BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Continue Oversight of Electric Integrated Resource Planning and Procurement Processes.	Rulemaking 25-06-019

CALIFORNIA WIND ENERGY ASSOCIATION COMMENTS ON ALJ RULING ON BUSBAR MAPPING OF ELECTRICITY RESOURCE PORTFOLIOS FOR 2027-2028 TRANSMISSION PLANNING PROCESS

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On behalf of the California Wind Energy Association

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I. INTRODUCTION AND SUMMARY

Pursuant to the October 12, 2026, *Administrative Law Judge Ruling Seeking Comments on Busbar Mapping of Electricity Resource Portfolios for the 2027-2028 Transmission Planning Process* ("Ruling"), the California Wind Energy Association ("CalWEA") provides these comments on Energy Division staff's October 12, 2026, proposed busbar mapping for the 2027-2028 Transmission Planning Process ("TPP").[1] CalWEA addresses only "in-state" California wind resources.[2]

In summary:

- CalWEA appreciates staff's consideration of CalWEA's comments on the zonal in-state wind selections reflected in the August Modeling Results,[3] which helped to inform increased capacity in PG&E Northeast Cal and SDG&E Imperial study areas, where commercial wind development activity is clear. However, the wind capacity in these areas

[1] See Initial Mapping Results for the Proposed Base Case, Compact Dashboard - Initial Mapping for the 27-28 TPP Case, 10/12/2026, at Tab "Summary_bySub_forTPP", Columns P, Q and R. Available at: https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/electric-power-procurement/long-term-procurement-planning/2024-27-irp-cycle-events-and-materials/assumptions-for-the-2027-2028-tpp.

[2] Consistent with the Commission's modeling convention, "in-state wind" includes Baja California wind resources modeled in the SDG&E Imperial study area.

[3] See Energy Division Staff, 27-28 Transmission Planning Process RESOLVE Modeling Results, Attachment to Administrative Law Judge's (August 31, 2026) Ruling ("August Modeling Results") at Slide 80. Available at: https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan/2024-2026-irp-cycle-events-and-materials/assumptions-for-the-2027-2028-tpp/27-28-tpp-draft-ruling-deck_draft.pdf.

should be increased and advanced to 2037.

- Given a lack of commercial wind development activity and the need for a diverse mix of resources to cost-effectively achieve the state's greenhouse gas reduction goals, staff should use the most accurate analysis of the most promising wind resource areas in California, which CalWEA submits is its own. CalWEA's previous comments led staff to drop 2,200 MW of wind resources identified in areas without commercial development potential. CalWEA again recommends that the Commission reduce its wind resource estimates at numerous busbars and focus on more promising areas, as shown in the Appendix.
- CalWEA placed substantial resources in 2037, emphasizing Northern California wind resources. However, it would be most efficient and cost-effective to plan and build transmission for total 2042 resources of all resource types. Abundant wind and geothermal, as well as solar, resources in Northern California (and out-of-state) will substantially mitigate the risk that transmission (connecting to NV Energy) goes unused.

Getting busbar mapping right in this cycle is exceedingly important, given CAISO's transition to a new biennial transmission planning process that will delay the next policy studies to the 2029-2030 TPP cycle, which will inform CAISO's Cluster 20 – too late to deliver resources in the 2037-2040 timeframe. Moreover, California largely controls the planning and permitting for in-state resources and transmission, providing a greater chance of securing these resources than out-of-state or offshore wind resources.

II. COMMENTS ON PROPOSED BUSBAR MAPPING

A. Overview

CalWEA appreciates Energy Division's consideration of CalWEA's comments on the zonal in-state wind selections reflected in the August Modeling Results. Specifically, CalWEA appreciates the capacity increase in PG&E Northeast Cal and SDG&E Imperial areas, where commercial wind development activity is clear. However, we recommend a further increase at specific busbars within these areas for 2037, given commercial interest and the ability to plan the necessary transmission in that timeframe. Additionally, we recommend restoring the capacity shown in the August Modeling Results for PG&E NGBA and SCE Northern areas, though spread across different busbars, and increasing wind capacity in PG&E NGBA. Focusing on PG&E NGBA, as well as the PG&E Northeast Cal area, makes sense because Northern California is less conflicted overall than Southern California, and because strong development interest in geothermal

energy means that transmission development in the Northern California region can support both resources.

