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Large-Scale Centralized Hydrogen Solicitation Concept

1. Are the Project Elements in Section 4 (project focus) of this document realistic, reasonable, and feasible?

The water consumption requirement states that a project will have to demonstrate consumption of 9-13.5 L water per kg H2 produced. Many electrolyzer technologies take in at least twice this amount to produce 1 kg H2, but only about 9 L are consumed or reacted - the balance is process water and comes out as effluent, or more concentrated mineralized water. If the water component of section 4 refers to consumed water, this requirement is certainly feasible. However, if the requirement refers to total input water usage, then NovoHydrogen feels this is far too stringent considering the average water usage for electrolysis.

To determine the carbon intensity of H2 production, most hydrogen developers would typically use the federal GREET model as this is the methodology used for purposes of the federal Clean Hydrogen Production Standard and Section 45V production tax credits. Further we also expect the federal GREET model to be updated to accommodate clean hydrogen pathways more accurately. We recognize that CA uses a state-specific GREET model to determine LCFS credits. We would seek clarity as to which version of the GREET model would be required to determine the carbon intensity (CI) of our project. We also advise requiring a hydrogen production with a CI equivalent to the highest lifecycle GHG emissions tier for Title 26 U.S. Code Â§45V of less than 0.45 kg CO2e/kg H2 and clarify if the well-to-gate definition is consistent with the Clean Hydrogen Production Standardâ€™s definition.

2. What would be the appropriate level of project funding that would leverage private investments associated with the work proposed in this draft concept and why?

a. How would limiting the use of grant funds to Eligible Project Costs in Section 3 impact the project? What changes do you recommend, and why?

Many existing state and federal funding opportunities for hydrogen projects have stated that grant funding would be eligible to cover up to 50% of a projectâ€™s total capital requirements. In other words, at least 50% of total capital costs would be supported by private investments. NovoHydrogen believes this is an appropriate benchmark to follow. Limiting the use of grant funds to Eligible Project Costs would have a proportional detrimental impact to project economics â€“ sponsors would need to raise incremental private capital at market rates for equity investment.

3. Is the requirement for spending in California (50% minimum, preference points for spending over 50% in California) feasible?

Yes. Novo would likely use funds for direct labor, land leases, and some equipment providers.

4. Provide any feedback on the two-phase solicitation approach. Is the 1-month abstract deadline and 3-month full application deadline realistic?

Yes. We advise CEC to hold at least 1 check-in meeting with project applicants during the pre-application process and at least 2 check-in meetings during the full application process to answer questions and clarify different submission components.

5. Is four years a feasible project timeline?
a. If grant awardees were CEQA-ready (see CEQA in Section 4) but need to obtain regulatory approvals, permitting, and zoning during the project, is a 4- year timeframe feasible for completion? If not, what is the recommended term for a funded project?

Yes. The time it takes to develop our projects typically ranges anywhere from 1â€“4 years. This involves roughly 3â€“18 months of precontract work (client discovery, site visits, signing a Memorandum of Understanding, and signing a Hydrogen Purchase Agreement), 6â€–24 months of development (permitting, fieldwork, site design and engineering, and signing a Notice to Proceed), and 6-12 months of construction (site preparation, equipment delivery, building, commissioning, and establishing a Commercial Operations Date). Since Novo already has eligible projects with sites and anchor offtakers identified, the actual timeline would likely be shorter than the 4-year maximum. In the event project development and construction takes less than 4 years, we would request flexibility from the CEC to accelerate the 4-year timeline.

6. Please provide relevant comments regarding other considerations not explicitly listed above

Is there a minimum funding amount CEC can provide? While the maximum is $15 million per award, we would like to get a sense of the number of awardees and likely funding amount per project.