

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET
SACRAMENTO, CA 95814-5512

July 1, 2022

Elliot Mainzer
President and Chief Executive Officer
California Independent System Operator
250 Outcropping Way
Folsom, CA 95630
Transmitted electronically

RE: Transmittal Letter to CAISO for 2022-23 TPP High Electrification Portfolio

Dear Mr. Mainzer:

With this letter, the California Public Utilities Commission (CPUC) and the California Energy Commission (CEC) request the following of the California Independent System Operator (CAISO):

1. To use the 2021 Integrated Energy Policy Report (IEPR) Additional Transportation Electrification scenario as its load assumptions for 2022-23 Transmission Planning Process (TPP) base and sensitivity case studies
2. To study the 30 million metric ton (MMT) High Electrification policy-driven sensitivity portfolio transmitted herein as in the 2022-23 TPP High Electrification Sensitivity Scenario
3. To continue studying the deliverability needs and corresponding transmission needs related to out-of-CAISO long-lead time resources, such as out-of-state wind and geothermal resources beyond the CAISO's balancing area authority.

Background:

On February 10, 2022, in its Integrated Resource Planning (IRP) proceeding (R.20-05-003), the CPUC adopted a Preferred System Plan (PSP) portfolio for analysis by the CAISO in its 2022-2023 TPP.¹ The portfolio was developed based on the 2020 Integrated Energy Policy Report (2020 IEPR) demand forecast, and it includes all resources that LSEs have procured or are planning to procure to meet the 38 MMT target for electric sector greenhouse gas emissions. This portfolio includes, in addition to existing resources, approximately 25,500 MW (nameplate capacity) of new supply-side renewables and 15,000 MW of new storage and demand response resources by 2032.

¹ See [D.22-02-004](#).

D.22-02-004 delegated authority to CPUC staff to work with the CEC and CAISO staff to explore the development of a portfolio with a 30 MMT emission limit in 2030 using high electrification assumptions for study as a policy-driven sensitivity in the 2022-2023 TPP. The D.22-02-004 Ordering Paragraph (OP) 8 states:

“The Commission also delegates to Energy Division staff, in consultation with staff of the California Energy Commission and CAISO, the development of a policy-driven sensitivity portfolio based on a 30 million metric ton greenhouse gas target, and associated busbar mapping, if it is determined by Commission staff to be feasible within the next few months.”

Studying the transmission impacts associated with this sensitivity portfolio will help the State move toward planning for a higher electrification future and identify any incremental infrastructure needs, given existing and potentially new policy drivers regarding high electrification. In particular, and as stated in the D.22-02-004, the benefits of this approach include:

- Assessing the transmission system and identifying potential transmission investments needed;
- Investigating local capacity issues that may be significant in a high electrification future, especially in constrained areas like the Los Angeles (LA) Basin; and
- Assessing any potential land-use constraints associated with the high electrification resource/transmission buildout, particularly through the busbar mapping process.

Generally, IRP stakeholder comments were supportive of planning for higher electrification.

Following D.22-02-004, the staff of CEC, CPUC, and CAISO developed inputs necessary for the CAISO to conduct an assessment of the transmission system impacts of a scenario representing a high electrification future taking into account the policy and market drivers pointing towards higher levels of transportation electrification, including the proposed California Air Resources Board (CARB) electrification regulations: Advanced Clean Cars II (ACCII) for light-duty vehicles and Advanced Clean Fleets (ACF) for medium and heavy-duty vehicles. Considering these, the expectation is the 2022 IEPR will have higher level of load compared to the 2021 IEPR.

In light of this, the CEC has developed and adopted two grid planning scenarios:² Inter-Agency High Electrification (HE) scenario and Additional Transportation Electrification (Additional TE) scenario. The Additional TE scenario reflects higher loads compared to the HE scenario in earlier years (in line with 2021 IEPR mid-case) and could push the transmission system further to its limits and identify potential transmission investments needed. The CPUC staff developed the resource portfolio for the 30MMT High Electrification sensitivity based on the Additional TE scenario.