These and CalWEA's other busbar recommendations are informed by CalWEA's previous identification of the most promising wind resource areas for development, reflecting commercial prospecting and development experience over the past 20 years.[4] That analysis used UL data to identify wind resources,[5] which CalWEA then substantially reduced (sometimes to zero) to account for environmental, visual, and other siting challenges specific to each area. However, the screening was more limited than the overbroad discretionary land-use screens applied by the California Energy Commission ("CEC") that, as CalWEA documented, would have screened out 42 percent of operating projects.[6] CalWEA also used a more appropriate 25 acre/MW density factor to estimate resource potential.[7] CalWEA would appreciate the opportunity to discuss the land-use screening issues relating to our proposed busbar areas with CEC and Energy Division staff.

While project development activity is occurring in several areas across the state, this activity is insufficient to rely on commercial interest to fully inform busbar mapping.[8] For that reason, and given the need for a diverse mix of resources to cost-effectively achieve the state's greenhouse gas reduction goals,[9] Energy Division staff should use the most accurate analysis of the most promising wind resource areas in California, which CalWEA submits is its own. In an earlier iteration of busbar mapping, staff dropped 2,200 MW of wind resources identified in the PG&E

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[4] See CalWEA's Informal Comments on Proposed Updates to the Busbar Mapping Methodology (September 5, 2025).

[5] The Global Wind Atlas data now in use by the Commission is a major improvement over previous practice; however, UL data is the industry standard for wind project prospecting and development.

[6] Note 4 *supra* at p. 4 and Appendix.

[7] *Id.* at p. 1.

[8] As explained in CalWEA's Comments on ALJ Ruling Seeking Comments on Electricity Portfolios for the 2027-2028 Transmission Planning Process and Potential for Geographically Targeted Procurement (September 28, 2026), at p. 5, CalWEA attributes the lack of in-state wind development largely to the Commission's lack of support for this resource over the past decade.

[9] *See, e.g.*, Southern California Edison's Comments on ALJ Ruling Seeking Comments on Electricity Portfolios for the 2027-2028 Transmission Planning Process and Potential for Geographically Targeted Procurement (September 28, 2026), at p. 2. ("As Staff's analysis demonstrates, the inability to meet the current 2030 and 2035 GHG targets is the cumulative effect of transmission development delays, interconnection bottlenecks, permitting challenges, federal actions, and *constrained access to the diverse portfolio of clean resources* that California's long-term planning has consistently identified as least-cost and least-regrets solutions." Emphasis added.)

Fresno area, following CalWEA's recommendation to improve the wind resource assessment method that staff had been relying on.[10] Similarly, CalWEA recommends that the Commission reduce its wind resource estimates at numerous busbars and focus on more promising areas.

B. Specific Busbar Recommendations and Rationales

CalWEA's busbar recommendations, compared with staff's October 12, 2026, busbar recommendations, move a significant amount of capacity from 2042 to 2037.[11] Staff had stated that "[a]lthough all in-state wind potential becomes available by 2035, much of it is not selected in the 10-year timeframe (2037) due to binding transmission constraints, driven by competition from near-term solar and storage and/or geothermal resources also becoming available by 2035."[12] However, the necessary additional transmission capacity for wind can be planned and built in the ten-year planning timeframe.[13] Staff seems to have recognized this when it moved capacity from 2042 to 2037 at busbars in the PG&E Northeast Cal and SDG&E Imperial zones; it should do the same in other areas. In addition, as CalWEA has previously emphasized, it will be necessary to reserve firm capacity needed for the planned wind resources.[14]

Nevertheless, it would be most efficient and cost-effective to plan and build transmission for total 2042 resources of all diverse resource types. As CalWEA explained in comments on the August Ruling, the Commission should apply decision-making under uncertainty (DMUU) in the current IRP-TPP cycle. Abundant wind and geothermal, as well as solar, resources in Northern California (and out-of-state) will substantially mitigate the risk that transmission (also connecting to NV Energy) goes unused. The Commission and CAISO can also identify "offramps" for further-out approved transmission projects if conditions evolve and they are no longer robustly identified

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[10] Note 4 *supra* at p. 1.

