



California Wind Energy Association

August 11, 2021

California Energy Commission
Docket No. 19-SB-100
Docket Office
1516 Ninth Street
Sacramento CA 95814

Submitted Electronically via CEC website to Docket 21-SIT-01

Re: Comments on July 22, 2021, Workshop on Next Steps to Plan for Senate Bill 100 Resource Build - Transmission

I. Introduction

The California Wind Energy Association (CalWEA) appreciates this opportunity to provide comments on the subject matter of the July 22, 2021, Joint Agency Workshop on Next Steps to Plan for Senate Bill 100 Resource Build – Transmission. Most of these comments were submitted largely verbatim to the California Independent System Operator (CAISO) on August 10, 2021, in response to the issues that the CAISO presented to stakeholders on July 27, 2021, as part of its 2021-2022 Transmission Planning Process (TPP). These comments closely relate to the subject matter of the Joint Agency Workshop and address actions that CalWEA believes should be taken by the CAISO as well as the California Public Utilities Commission (CPUC). In addition, CalWEA provides comments on a topic area not at issue in the CAISO’s TPP that was addressed at the Joint Agency Workshop, namely, how offshore wind (OSW) projects can be fostered by facilitating the development of shared interconnection facilities. (See section VI.)

II. Summary of Comments

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, in partnership with the CPUC, 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.

CalWEA also recommends that the CPUC facilitate the development of OSW resources by planning for and ensuring the development of shared interconnection facilities, which will reduce overall project costs and impacts to marine 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.

III. The CAISO and the CPUC Should Address the Need for Reforming the CAISO's Deliverability Assessment Methodology as the CPUC's Resource Adequacy Program is Reformed

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 2024.¹ 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.²

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

¹ CPUC D.21-07-014.

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

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." (CPUC D.21-07-014 at p. 40.)

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.)

IV. 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 (requested by the CPUC) is to be meaningful, realistic, and thus useful, it must include a focus on 3 GW of potential 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.³

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.

V. 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 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

³ 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.

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.

VI. The CPUC Should Facilitate the Development of OSW Resources by Planning for, and Ensuring the Development of, Shared Interconnection Facilities as Part of an Integrated Network

CalWEA recommends that the CPUC facilitate the development of OSW resources by planning for, and ensuring the development of, shared interconnection facilities, which will reduce overall project costs and impacts to marine resources. As representatives of the Center for Energy Efficient and Renewable Technologies (CEERT) pointed out in their presentation at the July 22 Joint Agency Workshop, it would be inefficient and costly for several adjoining OSW projects to separately connect to the grid with parallel generation interconnection facilities (gen-ties). A single, shared gen-tie would not only be more efficient and impose fewer impacts, but it would lower the pro-rata cost for each project and overcome a significant development hurdle.

Experience in the U.K. underscores this point. The U.K. is the current global leader in terms of deployed offshore wind capacity, with about 10 GW deployed over the past decade. Its current effort, called the Offshore Coordination Project, is underway to completely overhaul the UK's offshore wind transmission planning process.⁴ 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

⁴ National Grid ESO, "Offshore Coordination Phase 1 Final Report" (December 16, 2020). Available at: <https://www.nationalgrideso.com/document/183031/download>.

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. Those savings would be cut in half by waiting until 2030.

CEERT proposed the use of a “renewable trunkline” to accomplish a shared gen-tie, which it described as an “innovation” in transmission planning the Tehachapi Renewable Transmission Project (TRTP). The TRTP itself was not the innovation – that was planned as a network facility whose cost was rolled into the Transmission Access Charge (planning the TRTP as a network that was integral to the larger grid was, however, a very critical decision in the success of the project and relates to our transmission planning comments above). The innovation was the CAISO’s Location Constrained Resource Interconnection Facility (LCRIF) tariff, which was intended as a means of enabling shared gen-ties to connect to the TRTP. However, despite the intent of the LCRIF tariff, which was to reduce the risk of shared gen-tie facilities, the concept has not proven to be useful in practice. The initial concept was to enable the first Tehachapi wind developments to use a planned shared gen-tie at a pro-rata cost, with ratepayers picking up the risk that the rest of the line would not be subscribed. However, in response to stakeholder concerns, the tariff that was ultimately adopted left 60 percent of the risk with the initial developer. As a result, the tariff has been used only once. Thus, absent major modifications, the LCRIF tariff is unlikely to be a useful option for a shared gen-tie for OSW because 60 percent of the cost of that will be a heavy burden for the first interconnecting project to bear.

CalWEA suggests another approach, which would be for the CPUC to plan for a shared gen-tie as part of what eventually will need to be a shared LSE mandate for the purchase of OSW resources, and to guarantee cost recovery for the shared gen-tie facility. This will remove the risk of developing the facility based on subscription by the first interconnecting project. Costs would be paid on a pro rata basis by developers based on capacity. Shared gen-tie facilities should be an element of the larger network transmission plan to access offshore wind resources.

Sincerely,

/s/

Nancy Rader
Executive Director
California Wind Energy Association
Email: nrader@calwea.org
