DOCKETED	
Docket Number:	22-ERDD-03
Project Title:	Clean Hydrogen Program
TN #:	252882
Document Title:	RIC Energy Comments on Onsite Distributed Hydrogen Production and End Use Solicitation Concept
Description:	N/A
Filer:	Chester Hong
Organization:	RIC Energy/Gerard Weir
Submitter Role:	Public
Submission Date:	11/1/2023 1:53:44 PM
Docketed Date:	10/27/2023

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October 27, 2023

California Energy Commission
715 P Street
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Onsite Distributed Hydrogen Production and End Use Solicitation Concept
RIC Energy Comments

Dear California Energy Commission Staff,

RIC Energy respectfully submits the following comments on the California Energy Commission's Clean Hydrogen Program Draft Solicitation Concept for Distributed Clean Hydrogen Production with Onsite End Use (H2ONSITE). RIC appreciates the opportunity to offer feedback on the draft solicitation and requests the Commission take into consideration the following comments when designing the final solicitation.

Question 1. Are the Project Elements in Section IV of this document realistic, reasonable, and feasible?

While most of the project elements in Section IV of the draft solicitation are realistic, reasonable, and feasible, the water consumption requirements are not necessarily practical. The proposed water consumption level of 9-13.5 kilograms of water per kilogram of hydrogen produced would significantly limit the number of viable project sites. A range of 12-17 kilograms of water per kilogram of hydrogen produced would be a much more technically feasible water consumption requirement. This would be a more feasible requirement especially considering that the proposal gives preference to facilities using wastewater, which may result in unintended increased water consumption. The additional water needed to ensure the wastewater is useable for hydrogen production would negate the impact of the utilization of wastewater from the start. To ensure the most realistic, reasonable, and feasible project elements, the water consumption requirements should be updated as stated.

Question 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? How would limiting the use of grant funds to Eligible Project Costs in Section III impact the project? What changes do you recommend, if any, and why?

The overall level of funding available is appropriate, however the solicitation could be improved by making slight changes to the costs eligible for CEC reimbursement. The draft solicitation does not permit the costs of onsite power acquisition to be eligible for CEC reimbursement. Clean power acquisition is a crucial and significant component of developing a clean hydrogen production facility and one that will likely incur significant costs. Excluding these costs from CEC reimbursement may create undue burden to project developers and is not aligned with the intent of the solicitation which is to encourage and fund the development of clean hydrogen. The installation of onsite renewable electric generation sources should be encouraged by this solicitation to maximize the benefit of the CEC's clean hydrogen program for the state of California. By including costs of onsite power acquisition among CEC reimbursement eligible costs, the CEC would incentivize and encourage the development of new renewable generation in the state instead of increasing demand for existing renewable generation. Incentivizing and encouraging the development of additional renewable generation ensures that this solicitation provides maximum community benefit by

increasing California's overall renewable generation and by not decreasing supply of renewable energy available to California Residents and businesses.

In addition to providing additional community benefit and decreasing burden on developers, permitting the costs of onsite power acquisition to be eligible for CEC reimbursement may also increase the likelihood of long-term facility operation.

If onsite renewable power generation is not incentivized by the solicitation, it is likely that several of the selected projects will rely on PPAs to satisfy the 100% renewable energy requirement. It is likely that these PPAs will create cost prohibitive hydrogen production which will cause the facilities to cease production after the conclusion of the 10-month demonstration period. The intent of this solicitation should be to fund the development of long-term renewable hydrogen production to truly meet the demand for low-carbon fuels and contribute to the overall hydrogen economy in California as stated in the draft solicitation primary objectives.

Additionally, the solicitation should clarify if CEC funds can be used to purchase green energy from the grid. This scenario would not be ideal because it would likely lead to projects not operating beyond the 10-month demonstration period but it would still be helpful in making projects financially viable during that time period.

The solicitation should also specify whether CEC funds can be put towards costs incurred by onsite off-takers in relation to necessary equipment upgrades or replacement. There are several potential industrial applications in which green hydrogen can replace traditional fuels, however, the equipment currently being used in these applications would likely need to be upgraded or replaced to be able to utilize the green hydrogen as a fuel source. It would be beneficial to potential projects if CEC funds could be used to cover these costs for the potential off-takers.

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

RIC does believe that the 1-month abstract deadline and 3-month full application deadline are realistic and feasible.

Question 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?

In addition to the performance metrics listed in the M&V plan, the CEC should consider metrics to evaluate the benefit to the onsite off-taker. If the purpose of the program is to kickstart the practice of green hydrogen production and onsite end use in California, it is important to evaluate and understand the value to the end use off-takers. Measuring things like the efficiency, output, costs, and emissions of the off-taker in their processes after introducing the green hydrogen would be valuable information which could help inform future hydrogen development in California.

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

The CEC should not target any specific end uses but should further define end use to set clear parameters for interested potential bidders. Both industrial and transportation clean hydrogen needs could potentially be

met by projects developed through this solicitation, however, it is unclear in the draft solicitation if both are eligible. Use of clean hydrogen as a transportation fuel would mean that the end use of the clean hydrogen produced would not necessarily be "onsite". If it is the intent of this solicitation that a variety of end uses including transportation be eligible, the final solicitation should clarify that onsite fueling of hydrogen vehicles be considered an eligible end use. If the intent of this solicitation is that the hydrogen produced be used as industrial feedstock, the final solicitation should clarify that onsite end use means onsite consumption in which the hydrogen produced is physically consumed onsite.

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

This solicitation should not allow the use of CCUS for a project to be considered carbon neutral. This solicitation should incentivize and encourage the production of clean hydrogen using only renewable generation resources in an effort to best contribute to achieving California's clean energy and emissions goals.

Question 8. Please provide relevant comments regarding other considerations not explicitly listed above.

Given that the stated purpose of the program is to fund the demonstration of onsite clean hydrogen production and end use, it is critical that the CEC include in the final solicitation an explicit definition of end use. If it is the intention of the commission to encourage a broad range of project types and a diverse portfolio of selected projects, the solicitation can include a vague definition which will allow for a variety of potential end uses. The definition should be written in a way as to not be restrictive but to make clear to potential bidders what types of end uses are and are not eligible for the solicitation.

RIC Energy appreciates this opportunity to offer feedback and comments on the draft solicitation and looks forward to the release of the final solicitation. Should Commission staff have any questions, comments, or concerns, regarding RIC's comments, they may contact Gerard Weir, Regulatory Affairs Analyst at gweir@ric.energy.

Sincerely,

RIC Energy