

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

Order Instituting Rulemaking to Develop an
Electricity Integrated Resource Planning
Framework and to Coordinate and Refine
Long-Term Procurement Planning
Requirements.

Rulemaking 16-02-007
(Filed February 11, 2016)

**COMMENTS OF THE CALIFORNIA INDEPENDENT SYSTEM
OPERATOR CORPORATION**

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I. Introduction

The California Independent System Operator Corporation (CAISO) hereby provides comments in response to the Ruling of the Assigned Commissioner and Administrative Law Judge Seeking Comment on Policy Issues and Options Related to Reliability (Ruling) issued in the integrated resource planning (IRP) proceeding on November 16, 2018. The CAISO appreciates the opportunity to provide comments on addressing emerging electricity market issues in the near-to-medium term that may affect overall electric system reliability. The CAISO is encouraged that this Ruling specifically considers reliability questions.

II. Discussion

The Ruling raises important questions regarding the near-to-mid-term reliability issues California is facing. In the section below, the CAISO responds to selected questions posed in the Ruling. The relevant questions from the Ruling are reproduced prior to the CAISO's responses.

Question 1: Does the California electricity system face a near-or medium-term reliability challenge? If so, describe how you see the nature of the problem.

The most significant near- to medium-term reliability challenge facing California and the Commission is to develop a plan to transition from the current electric system to one that maintains reliability all hours of the year while meeting the greenhouse gas (GHG) emissions requirements in Senate Bill (SB) 100 and other policy requirements imposed by state law. The Ruling captures this challenge well in noting that "California is currently entering an era of

tighter generation supplies than we have experienced in recent years”¹ due to both planned and unplanned retirements. Importantly, the Ruling notes:

While we have abundant in-state and imported renewable resources, resources available to integrate those renewables are constrained in multiple ways. Thermal generation resources are on the decline, either for environmental and environmental justice reasons or because of their economics in the current market environment. Hydroelectric resources are finite. Storage resources, though becoming more abundant, are still expensive and limited in size and availability.²

In addition to the Ruling’s observations, the renewable resources include a large amount of supply from behind-the-meter sources, which do not have the same production profiles or controllability characteristics as the resources they displace. As a result, there are concerns that energy production and essential reliability services may not be available from the emerging mix of resources when needed to meet the system needs for all time periods and under a robust range of conditions. Understanding those periods and conditions of exposure will be critical to developing a reliable transition plan.

The Ruling also notes that “the availability of imports is on the decline.”³ As a result, the Commission should analyze system conditions that consider tighter supply conditions externally, which could affect import levels over long periods (*i.e.*, days to seasons). In addition, a robust analysis should incorporate conditions that have previously not been studied, such as smoke or monsoonal cloud cover, which can effect resource supply availability and capability, in particular, renewable resources.⁴ For California and the Commission to meet long-term policy goals, it is imperative that reliability is maintained during all hours of the year, especially as the state moves to replace the fossil-fuel based fleet with GHG-free, variable, renewable, and distributed and availability-limited resources, which have very different attributes than the

¹ Ruling, p. 3.

² Ruling, p. 4.

³ Ruling, p. 4.

⁴ See the marked decline in solar energy production on December 6, 2018, as a recent example. On December 6, 2018, grid-connected solar resources peak production just over 2,000 MW.

http://content.aiso.com/green/renewrpt/20181206_DailyRenewablesWatch.pdf. Only three days prior, on December 3, 2018, peak solar production topped 8,000 MW.

http://content.aiso.com/green/renewrpt/20181203_DailyRenewablesWatch.pdf. Solar production averaged above 5,000 MW during peak production hours during the remainder of the week.

resources they displace.

The CAISO has and will continue to offer technical support to the Commission through its engineering and modeling expertise. For example, the CAISO provided detailed modeling of storage and preferred resource procurement options in its Moorpark Sub-Area Local Capacity Alternative Study and Supplemental Local Capacity Assessment for the Santa Clara Sub-Area.⁵ These studies provided critical information to allow Southern California Edison Company to conduct procurement tailored to meet the unique needs of the local capacity areas in question.

Question 2: Is the resource adequacy or the IRP proceeding (or a mix of both) the appropriate venue for addressing these types of reliability concerns? Explain your rationale.

The resource adequacy and IRP proceedings serve critical roles in maintaining reliability, but have different objectives. The resource adequacy program serves to retain existing resources in the near-term, even under a multi-year local resource adequacy procurement paradigm. The Commission should expand the resource adequacy program to include multi-year procurement requirements for system and flexible resources. Expanding the resource adequacy program in this manner would significantly mitigate any near-term reliability issues by retaining the resource fleet necessary to serve load.

