

November 30, 2018

Submitted to: CAISO (regionaltransmission@caiso.com)

**COMMENTS OF NEXTERA ENERGY TRANSMISSION WEST, LLC
ON THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION'S
2018-2019 TRANSMISSION PLANNING PROCESS NOVEMBER 16, 2018
STAKEHOLDER MEETING**

NextEra Energy Transmission West, LLC (NEET West) appreciates this opportunity to provide comments on the California Independent System Operator Corporation's (CAISO) 2018-19 Transmission Planning Process (TPP) November 16, 2018 stakeholder meeting where CAISO presented the preliminary Policy Assessment and Deliverability Methodology, Economic Assessment, Local Capacity Reduction Alternatives, and Review of the Reliability Projects on Hold.

In summary, we respectfully request CAISO to consider the following comments as it prepares the draft comprehensive transmission plan, expected to be released in January, 2019.

Economic Planning-Preliminary Results of Congestion and Economic Assessments

Traditionally, the CAISO's vetting of economic study requests included detailed production cost modeling studies, while reliability projects have been primarily focused on identifying the least cost solution required to meet reliability. In recent TPP cycles, the CAISO has expanded the economic study efforts to a growing number of projects that in the past would have strictly been deemed reliability driven. NEET West appreciates the CAISO's study framework particularly the economic evaluation of transmission to reduce Local Capacity Requirements (LCR), as well as the evaluation of reliability driven transmission to determine any economic justification to upscaling a reliability project. NEET West supports these efforts and believes this approach will lead to projects that maintain reliability in the most economic fashion.

The preliminary economic analysis of the key congestion found on slide 74 of the "Preliminary Results of Congestion and Economic Assessment" slide deck presented at the November 16, 2018 Stakeholder Meeting indicated three top congestion areas observed in the Default Portfolio: "SCE NOL-Kramer-Inyokern-Contol", "VEA", and "PG&E Westland-Fresno-Kern". Furthermore, the renewable curtailment analysis as discussed on slides 84-104, indicated three top curtailment areas in the Default portfolio as: "Tehachapi approximately 10%", "PG&E Westland's approximately 16%", and "SCE Eastern approximately 14%". Additionally, the 42 MMT scenarios show the following top three curtailment areas: "Tehachapi approximately 30%", "PG&E Westland's approximately 50%", and "SCE Eastern approximately 50%". The CAISO reported that transmission constraints are the

main driver of renewable curtailment and that these constraints may mask other system issues. As the CAISO does not specify nor provide information on what specific transmission elements are causing the curtailments/congestion, NEET West respectfully requests an explanation of these specific transmission elements that are expected to cause curtailments in both the default and 42 MMT scenarios and to also include this information in the 2018-19 Draft Transmission Plan.

To better study potential system constraints, NEET West is looking forward to receiving the economic planning study results for the evaluation of the Red Bluff – Mira Loma 500 kV Project. If time allows, CAISO should also look into evaluating the additional economic benefits of the Red Bluff – Mira Loma 500 kV Project and its impacts to the Eastern LA Basin Local Capacity Requirement (LCR) Sub-Area process. As outlined in the Local Capacity Requirements Potential Reduction Study - Greater Bay Area presentation, the recap of Eastern LA Basin Subarea 2028 LCR is driven by post-transient voltage stability resulting from the loss of Serrano-Valley 500 kV line followed by an N-2 of Red Bluff-Devers #1 and #2 500 kV lines. The LCR need to mitigate this post-transient voltage instability concern is determined to be approximately 2,678 MW. The economic evaluation of the Red Bluff – Mira Loma 500 kV Project should capture the additional economic benefits that the Project brings to the Eastern LA Basin LCR.

Deliverability Assessment Methodology Proposal

The CAISO's proposed deliverability assessment methodology includes reduced dispatch levels for intermittent resources down to 20% exceedance levels in the Highest System Need Scenario which roughly equates to a dispatch level of 10% of Pmax for Solar resources in PG&E and SCE, and 66.5% and 55.7% for wind resources in PG&E and SCE respectively. When compared to the current methodology, the CAISO estimates the proposed methodology will result in less deliverability transmission upgrades when applied to Queue Cluster 10 study results (slide 39). While NEET West is encouraged by the CAISO's commitment to making accurate decisions with regards to the state's transmission needs, NEET West recommends CAISO to explore:

1. **The financial impact that this methodology has on generation owners due to future extreme congestion.** The immediate result of this methodology will be a benefit to generation development by enabling more generation to achieve Full Capacity Deliverability Status without building additional transmission; however the CAISO should explore the long term impact that extreme curtailment will have on generation during the non-studied hours when generation exceeds the assumed 20% exceedance levels. For example, the SCE Tehachapi, SCE Eastern, and PG&E Westland's areas show curtailment values in the 42 MMT scenario of roughly 34.7%, 47.6%, and 55.5% respectively (slide 21). NEET West encourages the CAISO to explore how curtailment at this level would impact the future development and financial viability of renewable resources. In particular, NEET West is concerned about the

financial implications that curtailment has on generator owners in instances where the renewable generation is not compensated for during hours of curtailment.

2. **That the States Renewable Portfolio Standards (RPS) can be met with this new methodology given the level of curtailments.** 50% of retail electricity sales must be met with renewable energy by 2030. The proposed methodology will lead to the curtailment of renewable generation during hours where the generation exceeds the assumed 20% exceedance levels and curtailed energy does not count toward the 50% RPS. NEET West encourages the CAISO to determine if 50% of the energy sales can be met by renewable resources under the proposed methodology which includes extreme curtailment.

