WEIM Resource Sufficiency Evaluation Enhancements, Phase 2

Opinion on Revised Final Proposal (November 7, 2022)

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Purpose

Present opinions regarding priority issues identified by WEIM Governing Body.

- Proposed treatment of HASP LPT Exports in WEIM RSE

- Assistance Energy Transfers proposal

This assessment does not repeat observations and opinions previously stated in the written comments of the CAISO Market Surveillance Committee and/or Department of Market Monitoring, except to note some major points of agreement or disagreement

HASP LPT Exports in WEIM RSE   Opinion

- Excluding certain* CAISO HASP-scheduled exports from the CAISO RSE while including them as supply in the RSE of importing BAAs is a reasonable compromise to facilitate an RSE to be implemented for the summer of 2023.
    - Prevents the CAISO from failing the RSE due to HASP advisory WEIM imports to the CAISO supporting LPT block hourly transfers (exports) from the CAISO to WEIM BAAs
    - Preserves WEIM benefits because LPT export transfers, which are likely to occur except under shortage conditions, are included in importing BAAs' RSEs
    - CAISO reliability maintained by curtailing LPT exports when necessary
- Qualitatively, the cost-benefit of this compromise appears to exceed that of the alternatives considered.

> *High priority block hourly export transfers and day-ahead cleared lower priority exports will be included in the CAISO RSE. Herein, as shorthand, all HASP exports excluded from the CAISO RSE are called "LPT exports."*

HASP LPT Exports in WEIM RSE   Reliability

- The CAISO should implement certain software fixes and improvements to reduce the possible reliability impacts of this compromise. In particular:
  - Remove LPT export bids that have not cleared HASP from BAA base schedules to ensure BAAs do not erroneously pass the RSE (See MSC RSE Opinion, December 4, 2022, p. 16)
  - Implement improvements to the flexiramp test essential to ensuring intended quantities of flexiramp remain deliverable in combination with HASP-scheduled transfers into the CAISO
- The possible reliability consequences of the compromise RSE treatment of CAISO HASP LPT exports elevate the importance of fixing all other market design or software issues potentially reducing the reliability of HASP schedules.
- With the compromise, WEIM BAAs relying on HASP LPT exports should remain consistently attentive to the possibility of curtailment.
- The CAISO should explore modification of the RSE treatment of HASP LPT exports under tight system conditions, as suggested by the MSC and DMM.

Assistance Energy Transfers   Opinion

- The WEIM market design should support the provision of assistance energy to a BAA as an alternative to limiting the BAA's imports in the event it fails to pass the RSE.

- There are substantial issues with the Revised Final Proposal for assistance energy transfers, as described on the following pages, but I support it as an interim approach for the following reasons:

  - It would make assistance energy available at a reasonably-principled price for BAAs that might be short of capacity next summer

  - For the (probably few) BAAs opting in, the financial consequences of small failures of the RSE or of mistaken failures are substantially lower than under the prior proposal (October 6, 2022)

  - The probable lack of a material penalty for some BAAs that may opt out is no worse than under the status quo and would be difficult to speedily rectify

> *I agree with the MSC: "It would be inappropriate for a balancing area to shed load because it cannot schedule emergency transfers fast enough at a time when plenty of supply was available and could have been dispatched in the EIM-wide RTD." (MSC RSE Opinion, February 2, 2022, p. 28)*

Assistance Energy Transfers   Proposal Summary

- Under the CAISO Revised Final Proposal (November 7, 2022), BAAs could choose to either opt in or opt out of receiving assistance energy transfers.
  - If a BAA opts out and fails the RSE, its RTD imports would be limited to the level set in its most recently passed RSE test, as occurs today
  - If a BAA opts in and fails the RSE, the CAISO proposes to collect an *ex post* charge from the BAA, calculated as follows:
    - Cost per MWh would be either $1,000 or $2,000, depending on whether the soft or hard bid cap is applicable
    - MW billing units for the charge would be equal to the:

(1) Maximum of: (a) the BAA's tagged dynamic WEIM imports <u>or</u>
(b) the quantity of upward WEIM RSE failure of the capacity or flexible ramping sufficiency test

<u>minus*</u>

(2) the BAA's available balancing capacity
(*BAA may choose not to subtract ABC)

Assistance Energy Transfers   Revision Motivation

- The Revised Final Proposal is intended to address concern about the possibly large magnitude of the previously proposed opt-in penalty, especially in comparison with the opt-out penalty.

