

DOCKETED

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Comment Received From: Benjamin Norris

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EPIC Request for Comments: Modeling Tools RFC

Additional submitted attachment is included below.

June 21st, 2017

Jamie Patterson
California Energy Commission
Energy Research and Development Division
Page 5 of 6
Page 6 of 6
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Subject: EPIC Request for Comments: Modeling Tools RFC

Dear Mr. Patterson:

Clean Power Research is pleased to offer the following response to the Request for Comments, attached. Our interest is primarily in the area of Group 1, and our comments are therefore limited to Group 1.

I would be happy to discuss these further if additional clarification is required.

Regards,



Benjamin L. Norris
Sr. Consultant



Response to Request for Comments

Draft Solicitation on Modeling Tools to Evaluate Distributed Energy Resources (DERs) and Microgrids located behind the meter on California's Modern Distribution Systems

Group 1

1. Are the proposed funding amounts identified in this Request for Comments (RFC) appropriate for the work requested? Please explain the rationale behind the recommendations, and if applicable, what the appropriate level of funding should be to develop the products identified in this draft solicitation?

- The funding of \$2M appears to be very high. Our estimate is more in the \$500k to \$700k range. The project is primarily broken down into algorithm development, coding, software testing, and validation, and each of these are approximately in the \$150k - \$200k Range.

2. What are specific recommendations you can provide to improve the group descriptions of the solicitation outlined in this RFC that would result in a better evaluation of the impacts of high concentrations of DER? Please explain the rationale behind the recommendations.

- The description should clarify (as we assume is the intent) that the resulting tool will not be a tool for circuit analysis. It is more of a resource planning tool. In such a tool, the loads and generation are aggregated, and power transfer between resources and load are not modeled.
- The use of StorageVet in the description should be explained more fully. StorageVet should be simply introduced for background information or to clarify the level of effort required. There should be no implication that the dispatch algorithms, interface, or other modeling aspects should match those of StorageVet, and certainly that StorageVet itself should not be used as a baseline for tool extension.
- Conventional storage dispatch algorithms should be extended under the project to be more realistic. In particular, storage dispatch when combined with renewables should be based on forecast of loads and available renewable energy, and the uncertainties of forecasts should be accounted for. For example, if the actual load for a given day were used to optimize storage dispatch, it may result in errors. If the load-- or net load after solar—were higher than expected, then the stored energy would be unavailable. Thus, dispatch based on

uncertain forecasts should be expected. Alternatively, the RFP should simply require that the project document its dispatch model.

- The project should consider seasonal variations in load and renewable resources.
- The description should reflect the notion that DERs optimized based on customer requirements (e.g., to minimize utility bills) is a different problem than optimizing for “grid requirements.” The RFP should either select one or the other, or both scenarios for the tool.
- The description should explain what is meant by validation.
- The term “optimal” can also be misconstrued. To optimize means that there is a function that is either maximized or minimized. Presumably this would revolve around an economic question, but the inclusion of externalities or social impacts may also be included.
- We suggest that the use cases should be reduced to only that of high penetration renewables. This is because, for the tool to handle many use cases, the input data requirements are varied and the technical capabilities of storage and other DERs require a more simplified treatment when many use cases are sought. Alternatively, the solicitation could allow the proposer to focus on any of several use cases, and multiple awards could be made to cover the range (Group 1A, Group 1B, etc.).
- The RFP will undoubtedly require that the benefits be quantified. The RFP should clarify what benefits are sought in the proposal: the benefit of having a public tool versus purchasing a commercial one? The benefit of having a more precise understanding statewide of the value of DERs? The value of new DERs that would be installed based on use of the tool that would not otherwise be installed? The RFP should clarify what proposers should quantify.

3. Are there existing efforts that complement the groups identified in this RFC? Are there specific changes to this proposed solicitation that you would suggest to better leverage these existing efforts? Please explain the rationale behind the recommendations and the expected value of your recommendations.

No comments.



4. (For groups 2,3 and 4) Should it be required that all source code generated as a result of this solicitation be hosted on a public open-source developers site such as GitHub? If not, describe how to ensure distributed version control and source code management functionality while making the open-source code available to the open-source developers' community.

No comments requested for Group 1.

5. Are there suggestions to better complement the needs associated with CPUC proceedings related to Modeling, distributed renewable generation, electric vehicles, the use of Smart Grid Technologies and Distribution Resource Planning? Please provide specific recommendations and rationale.

No comments.