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CAFCP Stakeholder Response to 18-HYD-04, Performance and Technical Comments

Additional submitted attachment is included below.

March 15, 2019

California Energy Commission
Docket Unit, MS-4
1516 Ninth Street
Sacramento, CA 95814-5512

Re: Docket No. 18-HYD-04, Draft Solicitation Concepts for Light-Duty Hydrogen Refueling Infrastructure, Performance and Technical Comments

Dear CEC Administrator –

The California Fuel Cell Partnership (CaFCP) respectfully submits this letter of comment to the California Energy Commission (CEC) in response to 18-HYD-04 on behalf of those members participating and commenting. CaFCP, working within its charter, provided the membership a platform for open discussion and input. Although CaFCP acted as the facilitator to develop the content of this letter, the views expressed are a consensus solely of the stakeholders listed.

This letter is submitted as additional comments specifically addressing the performance and technical requirements of the Draft Solicitation Concepts.

Section 12. HySCapE, Station Classifications, and Station Throughput. Part B.

Modeling the Capacity

We appreciate the CEC's proposal to implement an evaluation process for the Hydrogen Refueling Station (HRS) design capacity. It is recommended that the Energy Commission limit the acceptable range of input values of the NREL HySCapE model from 120 seconds as a minimum to 255 seconds as a maximum to better capture the representative customer condition. The lower time limit is based on data from gasoline and hydrogen fueling time between fills. The upper time limit is consistent with the consecutive capacity test method defined in CSA HGV 4.9 (2016) and the LCFS HRI regulation parameters.

Design to Advance the Customer Experience

The proposed requirement for time between fills of 427 seconds (7.1 minutes) as a minimum criterion is too large and may result in a negative customer experience. We recommend that the maximum time between fills be redefined to not exceed 255 seconds.

In addition, it is recommended that the eligible capacity and individual fueling performance be defined for an ending State of Charge (SOC) of >95%, defined as a "full fill" per SAE J2601, which is consistent with the LCFS HRI regulation parameters.

Section 20. Minimum Technical Requirements for Open Retail HRS. Part C – Protocol.

It is recommended that the Draft Solicitation Concepts clarify the language related to the SAE J2601 fueling protocol:

- Each fueling position of the HRS shall conform with the latest published version of SAE J2601 at H70-T40 with communications for FCEV tank systems in all of the light-duty vehicle tank mass categories (2~10 kg)
- The reference to the SAE J2601 fueling protocol implies the applicable "Standard Protocols"; the Draft Solicitation Concepts should not explicitly define the current options of the Table Based and MC Formula-Based methods

Section 20. Minimum Technical Requirements for Open Retail HRS. Part C – Testing.

The Draft Solicitation Concepts describes a "functionally equivalent hydrogen station test apparatus" as an equivalent method to the CARB HyStEP device but does not define or stipulate how this alternate device is managed. It has been observed by several stakeholders and for multiple instances, that the certification or attestation by a 3rd party does not meet the equivalent result of the CARB HyStEP device unless there has been a "level-up" review activity conducted with the 3rd party and requirements for site evaluation defined.

Therefore, it is recommended that the HRS evaluation testing shall be managed by CARB, either using the U.S. DOE HyStEP device or a 3rd party using a functionally equivalent hydrogen station test apparatus. Further, we recommend that CEC grant CARB discretion with the implementation of the ANSI/CSA HGV 4.3 standard such that CARB can manage future changes as needed for HRS evaluation testing. It remains important to retain the clause, "If CARB is not available for testing, automobile OEMs may use best practices to test stations. The data collected/generated during station evaluations and test reports shall be made available to CARB, CEC, and the automobile OEMs," in the Draft Solicitation Concepts until such time that CARB and 3rd party testing agencies can establish a commercial scale program.

Section 20. Minimum Technical Requirements for Open Retail HRS. Part F – Nozzle.

It is recommended the selection and implementation of the H70 fueling nozzle include features to mitigate the occurrence of "freeze", defined as the inability to remove the nozzle from the vehicle due to ice formation inside the nozzle. Fueling nozzles proposed should have been tested or demonstrated to not "freeze" during periods of high-humidity or rain.

Section 20. Minimum Technical Requirements for Open Retail HRS. Part G – POS.

The Draft Solicitation Concepts describes the requirement for a "dedicated point of sale (POS) terminal or a centralized POS terminal at the station". From this language it may be interpreted that the POS must be a separate device from the dispenser. It is recommended that the requirement be modified to remove the words "dedicated" and "terminal" and be a generalized statement that the HRS shall include a POS with the capability to process magnetic strip and EMV™ chip type cards.

Section 20. Minimum Technical Requirements for Open Retail HRS. Part N – ESTOP.

The Draft Solicitation Concepts describes the requirement for a "…cover installed over the emergency shutdown system switch…". It is recommended that the requirement be expanded to require that a "guard or cover" shall be installed on the ESTOP button of the dispenser.

Section 21. Open Retail Checklist.

The Draft Solicitation Concepts refers to check list (Appendix D) that has been developed and iterated over the 38 currently open retail public stations. However, based on past GFO solicitations there is concern that this document will become fixed and unchangeable for all stations awarded over the program. It is recommended that this document have the capability for periodic revision based on a proposed review process that may include GO-Biz, CARB, automotive OEMs, and Station Developers.

Section 23. Data Collection and Reporting Requirements.

The Draft Solicitation Concepts refers to data submittal requirements using the NREL Data Collection Tool. In the former hydrogen GFO-15-605, this tool did not include the ending fill SOC. It is recommended to include the reported dispenser (fueling position) SOC for each fill provided in the data collected. The SOC is one of the primary metrics to evaluate the customer experience at the HRS.

We look forward to a timely review and release of the forthcoming GFO. We compliment the CEC in its forethought and visioning and appreciate the opportunity to provide this feedback to the Draft Solicitation Concepts proposal.

In partnership,

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