

Stakeholder Comments Template

Subject: Regional Resource Adequacy Initiative

Submitted by	Company	Date Submitted
<i>Matt Barmack</i> <i>925-557-2267</i>	<i>Calpine Corp.</i>	<i>May 4, 2016</i>

This template has been created for submission of stakeholder comments on the Revised Straw Proposal for the Regional Resource Adequacy initiative that was posted on April 13, 2016. Upon completion of this template please submit it to initiativecomments@caiso.com. Submissions are requested by close of business on May 4, 2016.

Please provide feedback on the Regional RA Revised Straw Proposal topics:

Calpine welcomes the opportunity to comment on the Regional Resource Adequacy Revised Straw Proposal (“the revised straw proposal”). Calpine generally supports regional integration to the extent that it facilitates the transition to a cleaner resource mix, including gas and renewables, and supports uniform and appropriate reliability standards across the West. Calpine’s comments on the revised straw proposal pertain primarily to the reliability assessment portion of the proposal.

1. Load Forecasting

Calpine has no comments on this portion of the revised straw proposal.

2. Maximum Import Capability

Calpine requests further clarification of the CAISO’s MIC proposal. As Calpine understands the proposal, the CAISO would allow MIC to be determined based on historical imports during different sets of hours for different parts of an expanded CAISO BAA. It is unclear how this approach is consistent with a system level requirement for all LSEs to procure sufficient capacity to meet the system-wide peak. For example, it is unclear how the ability to import power into Wyoming in the winter would help the CAISO meet system level requirements in the summer. (Calpine recognizes that MIC reflects only the potential to import into the CAISO and cannot be

used directly for RA compliance without an associated resource or non-resource-specific offer to satisfy the RA must-offer obligation.)

3. Internal RA Transfer Capability Constraints

The CAISO's proposal to implement zonal RA procurement requirements seems generally reasonable. Important aspects of the proposal require clarification. In particular, Calpine requests additional detail on how the internal transfer limit components of zonal import limits would be determined. For example, MISO uses power flow modeling to determine capacity import and export limits (CILs and CELs) between zones with separate resource adequacy requirements.¹ Does the CAISO envision a similar approach for California?

In addition, while Calpine is not necessarily opposed to netting, Calpine does not understand the need for CAISO administered netting. To the extent that individual LSEs' RA procurement does not match their zonal RA obligations, they can trade bilaterally to meet their zonal RA obligations.

4. Allocating RA Requirements to LRAs/LSEs

Calpine has no comments on this portion of the revised straw proposal.

5. Updating ISO Tariff Language to be More Generic

Calpine has no comments on this portion of the revised straw proposal.

6. Reliability Assessment

Calpine generally supports the CAISO's proposal to perform a reliability assessment in order to prevent undue leaning of an LSE or LRA on other LSEs or LRAs to assure reliability.

a. Planning Reserve Margin

The revised straw proposal includes two different approaches to establishing PRMs for the reliability assessment, a "probabilistic" approach based on an LOLE analysis and a "deterministic" approach based on traditional rules of thumb. Based on recent analysis in other markets, the two approaches seem to yield roughly similar results. LOLE studies for MISO and ERCOT suggest that PRMs slightly below the PRMs based on traditional rules of thumb are sufficient to meet a typical reliability standard, such as 1-in-10.² In addition, the ERCOT analysis demonstrates that the reliability and other benefits of a PRM relative to the cost of

¹ For example, see <https://www.misoenergy.org/Library/Repository/Study/LOLE/2015%20LOLE%20Study%20Report.pdf>.

² For example, see <https://www.misoenergy.org/Library/Repository/Study/LOLE/2015%20LOLE%20Study%20Report.pdf> http://www.brattle.com/system/publications/pdfs/000/004/978/original/Estimating_the_Economically_Optimal_Reserve_Margin_in_ERCOT_Revised.pdf?1395159117

procuring capacity to meet the PRM is relatively flat over a range of PRMs, i.e., the specific choice of PRM may not matter much as long as it is in an acceptable range.³

b. Uniform Counting Methodologies

Calpine strongly supports the use of ELCC to determine the capacity counting of renewables in the reliability assessment. The exceedance methodology fails to capture saturation effects associated with increasing penetrations of a specific renewable generating technology, e.g., it does not capture the fact that for a system with a modest amount of solar generation, solar output may occur in peak loads hours which are also the hours of highest system stress, but as solar generation fills early afternoon hours, the hours of highest system stress shift to the late afternoon and early evening hours, when solar generation is lower and contributes less to reliability.⁴

Further, given that the CPUC is transitioning to the use of ELCC to determine the capacity value of wind and solar, as required by California law, for its RA program, it would make little sense for the CAISO to continue to rely on the outdated and inaccurate exceedance methodology in its reliability assessment.

In addition to undermining reliability directly by failing to account for wind and solar correctly in its reliability assessment, CAISO reliance on exceedance might lead to RA resource shuffling, i.e., it could encourage LRAs other than the CPUC to adopt the more generous solar and wind counting of the exceedance approach. CPUC jurisdictional LSEs could then sell the RA associated with their wind and solar resources to LSEs subject to the regulation of other LRAs in return for resources that are more favored by CPUC counting rules, further undermining reliability across an expanded CAISO BAA.

c. Backstop Procurement Authority

Calpine supports the CAISO proposal to explicitly link backstop procurement related to deficiencies of system, local, and flexible capacity to the CAISO's proposed reliability assessment. Calpine requests clarification of how deficiencies of capacity in a particular zone would be treated for the purposes of backstop procurement? Would backstop procurement to meet a zonal deficiency require a new type of designation?

³ For example see Figure ES-1 of http://www.brattle.com/system/publications/pdfs/000/004/978/original/Estimating_the_Economically_Optimal_Reserve_Margin_in_ERCOT_Revised.pdf?139515911. The surrounding text notes:

...we also find that the total system cost curve is relatively flat near the minimum, with only modest average annual cost variation between reserve margins of 8% and 14%. For example, increasing the reserve margin from the 10.2% optimum to the 14.1% needed to meet the 1-in-10 standard, would increase total system costs by approximately \$100 million per year on a long-term average basis. This compares to total ERCOT system-wide costs of more than \$35 billion per year including all reliability-related costs, production costs, fleet-wide fixed costs, and transmission and distribution (T&D) costs.

⁴ For example, see slides 26-27 of https://www.wecc.biz/Administrative/E3_WECC_WIEB_FlexAssessment_2016-01-27.pdf

7. Other

Calpine offers no further comments.