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Portfolio Approach for Hydrogen Refueling Station (HRS) Funding

Please see attached pdf file.

Additional submitted attachment is included below.

California Energy Commission (CEC)
Hydrogen Refueling Stations
Alternative Funding Mechanisms
Request for Comment

Docket#: 17-HYD-02

Project Title: Hydrogen Station Network Future Approaches

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RE2H2 Energy Development LLC

1460 Broadway

New York

NY 10036

Tel: (212)548-4546

Name: Sanjeeva Senanayake

Title: Managing Director

Direct Tel: (646)340-5460

Email: sanjeeva.senanayake@re2h2.com

Comments:

RE2H2 Energy Development LLC (“RE2H2”) is a project developer focusing on distributed renewable energy systems, energy storage, and hydrogen refueling infrastructure development. RE2H2 brings a capital markets financing perspective towards hydrogen refueling station (HRS) development and focuses on a scaled portfolio approach towards financing station development.

In particular, we see opportunities to leverage some of the alternative funding mechanisms that the CEC is considering into a larger funding program, and that could facilitate the financing of stations on a portfolio basis with capital markets funding.

In this regard, we wish to provide the following comments to the CEC.

1. CAPEX Funding approach

- This is the most favorable funding mechanism that could be leveraged with private capital, if CEC is willing to consider a pooling of CAPEX grant funding pursuant to a larger portfolio development program.
- For example, the overall CEC CAPEX funds of \$20 million as envisioned for the 2018-2019 solicitation, which is equivalent to funding 10 individual stations at \$2 million per station, could be leveraged with private capital markets funding to achieve funding a larger number

of stations. As an illustration, such a program could target approximately 33 overall stations on a portfolio basis, at a total funding program of approximately \$66 million, with the remaining approximately \$46 million to be raised in the capital markets based on market based IRRs to investors.

- The pooling of CAPEX grants with private investment would allow private investors to achieve requisite return hurdles for the assumed risk, while allowing CEC to maximize leveraging the number of stations in California with the 2018 – 2020 solicitations.
- The effectiveness of the CEC CAPEX funding along with capital markets funding for a portfolio of HRS could be further optimized if combined with some degree of station utilization guarantees (see comments below in #5).

2. OPEX Funding approach

- Less favorable as the sole funding mechanism from a portfolio funding perspective.
- OPEX funding would need to cover the cost of delivered hydrogen (or cost of electricity in the case of electrolysis), for greater impact.

3. CAPEX and OPEX combination funding approach

- Some degree of OPEX funding in combination with CAPEX funding could be utilized to lower the cost of hydrogen at the pump.
- However, the preponderance of the funding is preferred to be in the form of CAPEX than OPEX to support a greater leveraging of private capital funding.

4. Loan Loss Reserve (LLR) mechanism

- Given the risk profile - FCEV adoption and station utilization risks - station financing in the bank market may be limited at this early commercialization stage of FCEV's and hydrogen refueling stations.
- LLR provides for loss recovery, but does not mitigate default risks for senior bank lenders. Default risk would remain significant for senior debt in financing HRS in an early commercialization stage
- However, a combination of CAPEX grants under #1, and utilization of guarantees (see below #5), could allow for some portion of bank debt in a HRS portfolio capitalization.
- In such a scenario, the LLR funding would provide a degree of useful credit enhancement and potentially lower the cost of debt.
 - LLR funding will need to be at scale large enough to enhance bank debt in a larger portfolio financing with potential bank debt in the capital structure.

5. Renewable Fuel Sales Reimbursement and Certificate of Guarantee program (CARB)

- Certificate Ratio. When setting the Certification Ratio, consider the potential gross margin or EBITDA margin per station as the basis in the numerator. The margins should reflect a

market based expectation of returns for the investor that is commensurate with the early stage commercialization risk profile of the FCEV market and hydrogen fueling stations.

- Station Utilization & Reimbursement Rate. We suggest that CEC consider setting utilization benchmarks based upon base case expectation of the financing plan, and consider reimbursement amounts relative to those benchmarks.
 - For example, if base case station utilization expectation is 80%, and the station achieves 40% utilization in a given year, the reimbursement amount should be based on pre-agreed EBITDA margin at 80% utilization less the EBITDA margin actually realized per station at a 40% utilization.
- Maturation Period. We suggest that CEC consider an annual true-up against utilization shortfalls, up to a maximum number of years (for example, the first 7 years of station operations). This will allow investors to recover cash shortfalls more frequently and allow for greater investor risk mitigation.
 - Ramp-up risk in early years would be a critical factor for private investors.
- Renewable Fuel Reimbursement (RFR) should be considered as an additional incentive for station developers to maximize the dispensing of renewable hydrogen at the stations. However, from a capital markets funding perspective, we do not recommend the RFR to be implemented solely in lieu of station utilization guarantees.
- Overall, Station utilization guarantees in the form of a Certificate of Guarantee program, in combination with upfront CAPEX funding grants, and potentially LLR mechanisms, would provide the greatest impact in leveraging available CEC funding for a large scale portfolio financing of HRS in the capital markets (see comments #1 above).

Please do not hesitate to contact us for additional discussion.