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Comment Received From: Proteum Energy, LLC
Submitted On: 6/9/2023
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Comments to Draft Solicitation Concept (Clean Hydrogen Program)

Please see letter attached.

Thank you

Additional submitted attachment is included below.

June 9, 2023

State of California
California Energy Commission

Re: Comments to Draft Solicitation Concept, Clean Hydrogen Program, Subject Area: Large-Scale Centralized Production, May 2023 (Draft Solicitation)

Proteum Energy, LLC is a clean hydrogen production company preparing its CEQA application for our first commercial-scale project which will be located in Tulare County, California. We view the California market, with the support of the State of California, as a leader in deployment of hydrogen technologies and applications. We are pleased to see the California Energy Commission's support of hydrogen energy with its Clean Hydrogen Program. Proteum welcomes the opportunity to comment on the Draft Solicitation, and we provide the following observations and recommendations.

Question No. 1: Proteum believes that the Project Elements are generally appropriate to assist the CEC in determining whether a project is viable and worthy of its support. We believe the Project Elements could attract more qualified projects with the following suggestions:

- To encourage innovation and implementation of new technologies it makes sense that the CEC would want to see, evaluate, and support technologies that are ready for commercial demonstration, but have not yet reached TRL 8. Applicants completing Front End Engineering and Design (FEED) on a technology that has been demonstrated in a relevant environment may not have a demonstration system at scale. The Clean Hydrogen Program is aimed at sponsoring such demonstrations and we believe a readiness threshold of TRL 8 may not encourage applicants from the broadest range of technologies or require the CEC to turn away projects it would otherwise want to support. Accordingly, we recommend that the TRL threshold be no more than 7.
- It would be appropriate to add a Project Element aimed at commercial feasibility, such as "Exhibit commercial viability by demonstrating offtake demand." Such an element would allow the CEC to focus on technology that not only works but is economically viable.

Question No. 2: We support the proposed 50% funding level set forth in the Draft Solicitation.

Question No. 2(a): Proteum generally supports the description of Eligible Project Costs and makes the following recommendations to further the objectives of the CEC:

- To encourage manufacturing and clean energy employment in the State of California, we recommend that Section 1.I be modified to expressly include on-site manufacturing activities as follows: “Equipment, including the on-site manufacture, fabrication, assembly or installation of equipment, and materials specially associated with hydrogen production, storage, and delivery.”
- Because the Solicitation is fashioned to encourage distributed production and commercialization of clean hydrogen, and site construction costs for a new technology can be significant, we recommend that the allocation to *site construction and preparation costs be increased to 10%* and that the allocation to *equipment be reduced to 75%*.

Question No. 3: The requirement that 50% of grant proceeds be spent in California is appropriate to achieve the CEC’s objectives. However, to make that target feasible and encourage greater spending in California, we would suggest that Eligible Project Costs include “the on-site manufacture, fabrication, assembly or installation of equipment” as suggested above.

Question 4: No recommendations.

Question 5: Proteum believes that four years is a reasonable project timeline to permit, install and commission a commercial-scale clean hydrogen plant. However, we believe that requiring the 12-month demonstration to be accomplished within a 4-year timeline may be impractical in some instances or disqualify projects which are operating successfully, but are just short of 12 months of operating history within 4 years. We recommend allowing the 12-month demonstration to be accomplished within a 54-60 month period.

Question 6: To encourage broad participation in the Clean Hydrogen Program, Proteum suggests the following additions and modifications to the Draft Solicitation:

- While the Solicitation is technology agnostic, it emphasizes the production of hydrogen from water and does not expressly encourage other technologies which produce hydrogen from renewable (non-fossil) feedstock, such as clean hydrogen produced from renewable ethanol feedstock. Some of these non-electrolysis technologies are able to produce hydrogen with a negative carbon intensity consuming a fraction of the water electrolysis requires. Encouraging a broader spectrum of technologies cultivates more commercial production options to serve the California hydrogen market.
- We support the Draft Solicitations Milestone 2, which requires the applicant to demonstrate that it has control of the plant site. However, the requirement that the applicant be in possession of the site may impose unnecessary burdens such as lease payments and carrying costs incurred while the project is going through the CEQA process. We suggest that Milestone 2 be modified to require the applicant to demonstrate that it has the “right to possession” of the site. The applicant could do so

by showing that the property is under contract with a non-refundable deposit and a closing scheduled prior to issuance of permits, or that the applicant has an enforceable option to purchase or lease the project site.

Thank you for your consideration of Proteum Energy's comments. Should you wish to discuss these comments further, please do not hesitate to contact me any time by email at john.rosenfeld@proteumenergy.com or by phone at (480) 319-2879.

Sincerely,

Proteum Energy, LLC

/s/

John D. Rosenfeld

Vice President Commercial / Strategic