



Stakeholder Comments Template

Variable Operations and Maintenance Cost Review

This template has been created for submission of stakeholder comments on the Variable Operations and Maintenance Cost Review straw proposal. The proposal, stakeholder meeting presentation, and other information related to this initiative may be found on the initiative webpage at: <http://www.caiso.com/StakeholderProcesses/Variable-operations-maintenance-cost-review>.

Upon completion of this template, please submit it to initiativecomments@caiso.com. Submissions are requested by close of business on **January 21, 2020**.

Submitted by	Organization	Date Submitted
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PG&E does not support moving forward with the Variable Operations and Maintenance Cost Review as currently structured by the CAISO and instead, encourages the CAISO to conduct additional data collection from its market participants in the hopes of obtaining a representative sample of CAISO-centric cost information that can inform improvements to the existing process.

Additionally, the implementation timeline set forth in this paper likely underestimates the level of effort needed to vet the data the CAISO has collected, nor does it reflect the time required for Market Participants to modify their Master File values to be consistent with the new data definitions and cost categories and complete the negotiation process..

Below are specific responses to the CAISO questions, however, PG&E feels the information provided to date prompts more questions than answers about the applicability of the data the CAISO has collected to California resources and cautions moving forward based on those inputs.

Please provide your organization's comments on the following issues and questions.

1. Proposal Component A: Establish definitions for the O&M cost components

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Please provide your organization's feedback on establishing definitions for the O&M cost components as described in section 4.1. Please explain your rationale and include examples if applicable.

PG&E agrees that the definitions helped market participants conceptually differentiate fixed and variable costs. However, it is difficult to separate the two in practice. For example, a faulty component may be replaced with a newer version of the component which is a "repair" but that new component may also enhance performance and/or extend the life of the equipment. Providing the breakdown of the corrective and preventive part of the cost may not be possible.

Please provide your specific feedback on adding the following condition to the definition of Variable Maintenance Costs (as per page 10 of the straw proposal): "*Such costs should not represent significant upgrades to the unit or significantly extend the life of the unit.*"

PG&E understands the concept of this statement, but believes that CAISO needs more industry study to verify if such costs are quantifiable. Even if the costs are quantifiable, CAISO then needs to develop evidence based guidelines for what defines significant.

Please provide your organization's position on establishing definitions for the O&M cost components as described in section 4.1. (Please indicate Support, Support with caveats, Oppose, or Oppose with caveats)

PG&E supports with caveats establishing definitions for the O&M cost components as described in section 4.1. PG&E agrees it is important to accurately define the eligible components of the VOM adder, but caveats that it is important to have a methodology that minimizes the amount of ambiguity that may surface in the negotiation process. PG&E believes the current proposal is still in its early stage of development and requires additional analysis and research to be actionable.

2. Proposal Component B: Refine Variable Operations Adders

Please provide your organization's feedback on the ISO's proposal to refine variable operations adders as described in section 4.2. Please explain your rationale and include examples if applicable.

PG&E understands the rationale behind refining the variable operations adders and moving the minor maintenance component to the new maintenance adder. However, it is not clear how the VOM adders proposed in January 2019 became the new VO adders without a change in value, even though the definition has changed.

Please provide your specific feedback on the updated technology groups proposed in section 4.1. Specifically, please provide your feedback on the relative merits of greater

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accuracy in the estimation of default VO adders versus the complexity and burden of assigning resources to the more-detailed technology groups.

PG&E supports the general direction of adding more detailed technology groups and agrees that the greater accuracy in the estimation of default VO adders justifies the work in obtaining the information. However, the drastic reduction in the \$/MWh adders from the existing values and trusting that the difference in cost will be in the new default MA adders is difficult to verify without additional data supporting its applicability to generators in the CAISO marketplace.

Please provide your organization's position on the ISO's proposal to refine variable operations adders as described in section 4.2. (Please indicate Support, Support with caveats, Oppose, or Oppose with caveats)

PG&E opposes with caveats the proposal to refine variable operations adders. Redefinition of the VOM adder to VO alone cannot justify the drastically reduced values. Further, it is impossible to verify the costs given the information provided to date.

3. Proposal Component C: Calculate Default Maintenance Adders

Please provide your organization's feedback on calculating default maintenance adders as described in section 4.3. Please explain your rationale and include examples if applicable.

PG&E would like more details on the data used for deriving the variable maintenance costs (Figure 3 in the draft proposal) It would be helpful to know the breakdown by region, vintage, and engine type, for market participants to assess where their resources are on the curve. Secondly, PG&E is concerned that market participants cannot estimate the minor variable maintenance cost taken out of the existing VOM adders since the default maintenance adders are independently derived. Thirdly, the use of 50-50 breakdown for the increment type (\$/start vs \$/hour) in the default seems arbitrary. Absent these additional details, the CAISO should abandon this dataset in favor of collecting information from market participants.

Please provide any additional sources of O&M cost information (cost estimates, OEM recommendations, etc.) which you think would be appropriate for the ISO to review during this stakeholder process. If you would like to provide resource-specific data, the ISO can receive this information confidentiality.

PG&E needs to verify the availability of such information.

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Please provide your organization's position on calculating default maintenance adders as described in section 4.3. (Please indicate Support, Support with caveats, Oppose, or Oppose with caveats)

PG&E opposes the proposed methodology on calculating default maintenance adders and would like to see more details on the data used in the new methodology.

4. Implementation of Proposal

Please provide your organization's feedback on the suggested implementation details described in section 5. Please explain your rationale and include examples if applicable.

PG&E would like to know how the currently negotiated MMAs that are based on contractual terms and verified by CAISO's analysis would be updated going forward. Secondly, based on the straw proposal, there is substantial work to be performed by both the CAISO and market participants in collecting, categorizing operation data, assigning technology groups and increment type for supporting both the variable operation (VO) and maintenance adder (MA) negotiations. The one year period is not sufficient.

Please provide your organization's position on the suggested implementation details described in section 5. (Please indicate Support, Support with caveats, Oppose, or Oppose with caveats)

PG&E feels the CAISO's implementation timeline is too short. The draft proposal is still in the early stage of development given the expanded scope to overhaul both the VOM and the major maintenance adder (MMA). The time to negotiate new adders for all the resources is not sufficient.

Additional comments

Please offer any other feedback your organization would like to provide on the Variable Operations and Maintenance Cost Review straw proposal.

PG&E suggests a longer implementation timeline to update both the VOM and MMA. This should include conducting more thorough industry studies. PG&E believes that VOM and MMA are much more important than DEB in that they are larger values and are used in daily bidding. A default value based on an approximation of industry data is not useful in practice since any discrepancy to true costs would result in unrecovered costs (i.e. losses). It is possible that using default values that are

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excessively low could results in more frequent use of negotiated options, counter to the stated goal of this initiative.