    - Concern that the possibly large magnitude of the opt-in penalty, in comparison with the expected low cost of opting out for most BAAs, would discourage BAAs from electing to receive energy assistance even when it could be inexpensively provided by the WEIM

    - Concern that the difference in the expected cost of the alternative penalties could lead to "toggling" between opting in and opting out, which could have inefficient and unintended results

- The revision substantially reduces the expected financial impact of opting in by charging the penalty for no more than the megawatt quantity of the BAA's net WEIM-scheduled LPT imports.

Assistance Energy Transfers — Opt-out Issues

- The opt-out penalty is likely to have different impacts on BAAs based on the procedures they use to determine the bids, offers and schedules for load and supply submitted to the HASP. For example:
  - Analyses by the CAISO and DMM of the September heat wave event show that the CAISO imports scheduled in the HASP consistently exceeded those flowing into the CAISO in RTD, including during intervals when the CAISO failed the RSE
  - This was explained by the CAISO as relating to load biasing used to ensure sufficient rampable capacity in the right locations, in the absence of this function being fulfilled by the flexiramp market rules
  - The September heat event results would appear to generalize to other shortage situations under the current market rules, i.e., the import limit set under the opt-out alternative is unlikely to be binding even if the CAISO fails the RSE
  - The same opt-out result could occur for other BAAs employing load biasing to increase their FMM imports above their expected RTD imports, or choosing to offer their supply into HASP to increase RTD imports and unload internal generation when a shortage is expected in future intervals

Assistance Energy Transfers

- Because of the impact of the CAISO load biasing currently necessary to schedule sufficient flexible ramping capability, it does not appear to be timely for the CAISO to devote effort to improving the stringency of the opt-out penalty.
  - The first priority should be to implement the flexible ramping product so as to ensure the deliverability of required quantities of ramping capability
  - As a second step, the CAISO could determine new rules and procedures for load biasing
  - After these steps have been completed, the stringency of the current opt-out penalty could be re-evaluated and modified as needed (but this would only be necessary if the opt-out alternative were retained)

Assistance Energy Transfers

- There appear to be advantages to the *ex post* opt-in penalty revision: it is easy to calculate and, specifically for the CAISO, the *ex post* penalty increases the cost of only EIM transfer imports, rather than all CAISO imports per the prior proposal.
- The weakness is that it is applied *ex post*, rather than including the financial consequence of the penalty in determining the dispatch of a BAA that has failed the RSE.
  - The penalty price is not included in RTD, so RTD does not see the high price of scheduling additional imports into the BAA that has failed the RSE
  - Additional imports can displace existing BAA supply, and the BAA will lose money because the charge for the imports (including the penalty price) will exceed the cost of the displaced supply
- To offset the exposure of the *ex post* approach, a BAA opting in will have an incentive to offer its supply inefficiently into the WEIM dispatch. It will self-schedule its supply and/or offer it below cost so it will not be displaced in the dispatch during intervals when the BAA might fail the RSE.

Assistance Energy Transfers

- While the Revised Final Proposal reduces the cost of opting in and failing the RSE, BAAs will remain wary of opting in to emergency assistance under the *ex post* approach.
    - They will seek to offer supply inflexibly to avoid displacement when the BAA fails the RSE…
    - But this will be difficult to put into practice because of the possibility of unexpectedly failing the RSE by a small amount, or of failing the RSE due to a design or software flaw (although the latter might be corrected prior to the ex post charge)
- When BAAs bid inflexibly to avoid the possibility of paying penalty prices exceeding the cost of their own displaced supply, they give up the possibility of WEIM cost savings.
- The revision does not appear to eliminate the incentive for some BAAs to opt in and out of the emergency assistance program, or the reliability and efficiency consequences of BAAs' electing the wrong option at times.

Assistance Energy Transfers Suggestions

- In the near term, I suggest the CAISO explore the feasibility of decreasing the proposed penalty price during non-shortage conditions, as suggested by the MSC.
  - The penalty price should be high enough to penalize BAAs when they are materially short of capacity during shortage conditions
  - A lower price during non-shortage conditions could reduce the reliability and efficiency impacts of BAAs incorrectly choosing to opt out of emergency assistance
- During Phase 3 of the RSE, additional effort could be directed to exploring the development of a tiered penalty to be included in the dispatch, as opposed to being applied *ex post*.
  - Lower penalty during non-shortage conditions
  - Stronger incentive for all BAAs to opt in
  - Objective would be a single penalty design, without the opt-in / opt-out choice