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**COMMENTS OF THE STAFF OF THE CALIFORNIA PUBLIC UTILITIES COMMISSION REGARDING THE
DRAFT 2020-2021 TRANSMISSION PLAN FOLLOWING THE STAKEHOLDER CALL HELD FEBRUARY 9, 2021**

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February 23, 2021

The Staff of the California Public Utilities Commission (CPUC Staff) appreciates this opportunity to provide comments on the draft 2020-2021 Transmission Plan. These comments follow the February 9, 2021 public meeting to develop and explain results of the analysis underpinning the CAISO’s draft plan. For this TPP cycle, the CPUC identified the base case as the updated 2018 Preferred System Portfolio, as well as two sensitivity cases (#1 – 2019 Reference System Portfolio and #2 – 2019 30 MMT Energy Only Portfolio.)

The CAISO presents a significant volume of information and findings in this draft transmission plan. CPUC Staff offers these comments and suggestions on certain chapters of the draft plan, including these specific requests:

- *By when should the battery storage resources recommended for these two projects be operational?*
- *By when would the CAISO be expected to withdraw the hold on these projects to pursue the alternative process to enable a transmission solution for these two projects, assuming storage resources would not be developed there in time to manage the identified reliability issues?*
- *CPUC Staff notes that four of the projects in Table 8.1-1 have “expected in-service dates” in 2020; it would be helpful if the Transmission Plan provided further explanation or updates for these anomalies. We also suggest the CAISO consider ways to ensure that “expected in-service dates” are realistic and reflect reasonably fresh information on the project’s development.*
- *It would be helpful for the CAISO to consider ways to present these tables on previously approved projects with more information about when projects were first approved, why projects may have been put on hold or in-service dates extended and potential implications for reliability and renewable development.*

1. Utilization of Storage Resources to Mitigate Reliability Issues

The CAISO’s presentation on February 9, 2021 included an important update to the preliminary results of the reliability assessment provided in September 2020. Specifically, the CAISO highlighted its recommendations (explained in Chapter 2 of the draft transmission report) to utilize battery storage resources at two substations to mitigate reliability needs in the Kern area and the Central Coast and Los Padres areas within PG&E’s service area.

Thus, the draft transmission plan includes a hold on the Wheeler Ridge Junction project (pending procurement of a 95 MW/168 MWh battery at the Lamont 115 kV substation) and the North of Mesa project (pending procurement of a 50 MW/200 MWh battery at the Mesa 115kV substation.)

CPUC Staff commends the CAISO for examining all alternatives for these projects and recommending an approach that would meet reliability standards and serve the best interests of ratepayers.

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CPUC Staff recognizes considerable stakeholder interest was expressed during the February 9th meeting regarding the mechanism by which these proposed storage resources could gain revenues and/or receive cost recovery for their operations. We note that Section 1.3.2.6 of the draft transmission plan provides background on the use of energy storage as a transmission asset and that related issues were discussed as part of the CAISO's "Storage as a Transmission Asset" stakeholder initiative, which was suspended in 2019 pending resolution of a separate initiative. CPUC Staff anticipates further review of these issues as well as opportunities for full understanding of stakeholder views.

CPUC Staff seeks a better understanding of the timeframe by which these storage resources would need to be "in-service" to mitigate the expected reliability need. Chapter 2.3 of the draft transmission plan notes that the CAISO conducted detailed analysis related to the reliability assessment for years 2022, 2025 and 2030. It would be helpful to convey in the Transmission Plan when the reliability issues arise for the Wheeler Ridge Junction and North of Mesa projects. More specifically, CPUC Staff seeks to understand:

- *By when should the battery storage resources recommended for these two projects be operational?*
- *By when would the CAISO be expected to withdraw the hold on these projects to pursue the alternative process to enable a transmission solution for these two projects, assuming storage resources would not be developed there in time to manage the identified reliability issues?*

CPUC Staff also notes that the CAISO's recommendation (explained during the February 9th meeting) to utilize these storage resources overlapped the Commission's approval (on February 11th) of [D. 21-02-008](#), which defines the portfolios and the methodology for locating planned resources for the CAISO to analyze in the 2021-2022 Transmission Planning Process.

