BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Continue Electric Integrated Resource Planning and Related Procurement Processes.	Rulemaking 20-05-003 (Filed May 7, 2020)

REPLY COMMENTS OF THE INDEPENDENT ENERGY PRODUCERS ASSOCIATION ON THE RULING SEEKING COMMENT ON THE PROPOSED 2023 PREFERRED SYSTEM PLAN AND TRANSMISSION PLANNING PROCESS PORTFOLIOS

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The *Administrative Law Judge's Ruling Seeking Comment on Proposed 2023 Preferred System Plan and Transmission Planning Process Portfolios* (Ruling) attracted comments from nearly 50 parties representing a wide variety of interests. In these reply comments, the Independent Energy Producers Association (IEP) will not attempt to respond to each of the comments submitted by other parties. Instead, IEP will focus on a few themes and significant issues that emerged from the comments. IEP will present its reply in the order the topics were presented in the Ruling, as requested in the Ruling.

I. AGGREGATION OF LSE PLANS

The Ruling noted that differences in the resource information provided by Commission-regulated LSEs and publicly owned utilities (POUs) within the footprint of the California Independent System Operator (CAISO) have resulted in uncertainties that could distort the forecasted need for additional resources.[1] In response, the Alliance for Retail Energy (AReM) expressed a concern that the informational gap could result in Commission-jurisdictional LSEs

[1] Ruling, pp. 7-8.

being required to procure resources to effectively meet the emission mandates of these POUs. AReM suggested that staff should establish separate emissions accounting and goals for publicly owned and Commission-jurisdictional utilities.[2]

AReM's comment underscores the need for greater cooperation in the resource planning process between POUs and Commission-jurisdictional LSEs. AReM's proposed remedy might not be needed if the POUs provided more timely and complete information about their resource plans to the California Energy Commission.

II. PROPOSED PREFERRED SYSTEM PLAN PORTFOLIO

Several themes emerged from the comments on the Ruling's proposed Preferred System Plan (PSP) Portfolio .

First, many parties commented that the proposed PSP Portfolio did not reflect the potential contributions of each party's preferred technology. The limitations on the PSP prevent the Commission from incorporating all of the contributions of the preferred technologies, but the comments serve to emphasize the wide array of technologies that are, or soon will be, serving the needs of California's electricity customers. Various parties urged greater consideration of carbon capture and storage,[3] hydrogen-fueled generation,[4] enhanced geothermal resources,[5] renewable natural gas-fueled generation,[6] compressed air storage,[7] and a few others. In the same

[2] AReM Comments, p. 3.
[3] Calpine Corporation Comments, pp. 6-7.
[4] AES Alamitos/Air Products Comments; Diamond Generating Comments, pp. 2-4; Mainspring Energy Comments, pp. 2-3.
[5] Fervo Energy Comments.
[6] Enchanted Rock Comments.
[7] Hydrostor Comments, p 1.

vein, Sonoma Clean Power Authority (SCP) asked the Commission to create space in planning for emerging technologies to begin to make a commercially viable contribution to grid needs.[8]

As the trade association representing the owners and operators of generating plants using a wide variety of renewable and conventional technologies and the developers of battery storage facilities, IEP does not favor any single technology. But IEP can observe, as it noted in its Comments, that resource diversity provides a hedge against unexpected developments, and the Commission should encourage development of a diverse resource base as much as is feasible. Especially when making a forecast of resource needs for the next 10 years, the Commission should resist the inclination to assume that the future will closely resemble the present. In the modeling and in the PSP, the Commission should include enough flexibility to accommodate the unexpected developments that will inevitably occur, particularly in the later years of the forecast. The Ruling embraced this principle when it said:

> Thus, this ruling suggests that the LSEs continue pursuing all types of projects in their resource solicitations. Similar to the experience with other clean energy technologies such as solar and batteries, cost reductions with economies of scale beyond those already projected may also be possible with some of the newer resource options. In addition, there is inherent value in resource diversity, as the Commission has noted on numerous occasions.[9]

Resource diversity was one of the considerations that led IEP to favor the Least-Cost option for the 25 MMT greenhouse gas (GHG) emission target. The Least-Cost analysis resulted in greater resource diversity, including more pumped hydroelectric storage and in-state wind. On the other hand, the Least-Cost portfolios included no offshore wind, even though offshore wind holds a tremendous potential as a high-capacity factor renewable resource. The joint comments of the Large-scale Solar Association and the Solar Energy Industries Association

[8] SCP Comments, pp. 5-6.
[9] Ruling, pp. 22-23.

