



Submit comment on July 27 stakeholder call discussion

2021-2022 Transmission planning process

[Note: These CalWEA Comments were imported into the CAISO's online template.]

1. Provide a summary of your organization's comments on the July 27, 2021 stakeholder call discussion:

On July 30, 2021, Governor Newsom signed an emergency proclamation that, in part, requested the state's energy agencies, including the CAISO, to accelerate the construction and deployment of diverse clean energy resources and storage projects, and to modernize the grid, in the face of California's supply shortage during the net peak period and in response to the grid challenges posed by climate change. In view of these urgent needs, CalWEA urges the CAISO to address unnecessary barriers to new resource development that are the result of its own construct for resource deliverability rather than actual physical system constraints. The CAISO must look to improve the efficient use of the grid, while it also plans boldly for holistic transmission solutions that will be needed to achieve the state's SB 100 goals.

In these comments, therefore, CalWEA highlights the need to anticipate reforms to the CAISO's deliverability assessment methodology that will be needed in conjunction with planned reforms to the CPUC's Resource Adequacy program. These reforms will open the grid to many more wind and solar resources, including 3 GW of offshore wind (OSW) at the Central Coast potentially without relying on deliverability capacity transfer from the retiring Diablo Canyon Nuclear Power Plant (DCNPP). The CAISO should separately plan for this 3 GW of OSW – the most likely near-term scenario for offshore wind development – in addition to a larger potential build-out of offshore wind resources.

Finally, CalWEA urges the CAISO to plan for lower GHG targets than are reflected in the CPUC's IRP-TPP portfolio; specifically, the CAISO should plan for transmission upgrades that are common to the two separately developed transmission plans – one developed for the Sensitivity Case 1, the 38-MMT portfolio, and the other developed for the Sensitivity Case 2, the 30-MMT portfolio with OSW.

2. Provide your organization's comments on the transmission capability information provided to the California Public Utilities Commission through its Integrated Resource Planning Process, as described in slides 4-28:

The CAISO should anticipate reforms to its deliverability assessment methodology in the updated transmission capability estimates that it supplies to the CPUC for its IRP process, and use those reforms in the sensitivity studies performed in this TPP cycle.

As the CAISO is aware, the CPUC has adopted a conceptual framework as the basis for major structural reforms to its Resource Adequacy (RA) program in 2022 , with implementation in 2024.ⁱ The reforms are in response to the changing nature of the grid and its resources, which in the future will revolve principally around non-dispatchable, carbon-free renewable and integration resources, namely, solar and wind energy generation resources and storage resources. The RA reforms recognize the need to ensure that energy needs are met in all hours, rather than just one hour in each month, which is at odds with the CAISO’s current deliverability methodology that is designed around the rarest and most constrained system operating conditions during the year. Parties in the CPUC’s RA reform proceeding have recognized that parallel reform of the CAISO’s deliverability standards are needed, particularly for non-dispatchable resources and the conditions that are expected in the hours of these resources’ production.ⁱⁱ

Under the new RA framework being contemplated, wind and solar resources are likely to act mainly as load modifiers and largely serve to charge dispatchable storage resources when these renewables are not directly serving demand. These conditions will not be nearly as constrained as the rare system operating conditions that CAISO currently uses for its deliverability test. The deliverability assessment methodology for dispatchable RA resources should therefore be modified, given greatly expanded hours of concern rather than a worst-case, peak-hour condition. Under the CPUC’s new RA framework, the annual 8760 hours will be divided into seasons and time-of-day “slices” (for example, four time-of-day blocks for four seasons, or 16 “slices” in total, although the definition of slices is yet to be determined). The CPUC requested that CAISO directly participate in its implementation workshops, particularly on issues that pertain to their direct involvement and that “CAISO identify any required tariff modifications as early as practicable to allow for implementation prior to 2024.”ⁱⁱⁱ

Deliverability reforms have important implications for the transmission capability estimates that the CAISO will be updating for the CPUC’s IRP process as well as for the sensitivity studies conducted in this TPP cycle (recognizing that the CAISO must use its current deliverability methodology as it considers approving system upgrades in the current TPP cycle). With deliverability reform, it will be much easier in well-developed areas of the grid for wind and solar resources to obtain an appropriate level of deliverability, and thus to interconnect to the grid. This has important implications for offshore wind resources at the Central Coast, and should help resources in all CREZs, particularly where the grid is relatively strong.

