

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**



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Order Instituting Rulemaking to
Continue Electric Integrated
Resource Planning and Related
Procurement Processes

Rulemaking 20-05-003
(Filed May 7, 2020)

**REPLY COMMENTS OF FERVO ENERGY COMPANY
ON STAFF OPTIONS PAPER**

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Fervo Energy Company (“Fervo”) submits these reply comments in response to the Administrative Law Judge’s Ruling Seeking Comments on Staff Paper on Procurement (Ruling), issued on September 8, 2022, and modified by a subsequent Administrative Law Judge’s Ruling on October 7, 2022, which changed the submission dates for comments. In response to party comments served on December 12, 2022, Fervo recommends that the Commission consolidate procurement and planning into a single comprehensive process that considers policy goals and all that is needed to achieve them. Specifically:

- Reliability modeling should be more forward-looking and incorporate all reasonably probable scenarios
- Transmission is a barrier to project development that must be considered at all planning stages. Additionally, the planning process should explicitly account for relative transmission impacts of various generation technologies and potential resource portfolios.
- More temporal granularity in GHG impact of procurement activity should be considered.
- Value of specific resource attributes should be incorporated into procurement requirements – firmness, dispatchability benefits need to be identified and accounted for

I. Reliability modeling should be more forward-looking and incorporate all reasonably probable scenarios

The current need assessment process relies on Effective Load Carrying Capability (ELCC) to determine resource need and compliance, particularly for variable resources in the IRP process as well as the resource adequacy program. However, resource adequacy is in the process of transitioning to a Slice of Day methodology, which assesses each resource's expected capability over the highest forecasted loads each hour of the day for each month. The potential disconnect between the current ELCC value and the slice of day value is a concern that has been raised by several parties. SCE¹, CalWEA² and CEERT³ support using the 24-slice methodology to determine procurement need as well as resource adequacy compliance. CAISO, however, points out⁴ that the 24-hour slice approach is inappropriate for adoption in the IRP proceeding. Fervo agrees with CAISO, noting that IRP and resource adequacy (RA) serve different purposes. RA is intended to determine the minimum obligation assigned to LSEs based on expected load and resource conditions during the immediate future, whether for a single year or several years ahead. IRP, on the other hand, is intended to determine the amount of new resource capacity needed over a longer period, looking forward 10 to 15 years. As CAISO points out, a full hourly (8,760 hours) Loss of Load Probability (LOLP) stochastic assessment is necessary to capture reliability needs beyond those identified in an annual RA assessment. This is particularly important because RA is basically a minimum short-term requirement. Additional longer-term needs identified in a stochastic assessment should be the basis of IRP goals, which are not limited to minimum identified resource need.

¹ SCE Comments (<https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M499/K887/499887864.PDF>), Page 12

²² CalWEA Comments (<https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M499/K887/499887967.PDF>), Page 2

³ CEERT Comments (<https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M499/K887/499887753.PDF>), Page 7

⁴ CAISO Comments (<https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M499/K887/499887972.PDF>), Page 12

The forward-looking approach also supports the use of marginal ELCC for determining the contribution of new resources. The issue of using vintaged marginal ELCC values was also addressed by several parties. TURN⁵ opposes the vintage approach, suggesting that it would allow older facilities to charge premium prices due to their higher ELCC value, while the Green Hydrogen Coalition⁶ supports vintage ELCC as rewarding first-movers that paid a premium for a new solution. Fervo suggests that concerns about different ELCC values for otherwise identical new and existing resources could be mitigated by limiting the resource's ELCC value to the term of its initial contract with any LSE. This would also serve to assure LSEs that the ELCC they procured is retained through the term of their contract.

A more forward-looking LOLP assessment also facilitates consideration of the Winter Renewable Drought (WRD) conditions in determining resource needs. Firm resources whose capacity is not impacted by environmental conditions that impact variable resources or shorter-term storage that relies on variable resources for charging, should be appropriately valued for that capability. A more forward-looking assessment also provides more time for longer-lead-time firm resources to complete their development and interconnection process.

II. Transmission is a barrier to project development that must be considered at all planning stages. Additionally, the planning process should explicitly account for relative transmission impacts of various generation technologies and potential resource portfolios.

As the Commission noted in its recent proposal⁷ to establish a Transmission Project Review, transmission upgrades are a significant component of meeting clean energy goals and informing

⁵ TURN Comments (<https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M499/K887/499887662.PDF>), Page 10

⁶ CHC Comments (<https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M499/K888/499888291.PDF>) Page 7

⁷ [Draft Resolution E-5252](#), issued December 13, 2022.

the IRP process. An IRP process that identifies and encourages more forward procurement will help identify, plan and develop actual long-term transmission needs.

Insufficient transmission capacity is a barrier to resource development and can impact the relative cost and viability of resource development depending on the location and operating characteristics of potential resources. CAISO's 20-year Transmission Outlook⁸ identifies over \$30 billion in transmission upgrades that could be needed to meet long-term policy goals. While the relative cost impact of transmission upgrades is somewhat incorporated into the IRP modeling process, EDF points out⁹ that increased investment in clean firm resources will obviate the need for millions of MW miles of new transmission. Fervo supports EDF's encouragement that the Commission recognize the value of slightly more expensive firm resources by accounting for reduced transmission expansion. A firm, always available resource like geothermal can deliver several times the amount of clean energy per MW of transmission capacity as variable wind or solar resources.

III. More temporal granularity in GHG impact of procurement activity should be considered.

Reducing GHG emissions is a primary driver of the IRP procurement preferences. More accurately assessing the relative GHG impacts of different resource attributes would be helpful in valuing those attributes. Incorporating a more granular GHG profile into the modeling process would make it possible to more accurately correlate resource production profiles to GHG impact. It would also facilitate LSE resource choices to maximize the environmental benefit of their procurement without requiring specific resource types. As pointed out by TURN and

⁸ <https://stakeholdercenter.caiso.com/RecurringStakeholderProcesses/20-Year-transmission-outlook>

⁹ EDF Comments, page 8.

CEERT, utilizing a Clean System Power (CSP) tool to account for GHG emissions would provide a more accurate assessment of GHG emissions than an annual Clean Energy Standard.

IV. The value of specific resource attributes should be incorporated into procurement process – firmness, dispatchability benefits need to be identified and accounted for

As has been demonstrated over time, developing an optimal future procurement portfolio is complicated and involves multiple variables that can impact the various goals of the IRP process. Identifying specific variables to measure and value for various resource options is a key component of developing optimal portfolios. Firmness, dispatchability, operational flexibility, and location can impact overall resource value and thus need to be accounted for. Many parties' comments express the need for attribute-based procurement and even separate procurement obligations for long lead time resources with specific characteristics. Whether specific attributes are incorporated into procurement obligations or to generally identify future needs, it is very important that they be understood and accurately valued. Fervo supports, at the very least, identifying and valuing various resource attributes to support development of an optimal electric infrastructure to meet system needs and policy goals.

Respectfully submitted on January 9, 2023.

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