(LSA/SEIA) made the interesting suggestion that the PSP should be based on a portfolio that was a compromise between the 25 MMT Core and 25 MMT Least-Cost portfolios, which would include 1.7 GW of offshore wind by 2032, consistent with earlier PSPs.[10] The LSA/SEIA proposal presents an option that is sensitive to the need to control costs while preserving an opportunity for offshore wind or other emerging technologies to mature into commercially viable resource options. IEP could support this proposal.

A. Sensitivity Cases

The Ruling's selection of the High Gas Retirement scenario drew extensive comments from many parties. Unfortunately, some parties did not view this scenario as an opportunity to explore the effect on the transmission system if existing generation located in load centers is no longer available. Rather than viewing the sensitivity case as providing insight into the future needs of the transmission system as reliance on existing gas-fired generation units and combined heat and power facilities decreases, some parties choose to treat this scenario as a road map for compelling the retirement of gas units, contrary to the Legislature's recognition of a continuing need to rely on gas units for reliability during the transition to a reduced carbon electric sector.[11]

The Environmental Defense Fund (EDF), for example, urges the Commission staff to "prioritize conducting an analysis to identify which resources must be procured to facilitate the retirement of fossil resources in disadvantaged communities."[12] This recommendation appears to misunderstand the purpose of both the Transmission Planning Process (TPP) undertaken by the

[10] LSA/SEIA Comments, pp. 8-9.
[11] Public Utilities Code § 454.57(e)(4)(A) directs the Commission and the CEC to provide the CAISO with projections for use in the TPP that are expected to "substantially reduce," by 2035, the need to rely on gas units in local capacity areas. Thus, the Legislature acknowledges that gas units will continue to contribute to grid reliability at least through 2035.
[12] EDF Comments, p. 1.

CAISO and the sensitivity developed as part of the PSP. In the TPP, the CAISO will determine what transmission upgrades are needed to connect the resources included in the PSP with forecasted load. The TPP will identify and authorize upgrades that are needed for reliability, economic benefit, or public policy purposes. For the High Gas Retirements sensitivity transmitted by the Commission, the CAISO will identify the upgrades that would be needed if roughly half of the existing thermal capacity retires.

The CAISO often treats the TPP's sensitivity analysis as informational and does not authorize specific upgrades based on the sensitivity case unless they are also needed for reliability, economic, or public purpose reasons. For example, the study in the 2022-2023 TPP of the effect on transmission reliability of reduced availability of the Aliso Canyon gas storage facility was an information-only study.[13] The TPP does not typically "identify which resources must be procured to facilitate the retirement of fossil resources" or any other procurement of specific supply resources. Although the Commission, in the IRP proceeding, establishes procurement requirements for LSEs, it has not previously ordered LSEs to procure specifically identified resources. Instead, it requires LSEs to meet procurement requirements from categories of resources that enable the LSE to achieve certain goals, particularly the RPS goals and the GHG emission-reduction targets. But each LSE decides which specific resources to procure and include in its integrated resource plan to meet those goals and targets. And the Commission has no authority over the procurement decisions of publicly owned utilities.

The Ruling reflects the need to balance the state's GHG emission-reduction goals with the need to maintain reliability while California makes the transition to an electrified economy.

[13] https://www.caiso.com/Documents/ISO-Board-Approved-2022-2023-Transmission-Plan.pdf, pp. 153-159.