Therefore, we encourage the CAISO to immediately seek stakeholder input on the specific deliverability reforms that the CAISO should adopt for non-dispatchable renewable and storage resources to be able to count towards an LSE’s RA requirement or, alternatively, that allows non-dispatchable renewables to be netted from LSE load thus reducing the LSE’s RA requirement, depending on whether a net or gross load approach is adopted. Such a methodology that is in line with expected RA reforms would be used to determine the resources in each CREZ that could achieve that level of deliverability and be employed in the offshore wind sensitivity studies.

CalWEA recommends that the current deliverability assessment methodology be modified as follows: assume an N-1 condition (i.e., assume that one major transmission segment is offline rather than two) for each slice, and assume a set of conditions for load, charging and generation dispatch that is reasonable for the conditions expected during individual non-peak slices – for example, wind and solar resource dispatch assumptions should be realistic (e.g., no solar generation assumed after dusk).

(Separately, the CPUC and CAISO will need to revisit the Planning Reserve Margin to assure that sufficient RA capacity is procured to address on-peak conditions.)

3. Provide your organization's comments on the Policy-driven Assessment Sensitivity 1 – Offshore Wind Studies topic, as described in slides 29-50 related to the 2021-2022 Transmission Planning Process:

- a. CAISO should study 3 GW of offshore wind at the Central Coast as a discrete element of the study, including under a revised deliverability assessment methodology pursuant to CPUC Resource Adequacy reforms**

If the CAISO's study of OSW is to be meaningful, realistic, and thus useful, it must include a focus on 3 GW of potential offshore wind (OSW) development off the coast at Morro Bay. Studying only an 8.3 GW scenario is unlikely to provide useful information regarding near-term OSW development potential.

At present, the Bureau of Ocean Management (BOEM) has authorized potential OSW development within 399 square miles off Morro Bay, which would accommodate up to 3 GW of OSW development. While the U.S. Navy has acceded to this development, it has not yet acceded to OSW development of the coast at Diablo Canyon due to its military operations there and, in fact, has historically expressed very strong reservations about the impact that such development would have on its military operations.^{iv}

Given the very real possibility that additional OSW development beyond 3 GW off the coast at Morro Bay will not occur during the CAISO's current planning horizon, CAISO should separately study the transmission upgrades that would be necessary only to accommodate the OSW development that is possible within the BOEM's Morro Bay call area. In addition, the grid at the Central Coast is very strong, given the facilities that were built to ensure deliveries from the retiring DCNPP, whereas the grid at the North Coast (and Northern California more generally) is very weak and will require very substantial upgrades requiring at least a decade to plan and build. These considerations warrant a specific transmission planning focus on the upgrades required to accommodate 3 GW of OSW off Morro Bay.

Further, the CAISO should consider the far more limited upgrades that would be needed if the CAISO adjusts its deliverability assessment methodology for variable renewable resources consistent with reforms to the CPUC's Resource Adequacy Program now underway as discussed above. With such reforms, which would recognize that 3 GW of OSW at Morro Bay could be delivered under conditions reasonably expected during many, if not all, of the seasonal/time slices, relatively very limited upgrades are likely to be needed (e.g., the addition of a 500 kV switchyard at Morro Bay Substation). Assuming that RA and deliverability reforms are implemented, which seem appropriate and, in the case of RA reform, likely, it would largely remove the transmission interconnection hurdle for that 3 GW of OSW and thus greatly increase the likelihood that this development could occur in the 2030 timeframe.

