August 15, 2012

California Energy Commission
Dockets Office, MS-4
Docket No: 12-HYD-1 Hydrogen and Transportation
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: Submittal by Plug Power Inc. – Input for Developing a New Solicitation for Hydrogen Infrastructure

To Whom It May Concern:

We would like to take this opportunity to address some of the comments raised during the June 29, 2012 and July 10, 2012 workshops regarding California Energy Commission's (CEC) strategy and solicitation for hydrogen infrastructure.

Plug Power Inc. continues to be the leader in deployment PEM fuel cells under 25kW with over 2,800 units in the field, having 8 million hours of operation. An indicator of our success in the industry is that in the United States, 19 of every 20 hydrogen fuelings made each day are currently made to fuel GenDrive material handling fuel cell products operated by customers like Walmart, Sysco Foods, P&G, Winco Foods, Coca Cola and Kroger. Plug Power currently has 37 material handling customer sites with over 100 dispensers that provide 100% uptime. We believe the infrastructure in place and being built out each day at our customer sites can and should be leveraged to address the emerging fueling needs of the fuel cell automobiles as they begin to come to the commercial market space.

The inclusion of hydrogen infrastructure funding for the material handling industry should become an integral element of the CEC's pursuit of a hydrogen highway. Existing and potential hydrogen infrastructures at material handling customer locations alongside California's main thoroughfares offers California the potential for convenient, cost-effective "dual use" connector hydrogen stations that will be critical to developing a practical and accessible hydrogen economy.

Though this "dual use" strategy has received strong support from the federal and state energy agencies, it has also met with some resistance. Certain industrial gas companies and fuel cell vehicle manufacturers have voiced reluctance to include material handling infrastructure as part of the CEC's funding initiatives for hydrogen infrastructure. This resistance has manifested in two main arguments: 1) adapting material handling hydrogen infrastructure for on-road vehicle fueling is complicated and expensive and 2) the original purchasers of hydrogen vehicles will be affluent customers who will not want to travel outside of their neighborhoods for hydrogen fuel.

Hydrogen infrastructure for the material handling industry is, by-in-large, the same hydrogen infrastructure required for on-road vehicles with some exceptions - most notably, on-road

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vehicles may be designed for 700 bar pressure, while material handling fuel cell equipment typically fuels at 350 bar.

The compression hardware required to increase hydrogen from 350 bar to 700 bar (only a 2:1 compression ratio) is far less expensive than building completely new infrastructure for on-road vehicles. We understand that a dispenser and additional plumbing would be required, but the overall economics are far more attractive to achieve hydrogen supply rated for on-road vehicles. Moreover, the fueling station that can serve dual purposes to fuel both material handling equipment and on-road vehicles offers far more value per dollar of CEC investment.

Industrial gas companies and fuel cell manufacturers have also highlighted that focus group research suggests that the initial, affluent customers of fuel cell vehicles have clear preferences for new, retail hydrogen stations centrally located in their neighborhoods.

Connector stations, like retail stations, are both part of viable hydrogen economy. Accordingly, California's hydrogen economy should be structured to support all of California's hydrogen requirements, not only the neighborhoods of targeted affluent customers of fuel cell vehicles. Moreover, it is quite likely that any purchaser of fuel cell vehicles will eventually want or need to travel outside of their neighborhood. While Compton, Riverside, San Leandro, Oxnard and Modesto may not be considered home to many of the initial customers of fuel cell vehicles, our existing and potential material handling customers have hydrogen infrastructures centrally located along major interstates.

The resistance by some industries regarding the inclusion of material handling hydrogen infrastructure is both puzzling and disconcerting. It would seem counterproductive to limit the CEC's options for building a sustainable hydrogen economy, particularly when additional options offer increased convenience and reduced cost. 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.

To date, the application and solicitation parameters put in place by the CEC have effectively precluded material handling customers from applying as eligible applicants for hydrogen infrastructure funding. Combined with recent voiced resistance, Plug Power recommends that the CEC funnel a portion of the hydrogen infrastructure funding specifically for connector stations serving both on-road and material handling equipment. Without this type of direct support and instruction from the CEC, Plug Power is concerned that the industrial gas companies and fuel cell vehicle manufacturers will refuse to partner or engage on these types of projects, instead focusing on the more lucrative and appealing neighborhood, retail stations.

Accordingly, Plug Power respectfully requests that the California Air Resources Board and CEC strongly reconsider the minimum eligibility requirements that effectively withhold funding for the material handling applications. We also request that future solicitations set aside funding specifically for connector stations at material handling locations to encourage partnership.

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 and Senior Vice President, Government Affairs