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Submitted to the CAISO at regionaltransmission@caiso.com by Tim Mason, Policy Director

RE: Comments of the Large-scale Solar Association on Proposed New Generation Deliverability Assessment Methodology.

LSA appreciates this opportunity to comment on the CAISO Proposed New Generation Deliverability Assessment Methodology of December 12, 2018. LSA offers comments on two components of the proposal, including the modeled resources and the impact of the proposal on system curtailments. We are extremely concerned that this proposal, while optimizing generation for reliability purposes, does not properly consider energy delivery from generation in the CAISO Transmission Planning Process (TPP).

The CAISO Methodology Must Consider Solar-Storage Facilities

The methodology only considers the deliverability of stand-alone solar facilities, which is not representative of future solar projects. With the cost declines in storage technologies, and the ability to pair storage with solar facilities to increase deliverability and better shape energy deliveries, most new facilities are being developed as integrated solar-storage projects. For example, of the 60 solar projects in Cluster 11 located in the PG&E system, 52 include storage. Projects proposed for the SCE system similarly have a high proportion of solar-storage.

The integrated facilities will have substantial impacts on the deliverability assessments for both the highest system need scenario and the secondary system need scenario. During the highest system need (evening peak) the stored energy may be used to meet peak demand, substantially increasing the deliverability from solar facilities. Since most solar-storage plants would be charging the battery systems during excess generation periods (secondary system need scenario), the deliverability constraints due to excess installed generation can be mitigated.

The CAISO Methodology Must Consider Stand-alone Storage Facilities

The CAISO should address how the deliverability of stand-alone storage will be established. The solar generation and UCM chart on page 13 of the December 18 presentation is fine when using Summer 2018 data but will change in future years, especially during hours 18:00 to 22:00, when batteries kick in and maintain full output from the Solar PV plant during these hours. This may change LOLE, 20% exceedance values and UCM margins. Batteries associated with a PV plant will also lessen the burden on non-solar resources to deliver their energy to the aggregated load during these high demand hours. Batteries could also reduce or eliminate the risk of capacity shortage.

The CAISO Should Assess Impact on Congestion Resulting from the Proposed Delivery Assessment Methodology

The proposal addresses the need for updating the deliverability assessment but is silent on the impacts this change will have on generation additions and congestion in the system. The December 18, 2018 CAISO presentation acknowledges "Deliverability is not tied to market operation - a generator that meets this deliverability test may still experience congestion – even substantial congestion" but the proposal only discusses potential congestion faced by individual generators, but does not address the potential impact of the proposed methodology on system-wide curtailments. Congestion and curtailments are already a critical factor in California, with over 461 GWH of curtailments in 2018, and this is likely to increase as planned and expected renewables are added to the system.

CAISO Needs to Develop New Criteria for Transmission Development

Historically, most network upgrades were identified and drive through the generation interconnection process. The proposed methodology fundamentally changes this, which the proposal does not adequately address. The proposed methodology will likely expand the ability to add additional FCDS resources to the system without any additional transmission. Further, the CAISO TPP anticipates there will be substantial several thousand MW of Energy Only (EODS) solar generation, which are ignored in the Deliverability Assessment.

The addition of these resource will likely result in substantial congestion, which is presumably dealt with in the TPP economic assessment of transmission upgrades. As noted in the December 18, 2018 CAISO presentation "The CAISO Transmission Planning Process annually assesses the need for policy-driven and economic-driven transmission projects to ensure sufficient energy from renewable resources needed to meet the state's resource policies can be delivered to load" We are concerned however, that the TPP does not adequately value curtailments from generation, which have a substantial impact on a unit off-taker and the system's ability to meet renewable and emission requirements. The TPP needs to be updated to take this additional energy into account.

CAISO Must Clarify Power Flow Modeling Assumptions

CAISO needs to clarify the Pmax of a solar or wind project that will be modeled and applied in Power flow study. If a 100 MW solar plant (nameplate data) is added to PG&E system, for example, what size will be modeled in the power flow case for Primary as well as Secondary scenarios? If this size is less than 100 MW, will it be increased during the study to full 100 MW?

Recommendations

LSA appreciates the need to update the Deliverability methodology, but believes this proposal has not been fully considered regarding its potential implications on generation interconnection and the TPP. Prior to adoption of this methodology, the CAISO should:

- Review the resource types modeled and include an integrated solar-storage resource,
- clarify its power flow modeling,
- conduct a public process to evaluate the potential energy curtailments under this proposal, and
- address how this proposal will impact CAISO new transmission additions methodology.