To address this overlap between TPP cycles and to highlight the continued coordination between the CPUC and the CAISO, we point to Section 9.1 of the *Modeling Assumptions for the 2021-2022 Transmission Planning Process*. This provides flexibility for CAISO to assume the use of storage resources to mitigate reliability issues in certain locations through the upcoming TPP cycle:

"Additionally, to the extent that storage resources are required for mitigation of transmission issues identified in the CAISO's 2020-2021 Transmission Plan, CPUC staff would expect to coordinate with CAISO to enable small adjustments in the CPUC's mapping of storage resources to allow for the inclusion of this storage in the CAISO's analysis of these 2021-2022 TPP portfolios."

CPUC Staff expects that, based on the CAISO's 2020-2021 reliability assessment, approximately 145 MW of the 9,000+ MW of batteries mapped to specific busbars in the 2021-2022 TPP portfolios may be moved to the two areas identified.

2. Projects Approved in Previous Transmission Plans

Chapter 8 of this draft transmission plan identifies 86 previously approved projects under \$50 million and 22 previously approved projects over \$50 million, including nine projects that were completed presumably over the past year. This compares to the 2019-2020 Transmission Plan that identified 19 completed projects. CPUC Staff monitors the progress of development for these CAISO-approved transmission projects and we appreciate these updates being included in the annual Transmission Plan.

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CPUC Staff notes that four of the projects in Table 8.1-1 have “expected in-service dates” in 2020; it would be helpful if the Transmission Plan provided further explanation or updates for these anomalies. We also suggest the CAISO consider ways to ensure that “expected in-service dates” are realistic and reflect reasonably fresh information on the project’s development.

Additionally, CPUC Staff notes that the Bellota-Warnerville 230kV reinforcement project now has an estimated 2024 in-service date, which is seven years later than originally planned when CAISO approved this project in the 2012-2013 Transmission Plan. This specific project is now expected to enable several renewable energy projects that are important to the achievement of California’s clean energy policy goals although it may have originally been approved as a reliability project. Tables 1.1-1 and 8.1-1 summarize the latest in-service date but provide no mention of the multiple extensions of the in-service date for this important project.

It would be helpful for the CAISO to consider ways to present these tables on previously approved projects with more information about when projects were first approved, why projects may have been put on hold or in-service dates extended and potential implications for reliability and renewable development.

More context on these previously approved projects, especially on significant changes that have occurred since CAISO’s approval, would be valued information within Chapter 8 and perhaps other chapters of the Transmission Plan.

3. Transmission Capability Estimates

CAISO’s presentation on February 9th included an update on the methodology for determining revised transmission capability estimates in renewable zones, which is a key input for the CPUC’s development of portfolios that are analyzed within the transmission planning process.

CPUC Staff appreciates the CAISO’s innovative conceptual approach for dynamic equations to update the transmission capability estimates used in RESOLVE. We are working with CAISO staff to understand this proposed approach better and we anticipate a thorough and transparent vetting of this methodology in the coming weeks.

4. Renewable curtailment

CPUC Staff appreciates the presentation of results in Tables 3.7-1 and 3.7-2 in the draft transmission plan regarding the impacts of congestion and curtailment for each of the portfolios. These results indicate 15%, 11% and 17% total curtailment for the policy-driven base case, sensitivity #1 and sensitivity #2, respectively. The results of the battery re-mapping study conducted for sensitivity #2 (shown in section 3.8.2) indicates significant reductions in congestion and curtailment.

These results will inform future resource mapping exercises as well as the location of actual renewable projects. CPUC Staff observe that the massive scale of procurement proposed over the next five years in the February 22, 2021 ALJ Ruling ([here](#)) in R.20-05-003 may well significantly diminish current levels of curtailment observed within certain CAISO zones.

5. Interregional projects

CPUC Staff notes that none of the four proposals seeking further study as interregional transmission projects are moving forward in 2021 within the interregional planning process. This is the same outcome as the last interregional planning cycle; no proposed projects moved forward into the odd year interregional planning assessment in 2019.

CPUC Staff appreciates the CAISO's leadership within this coordination process. We encourage the CAISO to seriously consider ways to improve the process in advance of possible federal efforts to accelerate transmission development through Order 1000 modifications or other initiatives.

6. CAISO's Frequency Response Study

CPUC Staff appreciates the engineering expertise and sound judgment that went into the CAISO's assessment of the system's ability to respond to major frequency events. This analysis is critical as the system rapidly adds more inverter-based generation. This kind of technical analysis is a valuable part of the annual transmission planning process.