As the Ruling notes, "the issue of how to plan for retention or retirement of fossil-fueled facilities is extremely important to the IRP planning outcomes and quite complex."[14] On September 6, 2022, when demand on the CAISO system reached all-time highs, in-state gas units provided nearly 27,000 MW of supply during the critical net-peak hours. As the Ruling recognizes, the natural gas fleet is still needed to support system and local reliability.[15] Moreover, the flexibility gas units can provide will continue to be needed to support vehicle electrification, which will make a significant contribution to reducing GHG and criteria pollutant emissions throughout California, and particularly in disadvantaged communities exposed to high levels of vehicle exhaust. IEP notes that the transportation sector was responsible for 38% of the state's GHG emissions in 2020 (the in-state electric sector's share was 11%)[16] and nearly 80% of nitrogen oxide emissions.[17] The Ruling notes that the modeling did not find any significant emissions reductions from gas unit retirements,[18] and retirements of California gas units might have the effect of exporting emissions production to states that have less stringent air quality regulation than California. No net reduction of GHG emissions will occur if gas plants in California are forced to retire, only to be replaced in the dispatch order by higher-emitting resources from other states.

As California continues to promote the development of clean energy resources and to lower GHG emissions targets, retirement of gas units will result from economic decisions and

[14] Ruling, p. 28.
[15] Ruling, p. 28.
[16] https://ww2.arb.ca.gov/ghg-inventory-data.
[17] https://www.energy.ca.gov/sites/default/files/2019-07/TRAN-TransformingTransportation_1.pdf.
[18] Ruling, p. 28.

market conditions, as capacity factors of gas units continue to decrease and maintenance costs of aging units increase. The Ruling succinctly describes this process:

> As more and more renewable resources deliver energy to the grid, thermal resources are increasingly depended on for their reliable capacity value at times where the grid is stressed, while their capacity factors will continue to decrease over time as zero marginal cost renewable energy generation offsets them in the CAISO's merit order dispatch stack. This means that there are fewer emissions, both GHG and local pollutants, since the generation is running significantly less. These trends result in gas generation on the margin being more costly per-MWh than many of the renewable resources, because the fixed costs of the natural gas plants are being spread over a smaller production base, which in turn makes their competitiveness decline. This type of trend is a necessary precursor to retirement of thermal generation, as their economics decline.[19]

There is no question that gas-fired plants will continue to be retired, but an arbitrary approach to gas retirements could undermine reliability and have the unintended result of increasing GHG and criteria pollutant emissions, as electric outages lead customers to invest in back-up generators fueled by gasoline or diesel and discourage customers from choosing electric vehicles that can't be charged during an outage.

Middle River Power, citing data from the California Air Resource Board, notes, "in-state generation contributes relatively minor shares of both criteria pollutants and GHG emissions – shares that will likely decrease as additional non-emitting energy comes on line. Consequently, forcing additional retirements of gas-fired generation does not produce emissions benefit commensurate with the associated additional cost."[20]

The CAISO's evaluation of the High Gas Retirements sensitivity could also make a case for retaining generation and storage resources at the current sites of gas-fired units. The sites of existing plants might have particular value due to their proximity to load, and the existing

[19] Ruling, p. 38.
[20] Middle River Power Comments, pp. 4-5.

interconnection capacity and deliverability could create real-world possibilities for replacement resources that are difficult to reflect in modeling assumptions. Existing gas units on those sites might present opportunities to further decarbonization if they are converted to use other fuels or are paired with storage facilities.

The Ruling defines the proper purpose for the CAISO's evaluation of the High Gas Retirement sensitivity: "The purpose of the sensitivity is to identify the transmission resources and costs necessary to plan for potential future retirement of fossil-fueled resources as their economics decline."[21] Thoughtful planning for the inevitable retirement of gas-fired resources will be a key function of both the IRP and the TPP, and the High Gas Retirement sensitivity can inform that planning. The purposes of the sensitivity should be to develop good planning information, not the creation of a road map for arbitrarily compelled retirements of units needed for reliability for all Californians, including those residing in DACs.

B. Production Cost Modeling

IEP has no comments on this portion of the Ruling.

III. PROPOSED PORTFOLIOS FOR CAISO TPP

A. Reliability and Policy-Driven Base Case

Like most other parties, IEP agrees with the Ruling's choice of the 25 MMT GHG emissions target. IEP initially favored the Least Cost portfolio because it allowed for more resource diversity at a lower cost. IEP is intrigued by the suggestion of LSA/SEIA that the PSP should be based on a portfolio that was a compromise between the 25 MMT Core and 25 MMT Least-Cost portfolios, which would include 1.7 GW of offshore wind by 2032, consistent with

[21] Ruling, p. 37.

earlier PSPs. The LSA/SEIA proposal allows for development of offshore wind or other emerging technologies while recognizing the need to control costs.