Local Capacity Requirements – Potential Reduction Study Results

The CAISO committed to complete the LCR analysis for the current Request Window project submittals to quantify local capacity reduction benefits. To this point, NEET West would appreciate the CAISO's analysis of all previously submitted NEET West projects into the LCR analysis. We believe several of these project proposals could provide potential LCR reduction benefits. For example, the Sycamore 230 kV Energy Storage Project and the Sycamore – Suncrest 230 kV Transmission System Project submitted by NEET West into the 2018 Request Window can help reduce the San Diego Subarea, which is limited by a thermal overload to the Sycamore – Suncrest 230 kV line. Similarly, the Red Bluff – Mira Loma 500 kV Transmission Project could help reduce LCR for Eastern LA Basin subarea which is post-transient voltage stability limited resulting from the loss of Serrano-Valley 500 kV line followed by an N-2 of Red Bluff-Devers #1 and #2 500 kV lines. Similarly, the Cayetano BESS alternatives may provide benefits for the PG&E Greater Bay Area LCR.

The CAISO will complete the LCR analyses (for “informational purposes only”) for Request Window project submittals and will include results in the draft 2018-2019 Transmission Plan. NEET West encourages CAISO to consider finalizing the assessment of less complex LCR areas/subareas and release the final project solutions into the 2018-19 TPP.

Consideration of Energy Storage as a Transmission Asset (SATA)

NEET West is encouraged to see that Energy Storage alternatives were highlighted as potential solution(s) to address local capacity resource issues in the 2018-19 assessment as discussed on November 16th. To further support this process, NEET West encourages CAISO to consider several energy storage solutions in the local capacity reduction benefit analysis: Suncrest/SDG&E area (BESS SATA 210 MW connecting to Sycamore 230 kV), Cayetano/PG&E area (4 BESS SATA connecting to 230 kV system ranging from 100-300 MW).

2018-19 TPP Reliability Projects on Hold – PG&E Area - Review of Previously Approved Transmission Projects and consideration of NEET West’s proposed Lopez – Divide 230 kV reliability solution as replacement for Midway – Andrew Project

NEET West appreciates the diligence that the CAISO has demonstrated in its review (including need and cost) of both previously approved and new projects proposed by the Participating Transmission Owners (PTO’s). In reviewing the Midway – Andrew project, the CAISO has consistently reported a reliability assessment need which consists of multiple severe thermal P2 and P6 contingent overloads in the 115 kV system from/around the Mesa Substation. The CAISO has also reported that there is no reasonable time to take outages for maintenance and that long term mitigation is still required. The CAISO is continuing further assessment of the Midway – Andrew Project and is considering conversion of one of the 500 kV lines from Midway to Diablo to 230 kV, increasing the winter ratings on the Sisquoc-Santa Ynez, installing a 20 Mvar capacitor at Cabrillo, and an SPS to shed load under P6 contingencies. While NEET West appreciates CAISO’s detailed due diligence on this project, we would like to discourage non-consequential load dropping in lieu of expanding transmission to mitigate P1-P7 contingencies on the 115 kV or higher voltage systems. This recommendation is consistent with the CAISO’s planning standards which are intended to continue avoiding the need to drop load in high density urban load areas due to, among other reasons, high impacts to the community from hospitals and elevators to traffic lights and potential crime. Santa Maria (pop. 130,447¹), Lompoc (pop 51,509), and Arroyo Grande-Grover Beach (52,000) are all identified on the 2010 Census identified Urban Areas (UA’s) of 50,000 or more. A post contingency load dropping SPS alternative project at any of these locations is undesirable and should be avoided in lieu of building transmission.

Instead, NEET West encourages CAISO to select the most viable, long term, transmission alternative that will solve comprehensive reliability needs for both South and North of Mesa areas. To address the overall need in this area, NEET West proposes a new reliability transmission solution that consists of a new Lopez – Divide 230 kV transmission line, a new Divide 230/115 kV substation, and a new 115 kV Divide – Sisquoc 115 kV line. The inclusion of the NEET West’s proposed Lopez-Divide 500/230 kV Project resolves the same potential overloads to the Central Coast Los Padres (CCLP) system identified in this year’s Preliminary Reliability Assessment that are resolved by similar transmission alternatives considered by the CAISO; however, it does it at a much lower capital cost. The NEET West Lopez-Divide Project also eliminates the significant reliance on the Mesa/Santa Maria² RAS and Divide RAS. NEET West recommends the CAISO’s 2018-19 TPP cycle include a special assessment of the Mesa/Santa Maria area and to evaluate and rank all of the considered

¹ 2010 Census Urban and Rural Classification and Urban Area Criteria, <https://www.census.gov/geo/reference/ua/urban-rural-2010.html>, List of 2010 Census Areas (.XLS)

² Note: Santa Maria (population 130,447) listed in 2010 Census list as an Urban Area with population greater than 50,000.

alternatives, including the NEET West project alternative, while focusing on recommending the most cost effective solution that will be included in the 2018-19 TPP. A table of comparisons of all alternatives along with the specific costs and benefits should be reported and included into the draft TPP.

Conclusion

NEET West commends CAISO's staff for all of the time and effort that it put into the 2018-19 TPP and appreciates the opportunity to participate in the TPP and to provide these comments.

Sincerely,

A handwritten signature in black ink that reads "Brian McDonald".

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