California ISO

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 revised straw proposal. The proposal, stakeholder call 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 **May 26, 2020**.

Submitted by	Organization	Date Submitted
Nate Moore	*Puget Sound Energy*	*May 26, 2020*

Please provide your organization's overall position on the Variable Operations and Maintenance Cost Review revised straw proposal:

☐ Support
☒ Support w/ caveats
☐ Oppose
☐ Oppose w/ caveats
☐ No position

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 (page 7). Please explain your rationale and include examples if applicable.

- CAISO has made many improvements to VO, VM, and Betterment definitions since its last straw proposal, and efforts to incorporate stakeholder feedback are welcome and appreciated. Having consistent and uniform definitions will greatly simplify implementation of the new definitions, and their associated values, into bidding and dispatch systems.

- CAISO has correctly expanded the list of items to be included in Variable Operations (VO). PSE again recommends that CAISO consider adding the labor cost of supplemental staff (straight- and over-time) to operate and/or monitor plant operations outside of normal working hours for plants with very low capacity factors. These plants may have a small baseline staff when in standby condition, and require supplemental staff to properly support runtime operation. We anticipate that this change would only apply to simple cycle CT and aeroderivative CT plants, and not to hydro, CCGT, solar, or wind production facilities.
- Landowner royalties have been included in VO costs, but it is noted that CAISO expects these costs to be explicitly stated in contracts such as a Power Purchase Agreement (PPA) or enacted in regulation. Most wind PPAs do not detail many of the underlying costs for operation of a wind farm, but landowner royalties are certainly included (passed through) in the PPA price. Royalty agreements are contracts between the landowner and facility owner that are executed prior to construction. They are not typically enacted in regulation. Thus, per the current definition a plant owner would not be able to include royalties in its VO cost. It is recommended that the language regarding PPAs and regulation be stricken from the definition, and verbiage added that royalty agreements must be codified in executed commercial contracts or in signed lease agreements. Plant owners will have these agreements on file for verification and backup purposes, if necessary.
- Companies that use FERC accounting rules, including the Uniform System of Accounts (USofA), may have different internal conventions for how certain power station equipment is divided into retirement units vs. minor items. For example, one company may consider that each combustion nozzle is a Unit (thus can be capitalized) vs. another company which only considers a full set of nozzles to be a Unit. In these cases, there can be confusion around capitalization rules, even within the USofA. Neither capitalization rules alone nor funding sources are a good indicator of Betterment vs. restoration.
- It is recommended that CAISO consider providing Betterment guidance to the definition of variable maintenance similar to the federal guidance. This broad guidance would apply irrespective of whether the activities can be capitalized under USofA rules or must be expensed.
    - The cost of equipment maintenance activities intended to <u>restore</u> operation, efficiency, capacity, durability, utility, and service life of generation equipment to its original design basis would not be considered a betterment if any associated lifecycle or performance improvement were incidental to the activity. As such, these maintenance activities would indeed be the result of accumulated operating hours or starts and could be included in the definition of Variable Maintenance.
    - The cost of equipment maintenance activities intended to <u>improve</u> operation, efficiency, capacity, durability, utility, and service life of generation equipment beyond its original design basis would be considered a betterment and would be excluded from the definition of Variable Maintenance.

- CAISO notes that workers performing Variable Maintenance (VM) activities may have their salaries included in the definition of VM. Unless supplemental personnel are added to the maintenance team performing VM activities, extra hours are worked, shift differentials are paid, or a 3rd party contractor is hired as noted, there is no additional cost burden on the plant owner. Straight time labor cost does not vary with run hours, starts, or MWh production. If labor is to be included in the definition of VM, there is also an argument to include labor in VO as well. It is recommended that straight time labor and management salaries be excluded from the definition of VO and VM.

Please provide your organization's position on establishing definitions for the O&M cost components as described in section 4 (page 7). (Please indicate Support, Support with caveats, Oppose, or Oppose with caveats)

- PSE supports with caveats noted above.

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 (page 12). Please explain your rationale and include examples if applicable.

- In its default VO adder narrative related to technology types, CAISO notes that certain technologies do not have any VO (such as hydro, pumped storage, and wind). Please note that pumped storage will have electric consumption from the pumping cycle that could be considered a VO cost insofar as it is a necessary expense to enable MWh production – more production = more pumping = more production. Further, wind and solar may have landowner royalty fees that vary with output, as noted on page 8 of the Straw Proposal and in our response in Section 1 above. Unless CAISO prefers that each wind facility negotiates a unique VO for royalties, it is recommended that a reasonable VO adder be included in the next revision of the Straw Proposal to account for royalties.
- CAISO notes that its resource reference for CCGT technology is the F-class turbine. While this is a common and reliable machine, please note that there are many EA-class (or older technology) units that are still in active service. Does the sole use of F-Class as a reference imply that other technology vintages will utilize F-Class cost defaults, or necessarily require negotiation to establish their VO and VM costs? If there is a sufficient population of EA-class CCGT, it is recommended that CAISO include default variable costs for that technology.

Please provide your organization's position on the ISO's proposal to refine variable operations adders as described in section 4 (page 12). (Please indicate Support, Support with caveats, Oppose, or Oppose with caveats)

- PSE supports with caveats noted above.

3. Proposal Component C: Calculate Default Maintenance Adders

Please provide your organization's feedback on calculating default maintenance adders as described in section 4 (page 15) as well as in the supporting calculations posted as a separate file. Please explain your rationale and include examples if applicable.