As IEP stated in its opening comments, any forecast of resource requirements out to 2039 needs to include a considerable recognition of the uncertainties that are necessarily incorporated in that forecast. Inserting a placeholder for 1.7 GW or offshore wind or other technology into the PSP creates room for more resource diversity and the maturation of emerging technologies.

B. Sensitivity Case

As discussed above, IEP understands the Ruling's rationale for proposing the High Gas Retirement sensitivity. The Ruling includes a candid discussion about the challenges of replacing the energy and flexible and reliable capacity provided by existing gas plants with other resource options. The High Gas Retirement scenario will provide additional information about the transmission upgrades that will be required as gas resources are retired and replaced. For planning purposes, the Commission should remain open to advances in generation using hydrogen, renewable natural gas, or carbon capture and sequestration technologies that could allow for the retention of the energy and flexible capacity attributes of existing gas facilities while eliminating or offsetting the current GHG emissions from these plants.

C. Busbar Mapping

IEP supports the proposed busbar mapping and agrees with the staff's approach that considers both development potential and identified commercial interest.

IEP disagrees with stakeholder comments that attempt to modify the Commission's approach to busbar mapping this late in the PSP development cycle. For example, NextEra Energy Resources recommends discounting potential capacity at a number of PSP busbar

locations due to its assessment of project feasibility, among other factors.[22] One of the locations that NextEra recommends for reduction, North of Sacramento, has a project in active development (Fountain Wind) that is currently undergoing an AB 205 permit review process at the CEC. The PSP modeling in this location adequately reflects and prioritizes in-state, low-cost resources with transmission under development.[23]

Development feasibility should be considered as part of the busbar mapping approach. The appropriate time for contributing input on this topic is when the methodology for resource-to-busbar mapping is being developed, and not after a proposed PSP is released. Input by all parties during the methodology development phase will help assure that development potential can be fairly considered.

IV. ANALYSIS RELATED TO MTR PROCUREMENT SUFFICIENCY AND PETITIONS FOR MODIFICATION OF D.21-06-035 AND D.23-02-040

IEP has no additional comments on this portion of the Ruling.

V. PROCUREMENT-RELATED RECOMMENDATIONS

A. Potential Additional Procurement to Allow Extension for LLT Resources

Comments on this topic focused the Ruling's suggestion that the Commission should require procurement of an additional 2,000 MW by 2028 if the Petition for Modification of D.23-02-004 is granted and the target date for procurement of long lead-time (LLT) resources is extended to 2031.

Requiring an additional procurement of 2,000 MW is based on the forecast that additional capacity is needed in 2028, and if that capacity does not come from LLT resources, as currently

[22] NextEra Comments, pp. 4-9.
[23] http://www.caiso.com/Documents/Briefing-ResourcesAvailable-NearTermInterconnection.pdf.

proposed, it will have to come from other resources to avoid reliability concerns. The CAISO agrees with the Commission staff's analysis that concluded that not procuring additional resources for 2028 would leave a very small margin over the 0.1 Loss of Load Expectation (LOLE) reliability standard and that contingencies and forecasting uncertainties could leave the system with a shortfall of 1,550 MW.[24]

Several LSEs, joined by the Public Advocates Office (Cal Advocates), argue that the requested extension should be granted but no additional procurement should be ordered because the staff's analysis shows that the 0.1 LOLE standard will be met in 2028 even if 2,000 MW is not procured. But other parties contend that an extension would penalize LSEs who made the effort to procure the LLT resources in time to meet the 2028 deadline. Several parties suggest that extensions should be granted on a case-by-case basis, and LSEs who made a good faith effort to procure the necessary resources on time should be granted the extension or relieved from any penalties for non-compliance.

IEP agrees with the staff and CAISO that if the extension is granted, an additional procurement of 2,000 MW should be ordered. How compliance with that order is enforced raises some issues of equity. To the extent that some LSEs are on a path that will procure MW from LLT units by 2028, that quantity should be reduced from the 2,000 MW total.

