



June 12, 2012

California Air Resources Board
1001 "I" Street
P.O. Box 2815
Sacramento, California 95812

California Energy Commission

DOCKETED
12-HYD-01

TN # 65884

JUN 19 2012

To Whom It May Concern:

We would like to take this opportunity to discuss the inclusion of hydrogen infrastructure funding for the material handling industry as an integral element of California Energy Commission's pursuit of a hydrogen highway. While Plug Power fully supports investments in all fuel cell applications, we strongly encourage the California Air Resources Board and the California Energy Commission to specifically include hydrogen infrastructure for material handling applications in its funding plans and in its solicitations.

Hydrogen infrastructure installed and operating in the material handling sector is a critical component of industry-wide hydrogen installation development and success. To date, Plug Power has shipped more than 2,200 GenDrive systems to material handling customers. These commercial systems have accumulated over 6.5 million hours of runtime. Each customer purchasing Plug Power's GenDrive systems installs hydrogen infrastructure onsite to meet their fueling requirements. These hydrogen infrastructures, with the addition of separate outdoor dispensers, are capable of supporting the fueling requirements for on-road fuel cell vehicles.

Unfortunately, to date, the Energy Commission's funding plans and solicitations effectively preclude material handling customers from applying as eligible applicants for hydrogen infrastructure funding.

As stated in the FY 2010-2011 Investment Plan for the Alternative and Renewable Fuel and Vehicle Technology Program, "The Energy Commission does not intend to fund non-road applications in FY 2010-2011, but acknowledges their importance and potential to further fuel cell technology."

In the FY 2011-2012 Investment Plan for the Alternative and Renewable Fuel and Vehicle Technology Program, the Energy Commission again acknowledged the importance of non-road applications and their potential to further fuel cell technology but took the position that the recent solicitation for hydrogen fueling infrastructure did not exclude non-road fueling stations. In the Energy Commission's opinion, "Such stations were eligible as long as a proper could present a project that combined non-road fueling with FCV fueling dispenser installations in a multi-use project (and adhere to all other minimum requirements of the solicitation)."

The Energy Commission then continued by stating "no such project proposals were received."

The Energy Commission did not receive project proposals for material handling applications because the very nature of the material handling environment precludes this technology from

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being eligible based on a reading of the minimum requirements of the solicitation. The primary requirement in the Energy Commission's solicitations that preclude material handling hydrogen infrastructure is set forth below:

- Station Design, Ownership and Operation: “retail-like design and appearance, meeting minimum standard terms of operation: station must be safe, well-lit, have adequate ingress/egress to the fueling facility with ample directional signage from the nearest thoroughfare; 6-10 hours of daily operation; attendant available with adequate notice; self-serve, menu-driven dispenser; no Personal Protection equipment required....station approval by at least one [fuel cell vehicle] OEM with the OEM's estimated throughput per station.” *Source: Alternative and Renewable Fuel and Vehicle Technology Program Solicitation Number PON-11-609, February 2012.*

Additionally, in attempting to respond to the Alternative and Renewable Fuel and Vehicle Technology Program Solicitation in June 2010, we formally submitted questions to get feedback specifically on our application. Our questions and the Energy Commission's responses are below:

- Question 5: If a company made a commitment to public fueling infrastructure at a later date (but would be servicing hydrogen lift-truck fleet internal to them to start off) would they be eligible for funding?

Answer 5: No, the primary focus of this solicitation is funding public fueling stations for fuel cell vehicles (FCV). A later commitment for public fueling would have to go into a proposal for a future solicitation where hydrogen fueling infrastructure is eligible.

- Question 6: If there is a mixed use fueling availability does it have to be outside the fence line with no restrictions? Could it be inside the fence with a check-in at a guard shack (for example)?

Answer 6: No, the fueling station can neither be inside a fence, nor reachable through check-in at a guard shack. This solicitation calls for fueling stations with unrestricted access. The primary focus of this solicitation is fueling infrastructure for FCVs. Public access and adequate egress/ingress are spelled out in the minimum requirements section of the solicitation. *Source: Questions and Answers for the Alternative and renewable Fuel and Vehicle Technology Program Solicitations: PON-09-608, June 23, 2010.*

Plug Power's material handling customers execute contracts for hydrogen infrastructure equipment to supply hydrogen to support their material handling fleets. The liquid hydrogen storage equipment and compression equipment is located outside of the facility and piped into the facility at strategically located indoor hydrogen dispensers. However, many of our material handling customers are open and willing (with state funding) to add a pipeline from the hydrogen storage equipment to outdoor hydrogen dispensers located on their property for on-road fuel cell vehicles.

Our customers cannot afford, nor are they interested in, building “retail-like” hydrogen gas stations. Instead, they are encouraged by this technology and would gladly offer to make outdoor hydrogen dispensers available on their grounds to fuel cell vehicles. Is it highly unlikely that the material handling customers will have the ability or the desire to 1) construct retail-like hydrogen fueling stations that are 2) located off the bounds of their property. As our customers are located near major thoroughfares to support the very nature of their operations, we also find it unnecessarily burdensome to require a fuel cell vehicle OEM to approve of the location. So long as these types of minimum requirements exist, the Energy Commission will continue to effectively bar material handling customers from applying for this funding.

If the Energy Commission is willing to explore a partnership with material handling applications, investment in hydrogen fueling infrastructure and dispensers would greatly reduce the financial burden on California because the customer/owner of the facility would share in the cost to install the hydrogen storage and compression infrastructure. Support from our California customers also compliments NREL’s vision of an ideal hydrogen highway. Please refer to the slide attached, which illustrates current and potential material handling customers located along the California hydrogen highway.

To enable this type of partnership, however, the Energy Commission must reconsider its current requirements in creating a hydrogen highway. Though a hydrogen dispenser located at a material handling customer site does not have the public relations impact of a retail-like hydrogen station, it would be functional, would meet technical requirements to fuel hydrogen fuel cell vehicles, and would cost the state of California less to implement.

Accordingly, Plug Power respectfully requests that the California Air Resources Board and California Energy Commission strongly reconsider the minimum eligibility requirements that effectively withhold funding for the material handling applications. Investments in hydrogen infrastructure for material handling applications are an essential piece of the solution to a realistic, near-term hydrogen economy.

Thank you for your consideration and support. We appreciate that you recognize the value that material handling hydrogen installations offer to the fuel cell industry and we look forward to working with you moving forward. Please do not hesitate to contact me with any questions.

Sincerely,



Gerard L. Conway, Jr.
General Counsel

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CALIFORNIA Current Customers and Opportunities

Trailblazing the Hydrogen Highway