- The comparison and interpolation of negotiated MMAs vs. reference data sources puts great influence on the MMAs to establish an effective cap on the default VM adder. Negotiated MMAs seem to be an exception among market participants rather than the rule, and likely represent special cases where the current defaults do not properly apply.
    - CAISO requires a minimum of 20 such negotiated MMAs for interpolation purposes, but do the negotiated MMAs represent a fair cross-section of its market to be used for setting a cap on the entire market? It is recommended that CAISO use the Option 2 reference data sources for setting default VM. Alternatively, consider using the resource costs of CAISO's entire market footprint to perform these interpolations, blending like-kind plants using the current default and plants with negotiated MMAs together to set the cap. In this way, the cost efficiency of the entire market breadth is represented and not just special cases as with negotiated MMAs.
    - Depending on the final numeric value of the new default caps, some plants currently using a negotiated MMA for their bids may choose to instead use the new default adder. Given a sufficient shift, there is a chance the number of negotiated MMAs will be reduced to such a degree that there will not be a statistically significant population with which to perform the interpolation.
- CAISO does not include any default VM for wind technology, and this will force enrolled wind plant owner/operators to negotiate appropriate VM costs. There are numerous organizations studying the lifecycle cost of major wind turbine components (U.S. Department of Energy, European Wind Energy Association, American Wind Energy Association, DNVGL, Lawrence Berkeley Lab) that can provide detailed lifecycle and cost assumptions. In the same manner as CAISO uses reference data to establish VM for conventional generation, so too can it use reference sources for wind generation facilities. As more wind facilities enter the CAISO footprint, the more important having accurate defaults will become.
- In the discussion of inflation adjustments to default VO and VM rates, CAISO notes that it is not proposing a methodology for annual inflationary adjustments to these costs. CAISO notes that these adjustments have been previously considered in its triannual review process. All plant owners are subject to inflationary pressures based on internal and external utility, commodity, contractor, rental equipment, spare parts, etc. pricing. It is recommended that CAISO consider an annual inflation adjustment based on a standard BLS rate that would apply across the board to all stakeholders, then use the triannual review to normalize and true-up inflationary and other cost adjustments.

Please indicate your organization's preference for Option 1 versus Option 2. The ISO particularly wants to understand stakeholders' preferences regarding the balance between making assumptions about unit conversions versus the number of technology groups covered by default maintenance adders. If a different option is preferable, please indicate in detail your organization's preferred option.

- PSE supports Option 2 over Option 1 for VM costing. While Option 2 does increase the complexity of the default maintenance adder calculations, PSE believes that it provides the following advantages over Option 1:
    - It relies on multiple independent data sources from national and regional entities, reducing the chance that data outliers and/or erroneous values will have undue influence on the CAISO calculation.
    - Several of the data sources were developed by entities operating within the WECC, so costs will be more representative of expected maintenance costs within the CAISO or EIM footprint.
    - It provides for a default maintenance adder for hydro resources. There are many hydro resources in the existing CAISO and EIM footprint and there will be more as additional entities join the EIM in the future.
- As the CASIO noted, the assumption used to convert maintenance adders from units of measure in the reference sources to $/run hour and $/start values are critical assumptions. PSE believes that the risk of poor assumptions resulting in poor default maintenance adders is reduced by comparing the results of multiple cost references. We urge caution in making the interpolated curve of existing negotiated MMA values into an effective cap on VM for reasons stated in Section 3.
- While PSE generally agrees with the approach of normalizing the maintenance adders in the sources to $/run hour and $/start using existing dispatch profiles of resources within the CAISO and EIM footprint, we wonder if CAISO considered using capacity factors, starts per year, and other operating assumptions contained within the third-party references to perform the conversions.

If your organization has additional sources of maintenance cost data that it would like the ISO to consider, please provide these sources.

- CAISO has rightly noted that there are many references for power generation costs that have been published, but may not break down costs within the current CAISO definitions. Still, other cost references can play a valuable role in validating that proposed default adders are within the expected range of other power generation cost reports. Resources such as the EPA Platform 6 model, the EIA Electric Power Annual, USDOE Hydropower Market Report, or the Lawrence Berkeley Lab's Wind Power Cost Benchmarking Report may offer additional detail and perspective on generation VO and VM cost.

- It is recommended that CAISO exercise care in the use certain private cost reports (even if available in the public domain) unless the reports can be confirmed to be in final revision. Some private reports are publically available in draft status, and these should not be given official weight in establishing default adders.

Please provide your organization's position on calculating default maintenance adders as described in section 4 (page 15) as well as in the supporting calculations posted as a separate file. (Please indicate Support, Support with caveats, Oppose, or Oppose with caveats)

- PSE supports with caveats noted above.

4. Implementation of Proposal

Please provide your organization's feedback on the suggested implementation details described in section 4 (page 24). Please explain your rationale and include examples if applicable.

- The described implementation of the new defaults indicates that all plants will be assigned its new default VO or VM adder with the exception of plants with negotiated MMAs. This generally seems fair to all participants, although CAISO might consider a timeline to migrate all parties over to the new definitions. For example, new negotiated agreements or a shift to the current default could be required by the end of the first full tri-annual period following implementation. This would avoid having two systems of default definitions, and reduce the number of older negotiated MMAs still being used in interpolation to set the default caps (should CAISO adopt MMA interpolation for setting an effective cost cap).

Please provide your organization's position on the suggested implementation details described in section 4 (page 24). (Please indicate Support, Support with caveats, Oppose, or Oppose with caveats)

- PSE supports with caveats noted above.

Additional comments

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

- PSE agrees that this proposal may increase the need for resource owners and the CAISO to negotiate default VO and maintenance adders. As such, PSE is supportive of changes to the CAISO tariff modifying the negotiation response time from 15 calendar days to 15 business days.