

2024 ACC Staff Proposal: Energy Division Staff Partial Response
(questions 1, 2bv, and 3) to CUE Data Request #2

Oct 23, 2023

1. Calibrating and Benchmarking SERVM Prices

a. Page 17 of the Staff Proposal states “Staff will use these results to modify the portfolio of power generation resource in the PSP to match the corresponding mix used by CAISO in each month of the year being used for price calibration.”

i. Does an explicit methodology exist for the modifications? If so, please provide the methodology with numerical examples. If not, by when will the methodology be available?

At present, the team is in the process of finalizing the methodology for these modifications. We intend to ensure that the fleet of resources modeled in SERVM is equivalent to the fleet of resources used by CAISO in a given year. That will be done by comparing lists of resources and attributes of resources between current SERVM modeling datasets with the CAISO MasterFile and Master Capability List, as well as with those resources providing energy in CAISO settlement data.

We are going to calibrate to CAISO market outcomes for 2021 and 2022 to ensure that we are able to provide reasonable outcomes. We will match resources in MW capmax to ensure that we can generate the same market outcomes. The specific results of the calibration, including any adjustments made, will be provided upon completion. We do not anticipate much in the way of adjustments given the extensive calibration and benchmarking just completed for the IRP preferred System Plan modeling.

ii. At what point will stakeholders be given the opportunity to review and comment on the methodology?

Stakeholders will have the opportunity to review the methodology informally in January when we have completed the initial comparison of resource fleets and put out results.

iii. At what point will stakeholders be given the opportunity to review and comment on the implementation and results of the methodology?

See above answer.

iv. How will the modification work if the resources available to the CAISO are different from those in the PSP?

The existing Baseline ought not be controversial. That is mostly based on available CAISO data already. The RESOLVE or LSE plans resources under contract or development are not expected to be found in existing CAISO datasets, but we will ensure that they operate similar to existing resources in the CAISO data.

b. Page 17 of the Staff Proposal states “In addition to calibrating the portfolio of resources, staff will ensure resources operate as seen in CAISO historical

market outcomes. This may involve identifying input parameters in SERVM that may be contributing to the differences between SERVM results and the actual prices. Staff will assess whether to adjust these parameters to improve the accuracy of SERVM.”

- i. What is meant by the phrase “resources operate as seen in CAISO historical market outcomes”? For instance, does this mean that battery storage will continue to follow its historical pattern of charge and discharge through the projections of the 2024 ACC model (presumably, year 2049)?**

The behavior of batteries may or may not remain the same going into the future but we will ensure that we are able to explain and replicate the behavior seen historically as well as reasonably anticipated behavior going forward. SERVM aims to mimic the operator's behavior, in this case, CAISO, by optimizing resources considering reliability and minimizing the cost of dispatched resources.

- ii. Why is it reasonable to assume that resources operate as seen in CAISO historical market outcomes given likely changes in hourly load patterns and resource mix?**

Historical data provides a foundation. However, we recognize that patterns change. The approach is to use historical outcomes as a base and then adjust for foreseeable changes in load patterns and resource mix. The model accounts for these dynamics and optimizes the dispatch based on reliability and cost, mirroring how CAISO operates in the real world. We will do enough analysis to ensure that any changes in market behavior are reasonable by using hourly dispatch graphs and following resources across all hours of a day and year, in relation to hourly demand, weather patterns, and other variables.

- iii. Does an explicit methodology exist for the modification of parameters? If so, please provide the methodology with numerical examples. If not, by when will the methodology be available?**

The first step is evaluating available CAISO data including confidential MasterFile data and public Master Generating Capability List data. We will also conduct extensive comparison with CAISO market outcomes, including with the Department of Market Monitoring, to ensure that our modeled outcomes match their observations.

- iv. At what point will stakeholders be given the opportunity to review and comment on the methodology?**

CPUC staff will put out results of our initial analysis in January for parties to evaluate. There will be informal comments after that.

- v. At what point will stakeholders be given the opportunity to review and comment on the implementation and results of the methodology?**

See answer above, in January.

2. Allocation of Generation and Capacity Value

- a. **Page 15 of the Staff Proposal states “On days in which there is a projected shortfall of energy available to serve load, the preliminary battery commitment schedules charging and discharging to shave the net load peak such that the energy shortfall is spread equally across all battery discharge hours.”**
 - i. **Please provide evidence from SERVM runs for the days on which there is a projected shortfall of energy available to serve load. Please include the hours and days in which there is a projected shortfall and the amount (MWh) of shortfall for each hour and day.**

Questions 2a, 2bi-iv, and 2c will be responded to in a follow-up response.

- b. **Page 16 of the Staff Proposal states “Staff proposes to adopt the alternative storage dispatch logic in SERVM to more accurately capture the reliability value that resources can provide by generating energy in non-loss-of-load hours and preserving energy that can be used to reduce loss of load in later hours.”**
 - i. **Please provide evidence that using the alternative storage dispatch logic results in these “resources operat[ing] as seen in CAISO historical market outcomes.”**
 - ii. **Please provide evidence that using the alternative storage dispatch logic results in these resources better matching CAISO historical market outcomes in their operations compared with the current SERVM storage dispatch logic.**
 - iii. **Has Staff calculated the reliability value that resources can provide by generating energy in non-loss-of-load hours and preserving energy that can be used to reduce loss of load in later hours? If so, please provide the results of that calculation along with supporting workpapers? If not, please explain why Staff has not quantified this value?**
 - iv. **Why do energy market prices not provide the appropriate signal for dispatch of storage? If there is a market failure, please specify with evidence what that market failure is.**
 - v. **Does Staff’s proposal also mean a change to the spread of generation capacity value across hours in a year? If so, please provide the methodology with examples.**

Yes, the updated Expected Unserved Energy (EUE) values will be used for hourly allocation of generation capacity value. The methodology will remain the same as the 2022 ACC which is explained in Section 8.2 “Hourly Allocation of Generation Capacity Value” of the 2022 ACC Documentation (available here: <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/demand-side-management/acc-models-latest-version/2022->

[acc-documentation-v1b-updated.pdf](#)). Temperature data and calculations of hourly generation capacity allocators from the 2022 ACC were provided in response to SEIA's data request, question 8. Please see file "2022 ACC v1b Temperature Adjusted Capacity Allocators.xlsx", available here: <https://willdan.box.com/s/xnggo8n6455mtnf87aphp6eq54gw6wem>

- c. **For Figures 6 and 7 in the Staff Proposal please provide the underlying data and calculations in Excel format, the expected EUE for each cell.**

3. Application of the ACC

- a. **Is it correct to understand that the application of the values from the ACC should be the same no matter the number of units? For instance, whether there is one MW of rooftop solar or 100,000 MW, each MW of rooftop solar has the same value (assuming away differences in location, etc.)?**

The ACC is designed to calculate the value of marginal changes to a planned resource portfolio. The ACC does not calculate different values for different quantities of resources that are added or removed from the planned portfolio.

- b. **If the answer to sub-part a. is yes, please explain why this is a reasonable way to apply the ACC? In other words, why is a linear marginal utility of a DER resource a reasonable assumption as opposed to a decreasing marginal utility of a DER resource?**

The ACC is developed as a simplified representation of the planned resource portfolio developed in the IRP. Decreasing marginal utility of supply and demand side resources are modeled in the IRP, but not in the ACC.

- c. **If the answer to sub-part b. is no, please explain how the ACC should be applied.**

N/A