

DOCKETED

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LytEn Inc Comments to Docket # 17-HYD-01

Please see attached document.

Additional submitted attachment is included below.



August 15, 2017

Ms. Jean Baronas
Hydrogen Unit Supervisor
Fuels and Transport Division
California Energy Commission
Sacramento, CA 95814

Re: Comments for Docket # 17-HYD-01

Dear Jean:

LytEn, Inc. is pleased to provide comments in response to your latest workshop sponsoring a planned CEC solicitation for the production of in-state Renewable Hydrogen.

Specifically, we submit comments with regards to the following aspects of the solicitation:

1). Off-take Restrictions

The draft specifies that any other alternative use of hydrogen including forklifts, medium or heavy-duty vehicles, off-road vehicles as well as refining component is not allowed. We believe that the solicitation should accept all uses of hydrogen recognized under the Low Carbon Fuel Standards (LCFS) regulation. This will simultaneously create the opportunity for the applicants to find an off-taker in the case if no light-duty vehicle refueling station can be found or accessed. We recommend that the applicant be allowed to demonstrate the capability to sell to the network of CEC funded fuel stations.

2). Points for Innovation

The draft solicitation has the following criteria for scoring of the application:

- Project readiness
- Team experience and qualification
- Project implementation
- Performance
- Project budget and cost effectiveness
- Economic and social benefits
- Sustainability

However, the reward for innovation seems to be entirely missing from the solicitation. The path to a low carbon future can only be paved via technological innovation. New and promising technologies should not be ignored but rather incentivized to promote spur further growth. The same should be reflected by this solicitation.

We would also like to reiterate the importance of the economic viability post-construction. We appreciate that this category is already incorporated in the solicitation. For example, the electrolysis technology may not be economical at the current electricity rates in the order of \$0.15/kWh. It seems that the only feasible scenario would be to buy electricity at rates even lower than the wholesale rates.

3). Technology's Demonstration and Production Capacity



The solicitation draft requires the technology to be demonstrated by being in continuous operation for at least 6 months. It also requires the minimum production capacity to be 1,000 kg/day. Does this mean that the facility must have continuously run on at least 1,000 kg/day capacity for the past 6 months, or for at least a day? A more reasonable expectation would be for the facility to be able to provide operational data for a considerable, continuous period over the previous 6 months while running at a consistent even if small capacity.

Moreover, the total capacity requirement of 1,000 kg per day is too high to allow for most of the upcoming technologies to be able to qualify for the solicitation. The larger the capacity, the larger is the capital cost of its infrastructure. This requirement creates a large mismatch between the available funding and the capital cost requirement of such a project. We recommend reducing this requirement to 200 kg per day to make the solicitation a more suitable incentive for technology development and increasing the in-state renewable hydrogen production capacity.

4). Feedstock Sourcing

Several sources of renewable hydrogen have been contemplated. These include:

- Biomass gasification
- Solar water splitting
- Dairy digester biogas
- Sewage digester
- Landfill gas
- Electrolysis at PV or wind site with power stored as hydrogen

Several developers also contemplating using renewable feedstocks such as solar power or landfill gas with the transfer of renewable credits to conventional hydrogen production technologies. For example, renewable power could be transmitted with grid storage to an electrolyzer or landfill gas could be transmitted with pipeline storage to a steam reformer. The latter two technology options simply combine a financial transaction with an existing hydrogen production technology and they represent no new innovation other than in financial engineering.

Therefore, we recommend that the procurement rank innovative technologies with a direct renewable feedstock source the highest and that renewable hydrogen projects based on paperwork renewable credits be given the lowest priority.

Best Regards,

A handwritten signature in black ink, appearing to read "Dan Cook".

Dan Cook
Pres. and CEO, LytEn, Inc.