



# 2026 Variable Operations and Maintenance Cost Review – Final Proposal

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Market Analysis

Stakeholder Meeting  
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# Engagement Best Practices



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The meeting is structured to stimulate open dialogue and engage different perspectives.



The facilitator will provide guidance for comments and questions to ensure a productive flow. Please keep remarks succinct and avoid revisiting points that have already been covered, allowing space for all voices.



Closed Captioning and the Transparency Viewer are available at the bottom of the Webex screen.

# Instructions for Raising Your Hand to Ask a Question



Please remember to state your name and affiliation before making your comment. After unmuting, please pause for about two seconds before speaking to ensure your audio connects clearly.



If you are connected to audio through your computer or used the 'call me' option, select the raise hand icon located on the bottom of your screen.



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You may send questions via chat to all panelists.



If you need technical assistance during the meeting, please send a chat to the event producer at Intellor Events.

# Agenda

| Time        | Topic                          | Presenter      |
|-------------|--------------------------------|----------------|
| 11:00-11:05 | Welcome                        | Brenda Marquez |
| 11:05-11:15 | Presentation of final proposal | Miheer Shah    |
| 11:15-11:25 | Q&A on final proposal          | Miheer Shah    |
| 11:25-11:35 | Q&A on draft tariff language   | Andrew Ulmer   |
| 11:35-11:40 | Next steps                     | Brenda Marquez |

# Summary of the final proposal

- CAISO has committed to reviewing the default Variable Operations and Maintenance (VOM) adders triennially
- The previous review occurred in 2023, making 2026 the next appropriate cycle for review
- CAISO proposes a 9.84% inflation increase to the default VOM adder values based on inflation from June 2023 to May 2026
- CAISO is proposing a new default variable operations costs for storage resources of \$14.74/MWh

# Background on VOM adders

- Scheduling coordinators (SCs) register VOM adders with CAISO to reflect their resources' cost of operations (e.g., consumables) and maintenance (e.g., wear-and-tear) in CAISO markets
- VOM adders are used in the calculation of:
  - Default energy bids (DEBs), used to replace bids if resource is mitigated in the market power mitigation process
  - Default commitment costs, used to cap the minimum load cost, startup cost, and transition cost bids submitted by SCs
- VOM adders are set at “default” values or can be negotiated if the default values are insufficient
- Default VOM adders were established based on industry-wide cost studies and various external sources; the defaults have been reviewed and updated in each triennial review cycle
- In the 2023 review cycle, CAISO increased the default VOM adders by 18.73% based on inflation from December 2019 to June 2023

# Proposed increase to default VOM adders

- Stakeholder feedback from Vistra received in support
- CAISO proposes to adjust the default VOM adders based on Consumer Price Index data from the US Bureau of Labor Statistics from June 2023 to May 2026 (9.84% increase)

Current Values

| Technology Type                           | Default VOM-EN Adder (\$/MWh) | Default VOM-ML Adder (\$/run-hour/MW) | Default VOM-SU Adder (\$/start/MW) |
|-------------------------------------------|-------------------------------|---------------------------------------|------------------------------------|
| Coal                                      | 3.19                          | -                                     | -                                  |
| Steam turbines                            | 0.39                          | -                                     | -                                  |
| Natural gas-fired combined-cycle          | 0.70                          | 2.07                                  | -                                  |
| Frame combustion turbines                 | 1.15                          | -                                     | 61.89                              |
| Aeroderivative combustion turbines        | 2.55                          | 5.20                                  | -                                  |
| Reciprocating internal combustion engines | 1.31                          | -                                     | -                                  |
| Nuclear                                   | 1.28                          | -                                     | -                                  |
| Biomass                                   | 1.96                          | -                                     | -                                  |
| Geothermal                                | 1.38                          | -                                     | -                                  |
| Landfill gas                              | 1.44                          | -                                     | -                                  |
| Hydroelectric                             | -                             | 0.77                                  | -                                  |
| Solar                                     | -                             | -                                     | -                                  |
| Wind                                      | 0.33                          | -                                     | -                                  |