Scenario for the 2022-2023 TPP:

Accordingly, we request that for the 2022-2023 TPP the CAISO should utilize the 2021 IEPR Additional Transportation Electrification scenario developed by the CEC, which has higher loads than the 2021 IEPR forecast CAISO had originally planned to use in 2022-23 TPP. This should apply to both the base case already transmitted to CAISO in D.22-02-004 and the High Electrification 30 MMT sensitivity discussed below. Due to the long-lead time required to build generation and transmission infrastructure, we believe it is important for CAISO to use this scenario for the 2022-23 TPP.

² <https://efiling.energy.ca.gov/GetDocument.aspx?tn=243222>

High Electrification Policy-Driven Sensitivity Portfolio:

Concurrent with this letter, CPUC staff will transmit an additional busbar mapped portfolio intended to explore the transmission implications of robust “high electrification” demand under a 30 MMT emission limit in 2030 for CAISO’s use in the 2022-23 TPP High Electrification Sensitivity Study³. For this analysis, we request CAISO to use the 2021 IEPR Additional Transportation Electrification scenario. We further request that the planning horizon for this “high electrification” scenario extend to 2035.

We anticipate that CAISO’s analysis of this policy-driven portfolio with the 2021 IEPR Additional Transportation Electrification scenario will help:

- Identify the potential transmission investments needed for a high electrification future;
- Identify local capacity issues that may be significant in a high electrification future; and
- Provide information to help assess any potential land-use constraints associated with the high electrification transmission buildout.

Long-Lead Time Renewable Resources:

Finally, we also respectfully request that CAISO study, identify and explain opportunities to provide Maximum Import Capability (MIC) expansion and incremental transmission capacity necessary for deliverability of long-lead time renewable resources, such as geothermal and out-of-state wind, beyond the CAISO’s balancing area authority, particularly those mapped in the policy driven base case and sensitivity study portfolios. As CAISO noted in its 2021-22 Transmission Plan (*emphasis added*):

As requested by the CPUC, the ISO studied the potential transmission implications and requirements inside the ISO footprint of 1062 MW of out-of-state wind generation being injected at each of Eldorado (representing potential new capacity from Wyoming or Idaho), or Palo Verde (representing potential new capacity from New Mexico). The ISO found that injections from these sources, as part of the base case portfolios provided in this planning cycle, triggered no additional transmission requirements. ***However, the ISO notes that the resources seeking to interconnect to the ISO queue far exceed the current portfolio amounts – and current needs. Those volumes in the interconnection queue that have already been allocated deliverability for purposes of providing resource adequacy capacity subject to meeting their obligations to advance through to commissioning, would fully utilize existing and planned transmission capacity, if they proceed.*** The sensitivities conducted with 1500 MW being delivered to both injection points led to the same conclusion.

Based on the long lead time resources mapped in the portfolios for the policy and reliability driven base case and the High Electrification sensitivity study, it is important that CAISO begin undertaking necessary studies to inform and enable the development of incremental transmission capacity to support these long lead-time resources while preserving the existing transmission capacity that has been allocated to other projects earlier in the queue.

³ [Busbar Mapping results for the 30 MMT high electrification sensitivity portfolio for the 2022-23 TPP](#)

Thank you for your timely consideration of this request and for continuing to work collaboratively with us to make forward progress in developing the generation and transmission resources that are critical to the state's reliability and decarbonization policy goals.

Sincerely,

A handwritten signature in blue ink that reads "Alice Busching Reynolds". The signature is fluid and cursive.

Alice Busching Reynolds
President, California Public Utilities Commission

A handwritten signature in blue ink that reads "Cliff Rechtschaffen". The signature is cursive and somewhat stylized.

Cliff Rechtschaffen
Commissioner, California Public Utilities Commission

A handwritten signature in black ink that reads "G. S. Gargadher". The signature is bold and blocky.

Siva Gunda
Vice Chair, California Energy Commission