- b. CAISO should also study 3 GW of offshore wind at the Central Coast in conjunction with an offshore transmission network as part of a potentially larger offshore wind development plan**

The CAISO's draft plan includes detailed consideration of an offshore network only for 1.6 GW for the Humboldt Bay area, connecting to the Bay Area via HVDC cable, as one of three options. CalWEA

supports consideration of this option but recommends that the CAISO consider offshore solutions more broadly. Given the increasing risk of major wildfires, as the state is once again experiencing, offshore networks will bring considerable risk-reduction benefits, and would also avoid the difficult task of obtaining siting approvals with a large number of land owners along a statewide, land-based path. Moreover, given other system network upgrades that will be necessary to achieve the 38 and 30 MMT GHG targets, at least some of which will be studied in this cycle, CAISO should study offshore networks in conjunction with longer-term OSW development.

To that end, as part of the study of 3 GW of OSW at Morro Bay, the CAISO should study system upgrades that bolster the grid between Northern and Southern California while resolving the LA Basin and Greater Bay Area local reliability constraints. Addressing all these needs at once is likely to produce overall efficiencies that will reduce total costs. Specifically, the CAISO should study an offshore network that connects the LA Basin to one or more Central Coast substations (Diablo Canyon and/or an expanded Morro Bay) via HVDC subsea cables. The OSW projects would connect via a shared gen-tie line to the Central Coast substation(s) where the subsea cable from the LA Basin would connect. The plan could, and we believe should, also involve a subsea cable from the same Central Coast substation(s) to the Bay Area.

CalWEA also encourages the CAISO to study an offshore network for its 21 GW outlook assessment.

Experience in the U.K. underscores these points. The U.K. is the current global leader in terms of deployed offshore wind capacity, with about 10 GW deployed over the past decade. It's current effort, called the Offshore Coordination Project, is underway to completely overhaul the UK's offshore wind transmission planning process.^[i] UK energy regulator, Ofgem, has noted that the continued construction of individual offshore wind farm grid connections may prevent the UK from reaching its goal of 40 GW by 2030. As part of the Offshore Coordination Project, therefore, grid operator National Grid ESO conducted a report that found that the benefits and opportunities of an integrated offshore transmission approach, involving both shared gen-ties and what we would call "network" facilities, are maximized if advanced early in the development process. To illustrate that, the report estimates that initiating an integrated approach in 2025 could save consumers 18 percent (approximately \$8 billion USD) in combined capital and operating costs out to 2050 relative to continued pursuit of an individual project approach.

4. Provide your organization's comments on the Economic Assessment Assumption Update for 2021-2022 Planning Cycle topic, as described in slides 51-65 related to the 2021-2022 Transmission Planning Process:

No comment at this time.

5. Provide your organization's comments on the Out of State Wind In Portfolios topic, as described in slides 66-73 related to the 2021-2022 Transmission Planning Process:

In considering any new transmission development out of state or within CAISO's footprint to bring out-of-state (OOS) wind into CAISO load centers, the CAISO should first consider (a) the deliverability reforms discussed above, and (b) the transmission capacity that will free up due to reduced imports from OOS fossil fuel resources, many of which are scheduled to retire, as discussed in the state's RETI 2.0 report. That report confirms the potential of energy-only transmission service within California

previously identified by the CPUC and CAISO that could enable over 23,000 MW of renewable energy capacity without added transmission.^v Some of this energy-only capacity may become deliverable capacity for variable renewables under deliverability reforms. Still needed, however, is to fill out the range of transmission options with more-specific cost and availability information on firm transmission service in the WECC region as coal plants retire,^{vi} and the far greater potential to transmit power on existing infrastructure using conditional firm transmission service, advanced grid technologies and operating agreements between the CAISO and other balancing authorities inside and outside California to dynamically schedule Western resources into California particularly based on conditional firm transmission service.

6. Provide your organization's comments on the updates related to the 20-Year Transmission Outlook, as described in slides 74-84:

Our comments in regarding deliverability reform and offshore wind planning apply also to the CAISO's 20-year Transmission Planning outlook.