Inflation Adjusted Values

| Technology Type                           | Default VOM-EN Adder (\$/MWh) | Default VOM-ML Adder (\$/run-hour/MW) | Default VOM-SU Adder (\$/start/MW) |
|-------------------------------------------|-------------------------------|---------------------------------------|------------------------------------|
| Coal                                      | 3.50                          | -                                     | -                                  |
| Steam turbines                            | 0.43                          | -                                     | -                                  |
| Natural gas-fired combined-cycle          | 0.77                          | 2.27                                  | -                                  |
| Frame combustion turbines                 | 1.26                          | -                                     | 67.98                              |
| Aeroderivative combustion turbines        | 2.80                          | 5.71                                  | -                                  |
| Reciprocating internal combustion engines | 1.44                          | -                                     | -                                  |
| Nuclear                                   | 1.41                          | -                                     | -                                  |
| Biomass                                   | 2.15                          | -                                     | -                                  |
| Geothermal                                | 1.52                          | -                                     | -                                  |
| Landfill gas                              | 1.58                          | -                                     | -                                  |
| Hydroelectric                             | -                             | 0.85                                  | -                                  |
| Solar                                     | -                             | -                                     | -                                  |
| Wind                                      | 0.36                          | -                                     | -                                  |

# Background on variable operations costs for storage resources

- The VO cost is a component of the storage DEB which is available only to EDAM storage resources; WEIM storage resources can select a negotiated DEB which may include the variable operations cost as a component\*
- The VO costs for storage resources is used to reflect costs associated with the battery operations, including cycling and cell degradation costs
- SCs may opt to negotiate a VO costs for storage resources. If the SC does not negotiate a VO cost, a value of \$0/MWh is used
- Negotiating a value can be administratively burdensome, and with over 16,000 MW of batteries in the market, a default variable operations cost is warranted

*\*A storage DEB for WEIM is being developed in the Storage Design and Modeling policy initiative*

# Overall stakeholder feedback supported CAISO's proposed value

- Clean Energy States Alliance (CESA):

Supports reviewing the recommended default value for inflation and against future negotiated values in the next triennial review cycle

- CAISO Response:

The ISO intends to consider several factors in the next triennial review cycle, including inflation and active negotiated values

# Overall stakeholder feedback supported CAISO's proposed value

- Vistra:

Requests clarity on future inflation adjustments for the default variable operations cost, and whether the inflation adjustment would be applied to the default variable operations cost year over year

- CAISO Response:

An explicit inflation adjustment is not being applied to the default variable operations cost proposed in this review cycle.

The default value is based on active negotiated values which are expected to reflect current costs including inflation.

The ISO plans to consider inflation in all future triennial review cycles applied triennially, not year over year.

# Proposed value for default variable operations cost

- CAISO proposes a default variable operations cost of \$14.74/MWh, based on the median value of active negotiated variable operations costs supported by Long-Term Service Agreements (LTSA)

# Draft Tariff language for default VOM adder updates and new default variable operations cost

- Default VOM adder updates

- Tariff sections 30.4.5.4.1 & 30.4.5.4.2

**30.4.5.4      Variable Operations and Maintenance Adders**

**30.4.5.4.1      Generally**

**30.4.5.4.2      Default Variable Operations and Maintenance Adders**

- Default variable operations cost for storage resources

- Tariff sections 39.7.1.8

**39.7.1      Calculation of Default Energy Bids**

**39.7.1.8      Storage Resource Option**

## Next Steps

- Stakeholders are encouraged to submit comments using the commenting tool no later than September 3
- [2026 Variable operations and maintenance cost review](#)
- CAISO staff expects to present to the WEM Governing Body on October 26

*Please note that the dates above are tentative until the CAISO publishes a notice formally confirming them*

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