	82	90
Total Nameplate Capacity (kg/day)	9,380	10,820	12,260	13,700	15,140	16,580
FCEV Fuel Demand (kg/day)	4,400	7,200	9,200	12,800	23,700	30,300

Source: ARB

It is also important to note that the station numbers used in Table 5 are optimistic as indicated by the fact that according to the California Fuel Cell Partnership, as of June 30, 2017, only 28 out of the 50 retail stations projected for 2017 are operational for retail in California. The CHBC expects this trend to

continue in some form beyond 2017. Therefore, considering a station build-out scenario based on current numbers, the supply-demand gap is expected to occur earlier than 2021, and will become even more pronounced in areas of high utilization. Retail station owners have already seen sporadic shortages of hydrogen at times of high demand at specific stations.

It is important to note that hydrogen fueling station deployment takes time (currently at least 17 months from award to retail opening, with an average of 2 years)^{iv}, and even using the metrics stated by Electrify America, investments in the first phase of the investment plan would come online right at the time when additional capacity is projected to be needed. Undue delay of station investment will not only affect the willingness of auto manufacturers to deploy FCEVs in the numbers projected in the AB 8 report, but also influence customer acceptance to purchase FCEVs when a lack of fueling stations is foreseeable. This would be entirely detrimental to California's electrification goals.

In summary, the CHBC is very concerned about the lack of attention given by the VW proposal and supplement with regards to hydrogen fuel cell technology in the areas of infrastructure and education & outreach. In order to reduce the anticipated bottleneck issue for hydrogen fueling stations in relation to FCEV sales, the CHBC urges that CARB require VW to amend the Cycle 1 investment plan by making meaningful commitments towards hydrogen fueling infrastructure investments as well as education and outreach activities. As stated in CHBC's previous comments, if ARB believes that, despite CHBC's concerns, requiring VW to revise their investment plan would be detrimental to California's interests, the CHBC recommends that VW's investment in battery-only infrastructure be recognized in upcoming zero-emission infrastructure investments by the State, to compensate for the lack of hydrogen investment in this plan. Furthermore, considering Electrify America's continued misunderstanding of the needs of hydrogen fueling infrastructure in California and VW's apparent lack of experience in this field, ARB should require VW and Electrify America to coordinate with stakeholders in the hydrogen fuel cell industry, potentially in the form of an advisory council, to close this knowledge gap.

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, LP, Advanced Power and Energy Program (APEP) - UC Irvine (UCI), Air Liquide Advanced Technologies U.S. LLC., Airthium, Alameda-Contra Costa Transit District (AC Transit), American Honda Motor Co., Inc., Anaerobe Systems, Ballard Power Systems Inc., Bay Area Air Quality Management District (BAAQMD), Beijing SinoHytec, BMW of North America LLC, Boutin Jones, California Air Resources Board (CARB), California Fuel Cell Partnership (CaFCP), California Performance Engineering Inc., CALSTART, Cambridge LCF Group, Center for Transportation and the Environment (CTE), China Hydrogen Fuel Cell Corporation, Coalition for Clean Air (CCA), Community Environmental Services, CP Industries, E4 Strategic Solutions, Eco Energy International LLC, ElDorado National – California, Energy Independence Now (EIN), EPC, Ergostech Renewal Energy Solution, First Element Fuel Inc, FuelCell Energy, Inc., General Motors Corporation, Geoffrey Budd G&SB Consulting Ltd, Giner, Inc., Gladstein, Neandross & Associates (GNA), Golden State EPC, Greenlight Innovation, GTM Technologies Inc., H2B2, H2Safe, LLC, H2SG Energy Pte Ltd,

H2Tech Systems, HODPros, Horizon Fuel Cells Americas, Inc., Hydrogenics Corporation, Hydrogenious Technologies, HydrogenXT, Hyundai Motor Company, i-2-m, Idaho National Laboratory, Intelligent Energy, IRD Fuel Cells LLC, ITM Power Inc, Ivys Inc., Johnson Matthey Fuel Cells, Linde North America Inc, Loop Energy, McPhy Energy, Millennium Reign Energy LLC, Montreux Energy LLC, MPL Consulting, Inc., National Renewable Energy Laboratory – NREL, Nel Hydrogen, New Flyer of America Inc, Next Hydrogen Corporation, Noyes Law Corporation, Nuvera Fuel Cells, Pacific Gas and Electric Company - PG&E, Paramount Energy West LLC, PDC Machines, Inc., Planet Hydrogen Inc, Plug Power, Port of Long Beach (POLB), PowerHouse Energy, Powertech Labs, Inc., Proton OnSite, Ramco Consulting Company Inc, Rio Hondo College, RIX Industries, Sacramento Municipal Utility District (SMUD), SAFCell Inc, Schatz Energy Research Center (SERC), Sheldon Research & Consulting, Solar Hydrogen System, South Coast Air Quality Management District (SCAQMD), Southern California Gas Company, Sumitomo Corporation of Americas, SunLine Transit Agency, Tatsuno North America Inc., Terrella Energy Systems Ltd, The Leighty Foundation, TLM Petro Labor Force, Toyota Motor North America Inc., United Hydrogen Group Inc, US Hybrid Corporation, WireTough Cylinders, LLC, Zero Carbon Energy Solutions.

ⁱⁱ Page 29, https://www.arb.ca.gov/msprog/vw_info/vsi/vw-zevinvest/documents/california_zev_investment_plan_supplement_062917.pdf

ⁱⁱⁱ <http://www.energy.ca.gov/2017publications/CEC-600-2017-002/CEC-600-2017-002.pdf>

^{iv} p.22, AB 8 Report