[11] We note that the August Modeling Results also recognized more 2037 wind potential in PGE NGBA and SCE Northern that was included in the October busbar mapping; CalWEA bolstered and restored these figures, respectively. See August Modeling Results, Slide 80, compared to staff's October 12, 2026, busbar mapping.

[12] See August Modeling Results, Slide 80, and Energy Division Staff, Integrated Resource Planning (IRP) Recommended 27-28 CAISO Transmission Planning Process (TPP) Portfolios and Initial Busbar Mapping Results (October 22, 2026), Slide 44.

[13] Moreover, in the August Modeling Results, the 762 MW that staff placed in PG&E NGBA and 700 MW in SCE Northern for 2037 would also require transmission upgrades. The same upgrades that will enable this capacity will enable the additional capacity listed for 2042.

[14] See Note 8 *supra* at pp. 7-8.

as part of future TPP analysis.

CalWEA's proposed busbar mapping is shown in the Appendix. CalWEA selected specific busbars for the following reasons:

- Potential for added capacity when projects are repowered, and/or infill potential (PG&E GBA/Birds Landing and Tesla);
- Proposed project proximity to substations (PG&E Northeast Cal/Madeline and Canby);
- Substantial resource potential after applying 50-90% discount factors to account for potential environmental, military, and visual sensitivities; constructability; and early development activity (PG&E Northeast Cal, PG&E NGBA, SCE Northern – Antelope and Vincent);
- Current development activity:
    - The 2,173 MW at SDGE Imperial/ECO for 2037 includes, in the CAISO queue:
        - Sempra's 300-MW Energía Sierra Juarez 4 (ESJ4) project (C15, targeted 2030 COD) and its 300-MW ESJ5 (C16, targeted 2032 COD), both fully covered by exclusivity agreements with California LSEs. Sempra is planning an additional 600 MW of ESJ expansion for 2035 and 2037, subject to further development and future queue participation. The existing double-circuit 230 kV gen-tie infrastructure and established bay positions at ECO strengthen the credibility of this expansion potential and support its inclusion in busbar mapping and deliverability planning.
        - Ignis Energy USA's 973-MW Viento Fronterizo project (C13, 2033 COD). Ignis has received positive feedback from the U.S. Department of Energy regarding the new Presidential Permit requirements for its 973 MW Baja wind project.
    - The 1,015 MW at PG&E Northeast Cal for 2037 includes:
        - Two wind projects, Fourth Element and Company LF, in the NV Energy queue, placed at the Madeline substation, which is most proximate to the proposed projects. CalWEA proposes a 500-kV substation, which is needed to connect to the CAISO grid. Staff divided these resources between the Leavitt and the Madeline substations, indicating two 345-kV substations that would presumably not connect to CAISO since CAISO does not have 345-kV-class infrastructure, while NV Energy has such

infrastructure in that area. CalWEA strongly cautions against this approach because it will not deliver wind energy to California LSEs; high wheeling charges and scarce import rights will thwart delivery.

- 250 MW at the Canby (Modoc Co.) substation, based on strong additional wind resource availability that has been substantially discounted. CalWEA proposes a 115-kV substation.

CalWEA eliminated or reduced capacity at many busbars that were selected by CPUC staff for the following reasons:

- Substation capacities under 150 MW outside of developed areas were eliminated due to lack of necessary project economies of scale (PG&E Fresno, PG&E Kern, and PG&E NGBA);
- Lack of sufficient commercial-grade wind resources; and
- Environmental conflicts, known tribal/visual sensitivities, or military conflicts.

III. CONCLUSION

For these reasons, CalWEA urges the Commission to adopt CalWEA's proposed busbar mapping, which will support timely and cost-effective achievement of the state's GHG goals.