In contrast, the IRP proceeding is designed to (1) guide Commission procurement of new resources and articulate options for transitioning to a new resource portfolio to meet policy requirements under SB 100; and (2) address near-, medium-, and long-term reliability issues that must be met with new procurement. As a result, the IRP proceeding is better suited to address generator retirements, increasing renewable integration and flexible generation needs, and import supply availability. Moreover, the IRP proceeding has the modeling tools to balance reliability needs with other policy objectives such as ratepayer costs, disadvantaged community impacts, and GHG reduction.

⁵ CAISO, Moorpark Sub-Area Local Capacity Alternative Study, August 16, 2017, https://www.caiso.com/Documents/Aug16_2017_MoorparkSub-AreaLocalCapacityRequirementStudy-PuentePowerProject_15-AFC-01.pdf; and Santa Clara Sub-Area Local Capacity Technical Analysis, June 18, 2018, <http://www.caiso.com/Documents/2023LocalCapacityTechnicalAnalysisfortheSantaClaraSub-Area.pdf>.

Question 3: Are potential solutions to the problems you describe in answer to Question 1 already under consideration? If so, where?

The CAISO believes the IRP proceeding can be leveraged more effectively to develop mid- and longer-term plans to reliably transition the electric sector to meet SB 100 and other policy requirements. Unlike the Commission’s Long Term Procurement Plan (LTPP) proceeding, which primarily focused on reliability needs ten years out, the IRP proceeding should provide a bridge between the resource adequacy program procurement and the long-term portfolios intended to meet SB 100 and other policy requirements. To provide this bridge to the new resource portfolio, the IRP proceeding should focus on, and apply, greater modeling rigor to the near- and medium-term years, in addition to the longer-term. The CAISO applauds the recent improvements in modeling and input assumptions, which will lead to more credible and realistic modeling outputs. The CAISO also appreciates that Energy Division staff is releasing key information, thus allowing other interested parties, like the CAISO, to provide their own reliability assessments and modeling.

Question 5: Is the CAISO market structure equipped to handle the challenges you identified in response to Question 1? Why or why not?

The CAISO is at the forefront of identifying and analyzing the reliability issues noted in response to Question 1.⁶ A core competency and responsibility of the CAISO is to plan and

⁶ The CAISO provides a non-exhaustive list of its relevant analyses:

- “Duck curve” - http://www.caiso.com/Documents/FlexibleResourcesHelpRenewables_FastFacts.pdf;
- *Managing an Evolving Grid* - <http://www.caiso.com/Documents/ManagingAnEvolvingGrid-FastFact.pdf>;
- *Using Renewables to Operate a Low-Carbon Grid* - FAQ: <http://www.caiso.com/Documents/UsingRenewablesToOperateLowCarbonGrid-FAQ.pdf> and full report: <http://www.caiso.com/Documents/UsingRenewablesToOperateLow-CarbonGrid.pdf>;
- *Matching Time-of-Use Periods to Address Grid Needs* – Presentation at Commission workshop http://www.caiso.com/Documents/CaliforniaISOProposedTime-of-UsePeriods-CPUC_2_26_2016_9am.pdf;
- Risk of early retirement analysis (special study in the 2016-2017 Transmission Planning Process): <http://www.caiso.com/Documents/SupplementalSensitivityAnalysis-Risksofearlyeconomicretirementofgasfleet.pdf>;
- *Increased Capabilities for Transfers of Low Carbon Electricity between the Pacific Northwest and California Informational Study* (special study in the 2018-2019 Transmission Planning Process): <http://www.caiso.com/Pages/documentsbygroup.aspx?GroupID=361EBA1A-5E76-4315-9EC7-FB20C161A6AE>;
- Testimony of John Goodin and Nebiyu Yimer, California Independent System Operator Corporation, “Corrected Chapter 6: Availability Limited Resources,” submitted July 10, 2108 into R.17-09-020;

evolve its electricity markets to ensure and maintain reliability at all times. The CAISO is continually evaluating and evolving its market rules, operations, and transmission planning to address increasing renewable integration needs, changes in the generation fleet, and other changes affecting the electric grid.

The Ruling argues that the “system is becoming more ‘right-sized’ with less excess capacity” but “[b]ecause of this supply situation, it becomes harder and harder to avoid questions of whether our market structure is equipped to meet our electric resource needs, in light of ambitious GHG goals.”⁷ Given the system is becoming more “right sized,” it is important to understand how right sizing affects capacity and energy markets and what responsibilities exist for the Commission and the CAISO under a system with less excess capacity. The state of California and local regulatory authorities have the primary responsibility for establishing and enforcing capacity procurement requirements; whereas, the CAISO has the primary responsibility for energy—balancing supply and demand—and providing certain short-term reliability services. Appropriately, the CAISO has limited, short-term backstop capacity procurement authority that is triggered only when load-serving entities provide capacity resources that are insufficient or ineffective to meet the energy and reliability needs of the system. But resource adequacy and procurement remains the primary responsibility of the state and the Commission, not the CAISO.

