

COMMENTS OF THE STAFF OF THE CALIFORNIA PUBLIC UTILITIES COMMISSION REGARDING THE 2020-2021 TRANSMISSION PLANNING PROCESS UNIFIED PLANNING ASSUMPTIONS AND STUDY PLAN FOLLOWING THE FEBRUARY 28, 2020 STAKEHOLDER MEETING

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March 18, 2020

The Staff of the California Public Utilities Commission (“CPUC Staff”) appreciates this opportunity to provide comments on the 2020-2021 TPP Draft Unified Planning Assumptions and Study Plan discussed at the February 28, 2020 stakeholder meeting hosted by the California Independent System Operator (CAISO).

Overview of IRP resource portfolios to be utilized for this 2020-2021 TPP

Because of the close timing of the CAISO’s first stakeholder meeting for this TPP and the release of the CPUC’s Proposed Decision on the 2019-2020 Reference System Plan¹, the CAISO’s posted Draft TPP Study Plan includes an editorial note which explains that the CPUC will soon transmit a base portfolio of resources for the purpose of being studied as part of the reliability assessment, policy-driven and economic assessment in the 2020-2021 TPP. The CAISO’s presentation deck for this February 28, 2020 meeting briefly identifies the base portfolio. CPUC Staff welcomes this opportunity to clarify the nature of this portfolio, as well as the purpose of two other resource portfolios to be studied as information-only sensitivities.²

The CPUC Proposed Decision adopts the updated 2017-2018 Preferred System Portfolio (PSP) for analysis in this 2020-2021 TPP, which is similar to the base case portfolio used in the 2019-2020 TPP but updated appropriately. This is different from the proposed Reference System Plan recommended by CPUC staff in November 2019³ and the more recently developed Reference System Portfolio (RSP) which is proposed to inform the formation of individual LSE integrated resource plans to be filed this summer.

The Proposed Decision⁴ explains why:

The CAISO suggested not using any of the new scenarios at all for the base cases for this TPP. Instead, they suggested utilizing the 2017-2018 PSP, with some adjustments. They gave two primary reasons. First, the 2,000 MW of generic capacity would have unknown locations on the grid, because the actual type of capacity is unknown. Therefore, this assumption cannot be utilized for TPP purposes. Second, the amount of battery storage in this portfolio in all the RSP scenarios for 2019-2020 is very large compared to the 2017-2018 PSP, and a detailed methodology for mapping the battery storage to busbars has not been developed and vetted. Thus, the CAISO is very uncomfortable with the prospect of using this portfolio as a base case,

¹ <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M327/K750/327750339.PDF>

² These portfolios will be posted on the CPUC website [here](#).

³ <https://www.cpuc.ca.gov/General.aspx?id=6442463190>

⁴ <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M327/K750/327750339.PDF> at pp.56-57.

potentially leading to certain transmission investment, when the locations of such a large amount of resources would be completely uncertain.

Therefore, we will continue to utilize, as recommended by the CAISO, the 2017-2018 PSP as the reliability and policy-driven base case for this cycle of the TPP.

CPUC Staff is actively working with CAISO staff to overcome the challenges that the new RSP might present for TPP modeling, particularly the mapping of large amounts of storage to specific substations, a critical step for the CAISO to be able to comprehensively study transmission needs.

In this regard, CPUC Staff notes that a methodology for mapping storage to busbars is being developed and will be posted within the next few weeks. This will be especially useful since the Proposed Decision also adopts the 2019-2020 Reference System Portfolio (RSP) as a policy-driven sensitivity for the CAISO to analyze.

This will allow for a comprehensive transmission impact analysis of the high quantity of storage included in the 2019-2020 RSP. The storage in the portfolio was selected by RESOLVE to meet the 2030 GHG target at least cost, while ensuring reliability. Although it is impossible to predict exactly where on the transmission system this amount of storage will be built by 2030, due largely to the high mobility and flexibility of storage, analysis of the 2019-2020 RSP as a policy-driven sensitivity will help identify the potential implications of the storage for the transmission system. Commission staff will provide a full description of the methodology used to map storage to busbars in the updated version of the busbar mapping methodology to be released in March 2020.⁵

As a second policy-driven sensitivity, the Proposed Decision adopts a portfolio based on the 30 million metric ton scenario to test the impact of energy-only deliverability status for some generators on congestion.

