Sempra Renewables

April 16, 2018

Re: Sempra Renewables' Comments on the CAISO's 2019 and 2023 Draft LCR Study Results

Sempra Renewables appreciates the opportunity to comment on the CAISO's 2019 and 2023 Draft LCR Study Results. Our comments are focused primarily on the LA Basin and San Diego-Imperial Valley areas, as summarized below.

- **Load Forecast** – At the stakeholder meeting on April 6th, the CAISO explained that due to time constraints associated with the issuance of the CEC's load forecast, the CAISO did not have a projected 1-in-10 year peak day load forecast for 2019 and 2023. Instead, the CAISO relied on the CEC's 1-in-2 year load forecast profile, and then applied a multiplier to derive a projected 1-in-10 peak day load forecast. Using this methodology, the 2023 adjusted managed peak demand, with peak shift, for the San Diego area decreased by 565 MW compared to the previous year's demand forecast for the 2022 LCR study. This represents a reduction in peak demand of more than 10% from one study year to the next. Given this significant change in the peak demand forecast, and the resulting impact on the LCR, the CAISO should provide additional details and a fuller explanation in its final report as to how the peak demand forecast for the San Diego area was derived.

- **Solar Sensitivity** – In the Final Report for the 2018 LCR Study (May 1, 2017), the CAISO included a sensitivity analysis relating to the unavailability of Imperial Valley solar generation at 7 p.m. for a peak day load. The 2018 Final Report identified the following key observations when comparing the LCR needs of the sensitivity case to the LCR needs based on the then currently established NQC values:

  - *"With less solar generating resources being available in the Imperial Valley at 7 p.m., the next effective generating resources are located in the San Diego sub-area. This increases the San Diego sub-area LCR needs to 3,145 MW (an increase of about 750 MW as there are no further resources in the Imperial Valley area that can be dispatched, and the next available resources are located in the San Diego sub-area)."*
  - *"The total LCR needs for the overall San Diego – Imperial Valley area increase to 4,142 MW, representing an increase of 101 MW as less effective generating resources in the San Diego sub-area are dispatched due to unavailability of more effective solar generation at 7 p.m. timeframe."*
  - *"The LA Basin LCR needs were increased slightly by about 79 MW, with the same reason for the increase as in the second bullet discussion above."*

  Similarly, the Final Report for the 2022 LCR Study (May 3, 2017), included a sensitivity analysis relating to the unavailability of Imperial Valley solar generation at 7 p.m. for a peak day load. With regard to the issue of available Net Qualifying Capacity at the time of net peak demand, the 2022 Final Report noted as follows:

> *"The current Qualifying Capacity (QC) rules of Local Regulatory Agencies (LRAs) – and correspondingly Net Qualifying Capacity rules of the ISO - have not adjusted to changes in real time conditions and more specifically the shift of load to later hours of the day (6 or 7 p.m.). This misalignment between capacity determinations and peak demands on the transmission system may result in critical local resources not being available during the most stressed demand conditions (net peak)."*

On July 10, 2017, the CPUC issued Decision No. 17-06-027, which adopted an Effective Load Carrying Capacity approach to determining the capacity value of wind and solar resources, and made other changes to the Resource Adequacy program. The CAISO's 2019 and 2023 Draft LCR Study Results reflect the use of NQCs for solar and wind based on the ELCC methodology.

In December 2017, the CAISO issued the Final Manual for the 2019 Local Capacity Area Technical Study.

> *"The ISO will use the CEC energy and demand forecast for the base scenario analysis. If not directly included in the CEC forecast, the ISO will conduct additional scenarios on a case by case basis regarding the peak shift issue discussed above consistent with the ISO transmission planning process and compliance comply with the NERC TPL-001-4 mandatory reliability standard."* (p. 7)

The above statements make clear the interdependence between the CPUC's NQC methodology and the CEC's peak shift demand forecast, and that these factors in turn, directly and materially impact the LCR study process and results. Despite the interplay between the SDG&E – IV, LA Basin and SDG&E sub LCR areas, and the CAISO-identified "*misalignment between capacity determinations and peak demands on the transmission system may result in critical local resources not being available during the most stressed demand conditions (net peak)" t*he Final Manual for the 2019 LCR Study states that:

> *<u>At this time, only southern California's combined LA Basin and San Diego areas have been identified as necessitating this additional scenario analysis, based on 2018 analysis</u>. The ISO will continue to work with the CEC on the hourly load forecast issue during the development of the 2017 IEPR and the 2018 IEPR Update.* (p. 7 – emphasis added.)

Given the potential material impact on LCR requirements, Sempra Renewables questions the decision to limit solar sensitivity assessments to the combined LA Basin and SDG&E sub-LCR areas. In its Final Report on the 2019 and 2023 LCR Study Results, the CAISO should explain more fully the relationship between the NQCs for solar resources using the ELCC methodology, and the "peak shift" methodology for determining the timing of projected peak load, and address how these factors are being incorporated into the solar sensitivity analysis referenced in the Final Manual for the 2019 LCR Study.

- **Available Resources** – Etiwanda Units 3 and 4 (total of 640 MW) are included as available resources in the LA Basin area for 2019 and 2023, even though the CAISO has received correspondence from the plant's owner indicating that these units may be retired by June 1, 2018. While it may be necessary to include these units in the 2019 LCR study, the CAISO should provide an explanation in its final report addressing why these units are being assumed to be available resources in the 2023 LCR study.

- **Effectiveness Factors (EF)** – The LCR study process should evolve to not only identify LCR need, but also to identify the value of (i.e., effectiveness) resources within the LCR area so that developers and load serving entities can work together to meet such needs in the future. The retirement of SONGS, and the impending retirement of other once-through cooling generation in the LA Basin and San Diego areas, has increased the electrical interdependency between the two areas. This interdependency is highlighted when one considers the EFs of resources in the LA Basin that are being used to lower the LCR need in the San Diego-I.V. area.

  For example, under the recently adopted ELCC methodology, a 100 MW solar plant located in the San Diego-I.V. area could have an NQC of 40 MW for a given month and a 25% EF. This plant would be capable of reducing 10 MW of N-S flows on the S-Line following the Category B contingency (G-1/ N-1). By comparison, a similar solar resource located in the LA Basin may have an EF of only 10% in meeting the same contingency, and thus it would reduce only 4 MW of N-S flows on the S-Line following the contingency.

  Similarly, a 100 MW thermal resource in the LA Basin could have an NQC of 100 MW for a given month, but only a 10% EF, and thus it could reduce only 10 MW of N-S flows on the S-Line following the contingency, the same impact as a 100 MW solar resource located in the San Diego-I.V. area.

  In contrast, a 100 MW battery resource located in the San Diego-I.V. area would have an NQC of 100 MW and a 25% EF. This resource could reduce 25 MW of flow on the S-Line following the contingency.

  The above examples illustrate that for simple LCR counting purposes, resources can appear deceptively similar from an NQC perspective, while their ability to effectively manage contingency events across increasingly electrically dependent LCR areas can vary widely. To minimize RA costs, the LCR study process should begin evolving to address not only generic capacity needs, but also the effectiveness of resources across electrically dependent LCR areas and sub areas.