



## Stakeholder Comments Template

### Variable Operations and Maintenance Cost Review

Submitted by	Organization	Date Submitted
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CPUC Energy Division staff supports the CAISO's initiative to update the current cost recovery framework for variable operating and maintenance costs. Since this framework was last updated, CAISO's resource mix has undergone significant changes and the assumptions for variable operations and maintenance costs no longer accurately capture the range of costs faced by different resources. We believe adding clarity to cost definitions and revisiting the components of the Variable Operations and Maintenance (VOM) adder will improve transparency and help CAISO make future updates as the market continues to evolve.

However, CPUC staff is concerned with CAISO's proposal to implement a default maintenance cost adder. We believe that a default maintenance adder, while easing the burden on ISO staff and resources negotiating for higher costs, may unfairly impose costs on ratepayers through higher maintenance costs for resources whose marginal costs fall below the default adder. The CPUC encourages the CAISO to seek alternatives to a default maintenance adder that would more accurately reflect resource marginal costs and do not impose additional costs on ratepayers.

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

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

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.

CPUC staff support CAISO's efforts to establish definitions for operations and maintenance (O&M) cost components. The definition for maintenance costs requires greater clarity if it includes conditions related to extending the life of a plant. Since all maintenance extends a resource's lifespan to a certain extent, and lifespans can be defined in multiple ways, the proposed definitions alone will likely not provide sufficient guidance to determine eligible costs.

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.*"

CPUC staff believe CAISO should refine this language as was discussed in the stakeholder call.

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)

CPUC staff have no comment at this time.

### 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.

No comments at this time.

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

No comments at this time.

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)

No comments at this time.

### 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.

At this time, **CPUC staff do not believe a default maintenance adder (MA) is needed in the new framework to determine recovery for these costs.** CPUC staff request CAISO explore other alternatives to developing a default MA that accurately capture costs in the market and provide additional analysis to support any methods moving forward.

CAISO states that, "The default MA values are intended to provide a baseline MA value that can be used by market participants who may not want to face the administrative burden of negotiating resource-specific values with the ISO."<sup>1</sup> Aside from easing this administrative burden for resources, are there benefits to other market participants and ratepayers from the development of this default adder? What are the risks from implementing this new default adder versus keeping the current negotiating process?

We have concerns that implementing a default adder may reduce the accuracy of marginal costs represented in the market, could potentially impact resource dispatch, and may result in higher costs for ratepayers. From the CAISO's preliminary analysis in Figure 3, the default MA would overestimate variable maintenance costs for roughly a third (or more) combined cycle units in the study with the 60% scalar applied. This does not seem like a conservative approximation. While units with variable maintenance costs above the default MA have incentives to negotiate their bids to account for their marginal costs, there is no mechanism to account for units that will be overcompensated by taking the default MA.

Overestimating the default MA can have important implications. Currently, default O&M values are included in the Default energy Bids (DEBs) of many resources. DEBs are rarely used in the market and when used are not likely to directly relate to costs or cost recovery for most resources. Prices are derived from the marginal cost of energy, which can often be above their bid or DEB. In the CAISO's current proposal, many of the costs discussed will be moved into commitment costs, and other negotiated calculations currently in commitment costs will be moved to default values. Commitment costs do not directly impact prices but instead have important influence on bid cost recovery (BCR). When the default values end up in BCR calculations, this

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<sup>1</sup> CAISO. "Variable Operations and Maintenance Cost Review: Straw Proposal." December 19, 2019. P. 14

will often result in a direct, out of market payment to SCs. Default values in commitment costs that are overestimates of the real costs do not get erased by competitive pricing, but instead end up as direct overpayments to resources.

In addition, **we request that CAISO provide additional analysis and justification for proposals being considered in this initiative.** The analysis in the straw proposal provides very limited information to explain why the CAISO chose a linear model to develop the default MA calculation, and why the CAISO's maintenance cost allocation and capacity factor determinations for different technology types are reasonable. This level of information is insufficient for stakeholders to properly assess the proposal.

*Default MA calculation for unit-specific adders.* In the straw proposal, CAISO bases the default MA calculation on the assumption that variable maintenance costs are linearly correlated with unit capacity, specifically pmax values.<sup>2</sup> A visual inspection of the data, which has a notable peak around the halfway point of the MW scale on the x axis, suggests a linear model is inappropriate. At a minimum, we request that the CAISO show the statistical model and results, including all hypothesis tests, used to estimate the maintenance costs and evaluate the model.

CAISO also needs to address stakeholder questions regarding the data in their analysis. During the January 6, 2020 stakeholder call, it was unclear whether the data in the study represented whole resources or resource components, and whether the data was for resources in California or other places. These differences could be important explanatory variables that would refine the model. Other participants on the call pointed out that the graph did not seem to contain the relevant range for combined cycle plants in California. All these points suggest that CAISO can improve upon the initial model if they choose to continue to develop a default value.

*Maintenance cost allocation.* We are also requesting additional information to understand the maintenance cost allocation for baseload and peaking-type resources. In section 4.3, CAISO proposes to determine a technology-type's maintenance costs through a 100% run-hour allocation per increment for baseload resources and a 50-50 split between start-up and run-hour allocations for peaking resources.<sup>3</sup> This allocation seems arbitrary. We understand that some resources will incur costs in a blended manner, but we would like to better understand why a 50-50 split for all peaking resources is a reasonable allocation. We would also appreciate data or some other kind of justification for allotting all the maintenance costs of 'baseload' type resources to run hours. Misallocating maintenance costs can cause inefficient commitments and inaccurate cost recovery.

*Baseload versus peaking resources.* CPUC staff request the CAISO clearly define the baseload and peaking resource categories and explain how different technology types will be classified to assign relevant costs. In the straw proposal, CAISO distinguishes between baseload and peaking resources, but its definitions are unclear. In section

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<sup>2</sup> Ibid at 17-18.

<sup>3</sup> Ibid at 15-16.

8.2, the CAISO states that “For example, Combustion Turbines were considered to be peaking units and thus have a much lower CF [capacity factor] than Geothermal units, which provide baseload generation.”<sup>4</sup> However, the CAISO considers steam turbines, which have a much smaller capacity factor than combined cycle turbines, to be baseload resources. The characteristics of resources assigned to the baseload category vary greatly according to the CAISO’s classification. CPUC staff are concerned that costs may not be recovered by resources that are categorized this way, and that market signals may be distorted if costs are assigned this way.

Overall, additional data and robust analysis would help stakeholders determine the merits of future proposals.

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 confidentially.

N/A

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)

Oppose

#### 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.

No comments at this time.

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)

No comments at this time.

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<sup>4</sup> Ibid at 27.

**Additional comments**

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

**Whether storage resources should receive a VO adder and a maintenance adder, or whether battery O&M costs would be better represented through a different type of DEB (pp. 13, 19)**

CPUC staff recommends that CAISO should design the framework for operations and maintenance costs to include energy storage resources. In the straw proposal, CAISO suggests that they will consider addressing costs for energy storage resources in the future. We understand this to mean that, under this proposal, energy storage resources would have a default value of 0, unlike other resource classes.

CAISO's decision to treat energy storage resources differently than other resources, by not allowing similar default maintenance and operations costs, is not justified in the paper. We understand that CAISO has limited experience with storage resources. However, not including these costs for one class of resource is not a neutral stance. Excluding costs for one resource class assumes that the costs of running that class of resources are lower, relatively, compared to other resource classes. If the default exclusion of some costs from energy storage resources results in underestimating the costs of these resources it could mean that the resources are overused and subject to greater wear.