This sensitivity should give us additional information on co-optimization of generation and transmission to support the next round of IRP analysis. This sensitivity should help test whether there are areas in which the benefits of inexpensive transmission solutions can outweigh their costs, by reducing curtailment of renewables.

Depending on the results of this sensitivity, the CAISO may test upgrade options to mitigate renewable curtailment in certain zones in order to provide the upgrade information back to the IRP process in the next cycle.⁶

CPUC Staff appreciates the CAISO's efforts throughout 2020 to share useful information from their analysis of these two scenarios, which should be highly informative for the development of future TPP base case portfolios.

⁵ <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M327/K750/327750339.PDF> at pp. 62-63.

⁶ <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M327/K750/327750339.PDF> p.63.

Detailed Comments

1. Generation Modeling

Section 2.7.3 of the Draft Study Plan notes that new thermal generation projects in construction or pre-construction phase that will be modeled in the base cases. In the 2019-2020 Final Study Plan, the CAISO identified five levels of guidelines that are used to model new generators in the base cases for each study, ranging from “under construction” to “press release only.”

It would be helpful if the 2020-2021 Final Study Plan more fully explains how these guidelines are used to determine inclusion in the TPP, and whether this criterion pertains only to thermal generation or includes other resource types.

2. Generation Retirements

Section 2.7.5 of the Draft Study Plan points to Table A3-1 of Appendix A for the list of generator retirements as applicable to TPP modeling. It would be helpful if Section 2.7.5 also specifically clarified the CAISO’s retirement assumptions for thermal generation as they compare to the retirement assumptions used by the CPUC’s IRP process which are explained in Section 7 of the “CPUC Staff Report: Modeling Assumptions for the 2020-2021 Transmission Planning Process Release 1 (Base Portfolios)”⁷.

3. Base Case Modeling Results

Looking ahead to September 2020 when the CAISO presents preliminary results of the base case assessment, the CPUC Staff suggests it would be helpful to summarize the results both before and after storage resources are considered. This information could be helpful for all participants to understand where potential constraints are on the grid, and to quantify the value of locating storage in these locations and the value of storage in mitigating any transmission issues that are identified.

4. Methodology for Potential Mitigations to Transmission Constraints

Section 2.8 of the Study Plan discusses the CAISO’s previous analysis of potential mitigations to transmission constraints using demand response, energy efficiency, renewables and storage. This section cites examples of the methodology explained in a 2013 White Paper as well as a 2017 evaluation of local capacity solutions for the Moorpark area. It would be helpful to update this section, specifically to include more details about the methodology for studying storage as a mitigation option.

CPUC Staff further suggests including within the TPP Study Plan the distinct steps to be used for this analysis of potential mitigation using storage resources, like the level of detail provided in the Moorpark evaluation. This could include where cost and other assumptions are needed, and how they are made. This kind of clarity and transparency would be greatly valued by many stakeholders, especially considering the amount of storage that could be available as possible solutions.

Also, Section 2.8.1 of the draft Study Plan suggests that “in some situations the storage could be approved as a transmission asset” though the footnote explains that the CAISO’s “SATA” stakeholder engagement remains on hold. It would be helpful to clarify with greater detail how and when the CAISO will consider storage as a transmission asset for the purposes of this TPP.

⁷ ftp://ftp.cpuc.ca.gov/energy/modeling/Modeling_Assumptions_2020_2021_TPP-Report-Release1.pdf

5. Scenario Modeling Results

CPUC Staff further suggests that CAISO consider creating a preferred format for displaying results of the base case and policy-driven scenarios later in this TPP cycle that are particularly pertinent to the integrated resource planning process. An expanded dashboard-like summary of results of the studies of the mapped storage in specific regions – including potential costs of mitigation options -- would be useful as a high-level explanation of the study scenarios and would improve the accessibility of the information for all stakeholders.