

**Written Comments on the  
HYDROGEN DRAFT SOLICITATION CONCEPTS  
Alternative and Renewable Fuel and Vehicle Technology Program  
Subject Area – Hydrogen Refueling Infrastructure  
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Per the request by representatives of the California Energy Commission, the following are written comments in response to the HYDROGEN DRAFT SOLICITATION CONCEPTS document referenced above and discussed during the Workshop of August 13 and 14.

**1. General Comment:**

During 2014 and now in 2015, our company has used the Minimum Technical Requirements identified in PON 13-607 as the performance criteria of the hydrogen fueling stations we are in the process of establishing under contract with the CEC. These performance criteria therefore represent a baseline in technical performance that we have used to establish our system design and the major component selection and correspondingly our teammates for our hydrogen fueling system. The DRAFT CEC Solicitation establishes new performance criteria that greatly expand beyond the performance criteria established in PON 13-607. To satisfy these expanded criteria, our team would be forced to substantially re-designing our system and potentially select new components from different vendors. This approach is counter-productive to establishing repeatable hydrogen fueling system designs with established costs that can be replicated for new installations in the future. We therefore suggest that the performance criteria stated in PON 13-607 be used as the basis for Minimum Technical Requirements for all hydrogen refueling infrastructure solicitations now and into the future.

To encourage development of systems with greater hydrogen production capacity or greater dispensing capability, we suggest that the CEC establish these expanded performance criteria as System Performance Goals and possibly award extra points to competitors who are able to achieve these expanded capabilities. This approach would enable competitors to propose systems that achieve these goals without penalizing competitors that are trying to establish baseline hydrogen refueling systems for multiple replication in the future to help drive down costs and promote wider scale adoption. The pitfall of establishing expanded performance criteria in the category of Minimum System Requirements precludes competitors from proposing their established system designs that satisfied the PON 13-607 criteria.

## Recommendations:

- 1) Use the Minimum System Performance requirements from PON 13-607 as the Minimum System Requirements in all future CEC hydrogen infrastructure solicitations.
- 2) Establish a new performance criteria section in the solicitation titled something like Expanded Performance Capabilities that states the expanded performance goals by the CEC. Additional points for achieving these expanded capabilities could be part of the new scoring criteria.

## **2. Detailed Recommendations for Paragraph 10, Minimum Technical Requirements**

As stated in Paragraph 4, Eligible Projects, for a project to be considered as eligible for CA Government funding, the project must meet the minimum technical requirements. Recommend that the Minimum Technical Requirements be consistent with the requirements established in PON 13-607.

### **A. Hydrogen Quality Requirements,**

The third paragraph states; “a method of continuously monitoring the gas stream to ensure that hydrogen quality meets the SAE J2719 standards at the output.” This requirement goes way beyond the sampling approach requirements identified in PON 13-607. Recommend that the sampling approach requirements identified in PON 13-607 be established as the Minimum Technical Requirements and that in-line gas stream analysis could be included in a new category called Expanded Performance Capabilities.

### **D. Minimum Station Daily Fueling Capacity Requirements**

The minimum daily fueling capacity from PON 13-607 of 100 kg/day should be the Minimum Technical Requirement. Capacity beyond 100 kg/day should be included in a new section of the solicitation titled Expanded Performance Capabilities.

### **E. Minimum Peak Fueling Capacity Requirements**

The minimum daily fueling capacity from PON 13-607 of three consecutive fills of 7 kg each within one hour should be the Minimum Technical Requirement. If the automobile manufacturers have determined that 5 kg tanks will predominate in the market initially, then require peak fueling to be 4 consecutive fills of 5 kg each within one hour. This requirement is close to the PON 13-607 requirement of 21 kg of hydrogen dispensed in one hour. Fueling capacity greater than 20 kg/hr should be included in a new section of the solicitation titled Expanded Performance Capabilities.