The Ruling correctly notes that capacity margins have declined due to a variety of factors, including the impacts of Commission policy to “right size” procurement.⁸ With a “right sized” resource portfolio, the CAISO depends on the Commission and other local regulatory authorities to implement rules and procedures to ensure that advanced capacity procurement occurs and is sufficiently robust to serve the system energy needs and provide reliability

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- *Moorpark Sub-Area Local Capacity Alternative Study*, August 16, 2017, https://www.aiso.com/Documents/Aug16_2017_MoorparkSub-AreaLocalCapacityRequirementStudy-PuentePowerProject_15-AFC-01.pdf;
 - *Local Capacity Requirements Potential Reduction Study* (special study in the 2018-2019 Transmission Planning Process): <http://www.aiso.com/planning/Pages/TransmissionPlanning/2018-2019TransmissionPlanningProcess.aspx>; and
 - Flexible resource adequacy criteria and must offer obligations stakeholder initiative - <http://www.aiso.com/informed/Pages/StakeholderProcesses/FlexibleResourceAdequacyCriteria-MustOfferObligations.aspx>.

⁷ Ruling, p. 4.

⁸ See for example, California Public Utilities Commission, *Decision Authorizing Long-Term Procurement for Local Capacity Requirements Due to Permanent Retirement of the San Onofre Nuclear Generating Stations*, D.14-03-004, March 14, 2014.

services. With a more capacity constrained fleet, the CAISO faces higher risks to maintain system reliability when unexpected events, such as extreme weather and large scale wildfires, occur. It also means more individual resources will be pivotal suppliers with attendant market power, which could result in higher electricity costs for ratepayers. The Commission’s capacity procurement programs and policies must address this challenge head on. It is not appropriate to simply defer procurement to the CAISO and leverage the CAISO’s short-term backstop procurement authority while excess supply and certain resource attributes grow thin.

The CAISO’s market structure does not inhibit “right sizing” nor does it prevent California from achieving its energy policy goals. Rather, the CAISO partners with the state of California and the Commission to achieve its policy goals while maintaining reliability by providing engineering studies and analysis, along with input and insight regarding the system’s energy and reliability service needs. The CAISO does this so that the Commission can make informed decisions and address the system’s procurement needs. The CAISO also operates a thorough and structured policy and market design initiative process that strives to keep the CAISO market structure effective, efficient, and capable of operating the system reliably in response to, and in anticipation of, the evolving electric grid. The CAISO believes its market structure, along with pending changes to that structure, will meet the reliability challenges of the transforming grid, assuming the state and the Commission continue to secure the right resources with the right attributes over time.

The state’s capacity procurement processes are designed to work in concert with the CAISO’s energy markets. State procurement efforts should provide sufficient resources to allow the CAISO markets to optimize energy dispatch while maintaining reliability. On the energy side, the CAISO has several mechanisms for market power mitigation as well as metrics used by its Department of Market Monitoring to gauge the level of competition in the CAISO markets. Although the CAISO markets are overall competitive,⁹ the CAISO is considering additional improvements.¹⁰ For the CAISO’s markets to remain competitive, load-serving entities must procure resources in sufficient quantity and with the necessary characteristics to adequately meet system and local area needs. For example, the Commission must ensure that availability-limited resources—*i.e.*, those resources that can only provide energy in a limited subset of hours, days,

⁹ Department of Market Monitoring, 2017 Annual Report on Market Issues and Performance, June 2018, p. 151.

¹⁰ See <http://www.aiso.com/Documents/IssuePaper-ResourceAdequacyEnhancements.pdf>.

months—are available when are where needed, and that their capacity counting values and qualifications reflect their limitations.

Similarly, the Ruling correctly notes that the CAISO currently does not have market power mitigation measures for system market power.¹¹ One barrier to developing such a mitigation measure is the significant amount of non-resource specific energy in the CAISO markets. The CAISO seeks to collaborate further with the Commission on developing new criteria and rules for its procurement efforts, both in the resource adequacy and IRP venues, to ensure the Commission’s capacity procurement programs and policies are well-informed, and provide effective and reliable capacity to the transforming electric grid.

III. Conclusion

The CAISO appreciates this Commission’s focus on addressing near and mid-term reliability issues and looks forward to cooperating the Commission to ensure these issues are addressed in a an efficient and cost-effective manner.

Respectfully submitted,

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¹¹ Ruling, p. 5.