7. Additional comments on the July 27, 2021 stakeholder call discussion:

CalWEA urges the CAISO not to constrain itself to the CPUC's 46 MMT base portfolio for the purpose of planning upgrades in the current TPP cycle. The 46 MMT scenario will not likely require substantial transmission upgrades; therefore, using it as the basis for the TPP would be largely pointless. A more realistic basis for transmission planning during the current 10-year planning horizon will be necessary to achieve the state's lower GHG targets given the lead-time required to build transmission. The CPUC recently stated that it "is strongly inclined to adopt" a 38 MMT target later this year.^{vii} The CAISO itself stated in comments last year that its production cost modeling analysis shows that load-serving entities (LSEs) will need to procure resources exceeding the Commission's 46 million metric ton ("MMT") Reference System Plan ("RSP") and its 38 MMT portfolio to maintain reliability as early as 2026.^{viii} Thus, CAISO should act on the authority granted to it by FERC to plan for upgrades that it believes to be needed to maintain reliability and meet the states policy goals.

CalWEA believes that CAISO needs to take bold actions now to meet the state's reliability and policy goals. Hence, CalWEA recommends that the CAISO develop a least-regrets transmission plan, consistent with its tariff, based on the upgrades that are common to each of two separately developed transmission plans: one developed for the Sensitivity Case 1 (38-MMT portfolio) and the other developed for the Sensitivity Case 2 (30-MMT portfolio). The CAISO can be confident that the upgrades that are common to both portfolios will be "backbone" transmission upgrades that will accommodate multiple possible resource futures.

While the current TPP cycle must be based on the CAISO's existing deliverability criteria, future cycles should reflect reformed criteria:

- In parallel and in coordination with the CPUC's RA reform stakeholder working group process, the CAISO should develop companion deliverability reforms that will be necessary. (The working group report is due to be transmitted to the CPUC by February 2022).
- The next (2022-23) IRP-TPP portfolio (typically adopted in February) should be put on hold pending a CPUC decision on structural RA reforms so that those reforms can inform the CPUC's

IRP-TPP portfolio. (If the CAISO plans based more realistic assumptions in the current cycle, as described above, sufficient transmission upgrades will be identified or planned to warrant such a planning hold.) The TPP process can, however, reflect the CPUC's decision on RA structural reforms (expected during summer 2002) and the companion CAISO deliverability reforms.

Lastly, CalWEA notes that the CAISO should not encourage a CPUC busbar mapping process that is designed to avoid transmission upgrades. The point of transmission planning should be to identify the optimal combination of transmission, generation and storage resources, while ensuring reliability. Such optimization cannot occur if decisions regarding any of these elements are pre-empted by subjective judgements.

ⁱ CPUC D.21-07-014.

ⁱⁱ CPUC R.19-11-009, SCE and CalCCA Revised Track 3B.2 Proposal at p. 11 (December 18, 2020).

ⁱⁱⁱ CPUC D.21-07-014 at p. 40.

^{iv} See, e.g., "Outreach on Additional Considerations for Offshore Wind Energy off the Central Coast of California." ("The [Carbajal] group did not re-examine areas within the Diablo Canyon Call Area at this time due to DoD's significant mission activities in the area.") Available at https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/UPDATED-NOA-Outreach-on-Additional-Considerations_0.pdf.

^v Renewable Energy Transmission Initiative 2.0 Plenary Report (Final Report) at pp. 9-10 (February 23, 2017). Available at: <https://efiling.energy.ca.gov/getdocument.aspx?tn=216198>.

^{vi} According to the RETI 2.0's Western States Outreach Project Report (at p. 20), there were 3,000 MW of coal units planned to come offline in the West by 2019, and another 4,000 MW by 2025, creating the ability to "repurpose" a significant amount of transmission capacity previously used for coal, although it is not clear how much of that capability would be available for deliveries to California.

^{vii} D.12-06-035, issued June 30, 2021, at p. 78.

^{viii} CAISO October 23, 2020, Comments in CPUC R. 20-05-003 at p. 2-3.