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ADEPT Comments Regarding CEC Definition of - On The Same Property

Additional submitted attachment is included below.

October 27, 2023

Abigail Jacob
California Energy Commission

Re: Draft Solicitation Concept for Distributed Clean Hydrogen Production with Onsite End Use (H2ONSITE)

**Comments and Questions Regarding CEC's Definition of Hydrogen Use
"On the Same Property"**

To begin, The Adept group, Inc. (ADEPT) wishes to commend CEC for recognizing the weakest link in the hydrogen ecosystem – Transport – and implementing programs to address it. A significant amount of energy is lost in transporting compressed or liquified hydrogen over long distances. As such, ADEPT fully supports CEC's initiative to promote projects that co-locate the hydrogen source with the hydrogen sink.

At the same time, ADEPT kindly requests further clarification on the wording in the solicitation, particularly mentions of: "onsite" and "on the same property". As ADEPT understands it, the CEC's intention is to reduce the energy & inherent pollution that would result from inefficient transportation of hydrogen. With that goal in mind, it is suggested that funding priority be given to projects that include:

- (a) Minimal losses due to short distances between generation and end-use, and/or
- (b) absence of compression or liquification.

For example, one project plans to generate hydrogen via electrolysis using a 25 MW solar plant. The produced H₂ will subsequently be supplied to fuel cell powered cargo handling equipment at a Port terminal. The distance between generation and end-use is half a mile or less, and it is likely that no compression would be required at the point of H₂ generation as the molecules could be transported via low pressure pipeline.

Examples of clarifying phrases for H2ONSITE:

- The distance between generation and end-use must not exceed "X" miles.
- Transportation losses are reduced by "X%".
- Energy losses due to compression are below "X kWh / kg H₂".
- Hydrogen is not liquified for transport.

4. To ensure that funded projects and their impacts can inform future deployment of hydrogen in California, should the CEC consider additional performance metrics beyond those proposed for the M&V plan in Section IV?

Adept cautions against economic development alone being considered a benefit to local communities. While economic development is usually good for a community, it is possible that GHG emissions can be reduced, and economic development promoted while simultaneously increasing the impact of other harms (e.g. various pollutants). Economic development then should only be considered as a benefit when other environmental and health benefits are realized through the project.

6. Are there specific end uses we should target with the one to five metric ton hydrogen capacity? If so, why?

There are some applications where electricity will be more efficient than hydrogen. As such, priority should be given to end uses where competing zero emissions alternatives (BEVs for cargo handling equipment) are either also in nascent stages or have already demonstrated an inability to effectively meet the requirements.

7. Are there any concerns with this solicitation allowing the use of CCUS for a project to be carbon neutral? If so, why?

CCUS processes have several issues, first the vast majority are incapable of achieving near complete carbon capture. Additionally, other environmental harms might be realized in the carbon capture (potentially toxic scrubbing chemicals and increased energy consumption), transportation (potential release of carbon dioxide from pipelines), and storage (potential release) stages.