

LCR Reduction Studies

Economic Study Outline

Dated: 4/18/18

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Summary:

Calpine supports the review of possible reductions to the LCR requirements in Local Areas. Calpine understands that to perform the alternatives review, the ISO will use the most recent 10-year TPP scope document including its assumptions for generation, load and transmission. Calpine suggests that the depth or “layers” of analysis be clarified and that prior to initiating any comparison of alternatives to transmission that the CAISO begin a stakeholder review of the economic assumptions it intends to use in the cost/benefit calculations.

Discussion:

The CAISO generally described the analysis that it intends to complete while on the recent conference call. Calpine suggests clarifications of the different “layers” of analysis:

- The first layer would be a scrubbing of all transmission register data, including ratings and the identification of any low-cost limiting devices (e.g., wave traps, disconnects, CT/PT).
- A second layer of possible investment would be more significant, but less complicated upgrades such as line reconductoring and installation of flow control devices.
- A last layer could be new conceptual transmission line corridors and substations.

At each layer, Calpine suggests that the CAISO identify the “next” binding constraint for the LCR area, establish the LCR MW reduction and then report out to Market Participants both the benefit (in terms of LCR MW reductions) and the cost (of implementation in Net Present Value.) We also suggest that the CAISO qualitatively describe any known or knowable constraints to the proposed modifications such as but not limited to, permitting, construction outages, and COD risk.

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The ISO has also indicated that it will look at load shapes and identify the duration of the remaining LCR capacity need – similar to the duration estimates created for Moorpark. Calpine believes that this is a valuable screening tool that would allow market participants to evaluate alternatives beyond transmission.

Calpine would prefer that the ISO's analysis be limited to the elements above so that market participants or market processes can evaluate to the efficiency of transmission investment versus alternatives. In part, the ISO agrees and states that it is not interested in providing "resource substitution" analysis. Nonetheless, the CAISO intends to quantify the "benefits" side of the cost/benefit equation by estimating the avoided cost of gas-fired generation.

Perhaps the quantification of the benefits (avoided cost) is the most difficult and potentially most controversial aspect of the CAISO work plan.

To highlight the difficulty in estimating the benefits of a lower LCR, Calpine references the Supplemental Sensitivity Analysis performed as part of the 2016-2017 TPP where it was found that after OTC retirements, virtually all of the existing gas fleet is needed. Specifically, when reviewing System Resources the CAISO concluded¹:

"Capacity sufficiency issues start to emerge between 1,000 to 2,800 MW of retirement, considering some uncertainties in forecasts."

Therefore since all resources remain, at most, the "benefits" of LCR reduction would be the differential between Local and System RA values. However, one might anticipate little or no spread between Local and System RA prices if all resources are needed in the relatively near future (that is after OTC retirements).

Given the importance of the benefits calculation, the ISO should immediately seek stakeholder views on the assumptions used in quantifying LCR reduction benefits.

Thanks

¹ <http://www.caiso.com/Documents/SupplementalSensitivityAnalysis-Riskssofarlyeconomicretirementofgasfleet.pdf>