A more difficult question is the treatment of LSEs who procure LLT resources that come online between 2028 and 2031, who are unable to meet the 2028 deadline but don't require an extension to 2031. The reality of bringing an LLT project online is that construction, supplies, labor, and permitting delays may push back schedules from a few weeks to a few months or longer. IEP is concerned that an automatic requirement for LSEs to procure an additional

[24] CAISO's Comments, pp. 4-5.

portion of 2,000 MW for missing the 2028 LLT procurement deadline will undermine the procurement of LLT by LSEs. LSEs do not want to take the financial risk of being burdened with additional procurement. Imposing an additional procurement obligation might lead LSEs to focus on procurement of their shares of the additional 2,000 MW in the near term, rather than continuing efforts to procure LLT resources.

The Commission should be flexible in its enforcement of the LLT procurement obligation. Ideally, LSEs would have an incentive to complete any remaining procurement of LLT resources as soon after 2028 as possible. Any LLT resources that come online in 2028 will help ensure that reliability is maintained.

IEP also reiterates that a significant quantity of capacity is awaiting interconnection and deliverability; a more concerted effort to complete construction of the network upgrades needed to establish deliverability for some units could bring needed MW of capacity online sooner and help mitigate any threat of a shortfall.

B. Proposal on Long-Duration Energy Storage at Existing Natural Gas Generation Sites

The Ruling's proposal to install long-duration energy storage (LDES) facilities at the sites of existing gas-fired resources drew considerable attention.

Some parties saw this proposal as an opportunity for the storage facility to enable the rapid retirement of the co-located gas unit, but that argument ignores the fact that storage, unlike generation facilities, does not produce any energy and requires energy from another source for charging. Cal Advocates questioned why the additional facility was limited to long-duration storage. IEP assumes that energy storage with a minimum 8-hour discharge was proposed because it could come close to providing energy during the morning ramp and the evening net peak, in a pattern similar to a gas plant, at least on a normal day. Footprint requirements might

also have been a consideration. Since gas plant sites are typically fairly compact, it's not clear what other resources could fit into the same site as the gas plant, but in theory other types of resources could also make use of the gas unit's interconnection capacity and deliverability when the plant wasn't running. One option would be to convert the existing facility to run on hydrogen or renewable natural gas or to employ carbon capture and sequestration, since the existing unit (or similar unit) could obviously fit on the site.

Other parties shared IEP's view that this concept could provide an opportunity to make incremental capacity available during the most stressed system conditions. The LDES unit would add capacity when the gas unit experiences derates due to high ambient temperatures, allowing the full capacity of the interconnection to be used to deliver energy during peak demand periods. The storage facility could also be used to reduce the gas unit's GHG emissions, and when the gas unit eventually retires, the storage facility could assume the gas facility's interconnection capacity and deliverability.

The Ruling raises the issue of how such an LDES addition should be counted for Net Qualifying Capacity (NQC) purposes. After reviewing other parties' comments, IEP is persuaded that the first option proposed in the Ruling should be adopted. That alternative would calculate the incremental capacity of the storage facility as the difference between the maximum interconnection value and the average capacity that the gas unit provided during historic reliability events. This option has the advantage of simplicity, being easy to calculate, and being based on the gas unit's actual performance during the reliability events when the storage facility can provide its greatest value to the system.

VI. PROPOSED RELIABILITY FRAMEWORK FOR IRP

A. Background and Definitions

IEP has no additional comments on this portion of the Ruling.

B. Proposal

IEP notes that other parties shared IEP's concern that the reliability framework would be limited to integrated resource planning. Having different reliability frameworks for the IRP and the Resource Adequacy program could exacerbate the historical separation between the two programs at a time when greater coordination is needed. The Commission should consider making the effort to develop a common reliability framework that could apply to both the shorter-term perspective of the Resource Adequacy proceeding and the longer-term horizon of the IRP proceeding.

VII. Funding for Continued Consulting Support to Commission Staff on IRP

IEP has no additional comments on this portion of the Ruling.

Respectfully submitted,

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