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Proposal to Volkswagen for Education Efforts and Infrastructure Investments in Hydrogen Fuel Cell Electric Vehicle Solutions to Zero Emission Vehicle Requirements in California

Prepared for: Volkswagen Group of America

January 16, 2017

The California Hydrogen Business Council (CHBC) is composed of over 100 companies¹, agencies and individuals creating businesses for hydrogen-fueled zero emission energy and transportation markets in California. As Volkswagen (VW) plans for the uses of its funds dedicated to zero emission vehicles (ZEVs), the CHBC believes that VW must allocate an appropriate portion of the investment to hydrogen fuel cell electric vehicle (FCEV) options that offer benefits beyond those normally attributed to battery electric vehicles. Volkswagen must not merely continue investments in battery recharging and vehicle technology that benefit only the battery pathway to ZEVs.

The California Hydrogen Business Council (CHBC) strongly supports VW investments in a way that maximizes adoption of ZEV's to advance California's leadership in environmental policy, and the role that fuel cell electric vehicles will play, alongside battery electric vehicles, to reach local and regional emission requirements and California greenhouse gas goals. The VW commitment must include hydrogen infrastructure and outreach efforts in its consent-decree investment plans.

In particular, the CHBC proposes the following in VW investment plans:

1. The funding of **public outreach** efforts aimed at making the public in California fully aware of, and comfortable with, hydrogen FCEV's, infrastructure and associated technologies.
2. Expansion of the developing **hydrogen refueling station network** and supporting infrastructure to enable drivers throughout the state to travel for long distances in FCEVs, and to support the emerging market for hydrogen-fueled transit and freight vehicles.
3. Fuel cell powered **transit buses**, shuttle and other transport vehicles, fully capable of the performance, range and rapid fueling requirements for these markets.
4. Fuel cell powered **goods movement and freight transport vehicles**, fully capable of meeting the performance, weight and volume requirements for their markets. Fuel cell powered heavy duty Class 8 trucks greatly benefit disadvantaged communities that are impacted most by mobile source air pollution along freight corridors.

5. Hydrogen production that that enables primary renewable energy development, including multi-megawatt power-to-gas deployment.
6. Development of the above hydrogen infrastructure in ways that further the Green Cities Vision.
7. Deployment of hydrogen refueling stations that enable ZEV's for the 40% of Californians living in multi-family dwellings.
8. Support for large-scale renewable hydrogen production facilities to enable cost-effective zero carbon fuel for FCEVs.

CHBC believes strongly that the settlement money needs to be used equitably to fund a balanced portfolio of zero emission vehicle technologies. For California to reap the greatest environmental benefit from VW ZEV investments, VW must support hydrogen FCEVs.

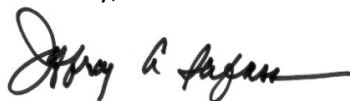
The mission of the CHBC is to advance the commercialization of hydrogen in the energy and transportation sectors, including passenger vehicles, goods movement, and stationary power systems to reduce emissions and dependence upon petroleum products. More information is at www.californiahydrogen.org.

The CHBC has been requested by its Board of Directors to follow the VW ZEV Investment Plan process closely, and to provide help and encouragement in that process where possible.

Many CHBC members have or will be submitting project proposals to VW for their consideration. We have great expectation that these projects will well support California's current and long term goals and will meet guidelines for consideration in VW's investment plan.

The CHBC looks forward to working with the California authorities and the Volkswagen Group as this process continues.

Sincerely,



Jeffrey A. Serfass

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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. Organizational members of the CHBC include AC Transit, Air Liquide Advanced Technologies U.S. LLC, American Honda Motor Co., Inc., Ballard Power Systems, Bay Area Air Quality Management District, Beijing SinoHytec, Bethlehem Hydrogen Inc, BMW of North America LLC, California Fuel Cell Partnership, CALSTART, Cambridge LCF Group, Center for Transportation and the Environment – CTE, China Hydrogen Fuel Cell Corporation, Coalition for Clean Air (CCA), Community Environmental Services, E4 Strategic Solutions, Eldorado National – California, Electro Power Systems, Energy Independence Now (EIN), First Element Fuel Inc, FuelCell Energy, Inc., General Motors Corporation, Giner, Inc., Gladstein, Neandross & Associates (GNA), Golden State EPC Inc, Greenlight Innovation, GTA, Inc., GTM Technologies Inc., H2B2, H2Safe, LLC, H2Tech Systems,

Horizon Fuel Cells Americas, Inc., Hydrogen in Motion, Hydrogenics Corporation, Hydrogenious Technologies, HydrogenXT, Hyundai Motor Company & Kia Motors Corp, 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, Longitude 122 West, Inc., Loop Energy Inc, McPhy Energy, MPL Consulting, Inc., National Renewable Energy Laboratory – NREL, Nel Hydrogen, Next Hydrogen Corporation, Nuvera Fuel Cells LLC, Pacific Gas and Electric Company - PG&E, Paramount Energy West LLC, PDC Machines, Inc., Plug Power, Inc., Port of Long Beach – POLB, PowerHouse Energy Americas, Powertech Labs, Inc., Proton OnSite, Ramco Consulting Company Inc, Rio Hondo College, Sacramento Municipal Utility District (SMUD), SAFCell Inc, Schatz Energy Research Center – SERC, South Coast Air Quality Management District (SCAQMD), Southern California Gas Company, Sumitomo Corporation of Americas, SunLine Transit Agency, Terrella Energy Systems Ltd, Toyota Motor North America Inc., UCI - APEP - Advanced Power and Energy Program - UC Irvine, United Hydrogen Group Inc, US Hybrid Corporation, WireTough Cylinders, LLC, Zero Carbon Energy Solutions, Ztek Corporation.