Respectfully submitted,

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On behalf of the California Wind Energy Association

November 2, 2026

APPENDIX

CalWEA Recommended Mapping - 2037 & 2042 for In-State Wind Resources Compared with CPUC Staff 10/12/26 Busbar Mapping*

*Tab "Summary_bySub_forTPP", Columns P, Q and R

CAISO ZONE / Substation	**CPUC 2037 FCDS**	**CALWEA 2037 FCDS**	**CPUC 2042 FCDS**	**CALWEA 2042 FCDS**	**CPUC TOTAL**	**CALWEA TOTAL**
PGE Fresno	**14**	**0**	**0**	**0**	**14**	**0**
Los Banos 230 kV	14	0	0	0	14	0
PGE GBA	**194**	**292**	**0**	**700**	**194**	**992**
Altamont 230 kV	10	0	0	0	10	0
Birds Landing 230 kV	92	200	0	200	92	400
Tesla 230 kV	92	92	0	0	92	92
Soledad	0	0	0	250	0	250
Coburn	0	0	0	250	0	250
PGE Kern	**0**	**0**	**242**	**0**	**242**	**0**
Cabrillo 115 kV	0	0	136	0	136	**0**
San Luis Obispo 115 kV	0	0	30	0	30	**0**
Sisquoc 115 kV	0	0	49	0	49	**0**
Topaz 230 kV	0	0	27	0	27	**0**
PGE NGBA	**0**	**1200**	**1171**	**850**	**1171**	**2050**
Bridgeville 115 kV	0	0	530		530	0
Cortina 230 kV	0	400	0	200	0	600
Cove Road 230 kV	0	0	12	0	12	0
Glenn 230 kV	0	400	51	200	51	600
Hopland (Proposed 230 kV)	0	0	0	250	0	250
Humboldt 115 kV	0	0	193	0	193	0
James B Black 230 kV	0	0	47	0	47	0
Jessup 115 kV	0	0	38	0	38	0
Malin 500 kV	0	0	30	0	30	0
Pit 4 230 kV	0	0	19	0	19	0
Putah Creek (Proposed 230 kV)	0	400	0	200	0	600
Summit 115 kV	0	0	252		252	0
PGE Northeast Cal	**700**	**1015**	**315**	**250**	**1015**	**1265**
Canby (Modoc Co.) (Proposed) 115 kV	0	0	**0**	250	**0**	250
Leavitt (Proposed) 345 kV	700	0	0	0	700	0
Madeline (Proposed) 345 / **500 kV**	0	1015	315	0	315	1015
SCE Eastern	**60**	**210**	**407**	**0**	**467**	**210**
Devers 230 kV	60	60	0	0	60	60
Devers 500 kV	0	150	407	0	407	150
SCE EOP	**0**	**0**	**0**	**0**	**0**	**0**
SCE Metro	**0**	**0**	**0**	**0**	**0**	**0**

SCE NOL	**0**	**0**	**0**	**0**	**0**	**0**
SCE Northern	**100**	**752**	**1721**	**500**	**1821**	**1252**
Antelope 230 kV	0	0	233	0	233	0
Antelope 500 kV	0	500	366	500	366	1000
Vincent 230 kV	0	252	120	0	120	252
Vincent 500 kV	0	0	132	0	132	0
Warne 230 kV	0	0	44	0	44	0
Whirlwind 230 kV	100	0	325	0	425	0
Windhub 230 kV	0	0	162	0	162	0
Windhub 500 kV	0	0	340	0	340	0
SDG&E Imperial *	**1821**	**2174**	**1289**	**0**	**3110**	**2174**
Boulevard East 138 kV	0	0	146	0	146	0
Carrizo Gorge 138 kV	0	0	31	0	31	0
ECO 230 kV	1310	2174	896	0	2206	**2174**
Imperial Valley 230 kV	0	0	16	0	16	0
Imperial Valley 500 kV	0	0	37	0	37	0
No. Gila-Imp. Valley (Proposed) 500 kV	0	0	28	0	28	0
Ocotillo Express 500 kV	0	0	135	0	135	0
Suncrest-Ocotillo (Proposed) 500 kV	511	0	0	0	511	0
GRAND TOTAL	**2889**	**5643**	**5144**	**2300**	**8033**	**7943**