

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

Order Instituting Rulemaking to Establish  
Policies, Processes, and Rules to Ensure Safe  
and Reliable Gas Systems in California and  
Perform Long-Term Gas System Planning.

Rulemaking 20-01-007  
(Filed January 16, 2020)

**COMMENTS OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR  
CORPORATION ON AMENDED SCOPING MEMO TRACK 2a SCOPING  
QUESTIONS 2.1(b) – 2.1(k)**

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**I. Introduction**

Pursuant to the May 5, 2022 Administrative Law Judge’s Ruling Seeking Comments on Scoping Memo Track 2a Scoping Questions 2.1(b)-2.1(k), the California Independent System Operator Corporation (CAISO) submits comments on selected Track 2a scoping questions contained in the January 5, 2022 Amended Scoping Memo (Scoping Memo) issued by Assigned Commissioner Rechtschaffen.

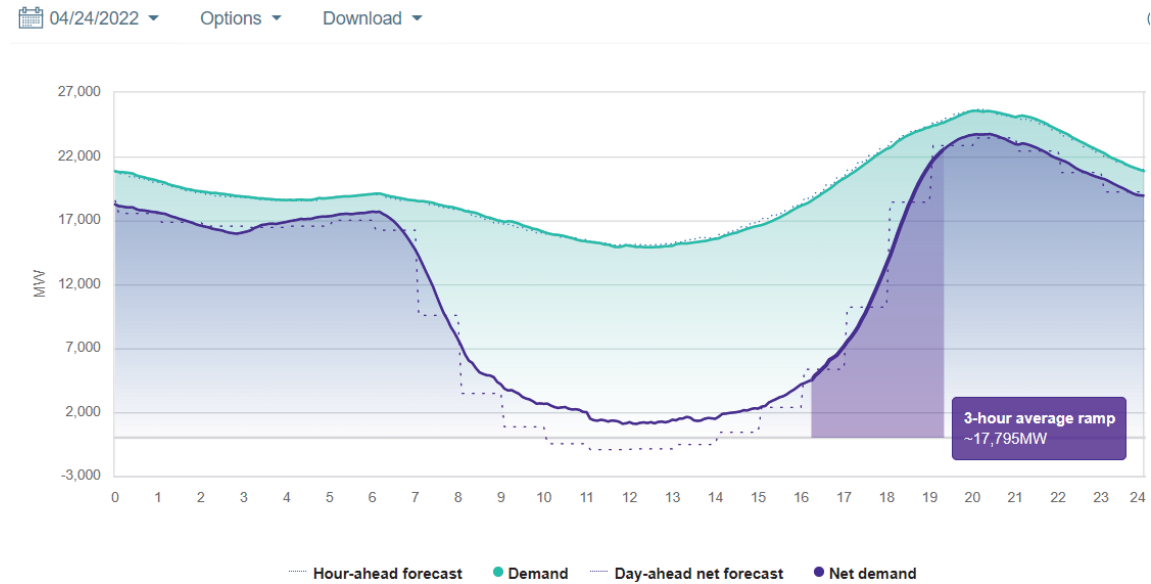
The CAISO appreciates the opportunity to comment on Track 2 of this proceeding, which will develop and implement a long-term gas planning strategy. The gas and electric sector are inter-dependent. The CAISO recommends the Commission align its efforts to perform long-term planning for safe and reliable natural gas systems with the planning processes administered by the CAISO, other state regulatory agencies and local regulatory authorities, and with other California Public Utilities Commission (Commission) proceedings addressing gas and electric matters.

**II. Discussion**

The CAISO market has experienced a rapid transformation driven by new sources of electric supply and changes in electricity usage patterns. During this energy transition, the level of the intra-day ramp—a period of rapidly increasing or decreasing electricity demand over a short period of time—has steadily grown . For example, the average three-hour ramp on April

24, 2022 was almost 18,000 MW, coinciding with a rapid decrease in both grid-connected and behind-the-meter solar generation as shown in Figure 1 below.

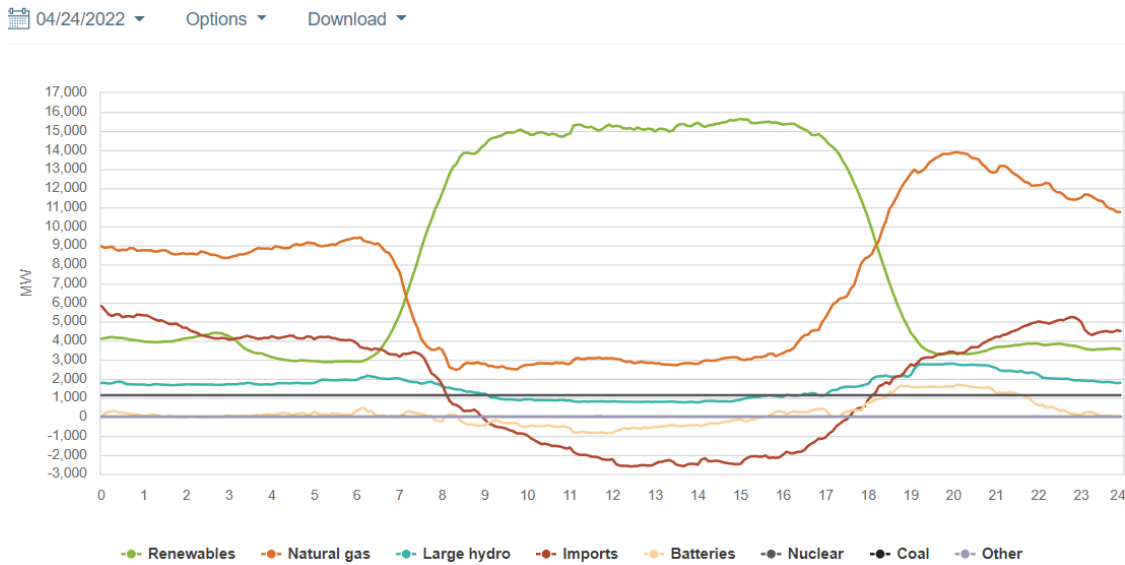
**Figure 1: 18,000 MW Average Three-Hour Ramp on April 24, 2022**



Source: CAISO.com

As electric demand served by behind-the-meter solar generation quickly returns to the grid and utility scale solar ceases to operate, natural gas resources largely backfill this need. Figure 2 depicts electric supply by fuel type in the CAISO balancing authority area for April 24, 2022 and reflects the role of natural gas-fired generation to meet the three-hour ramp.

**Figure 2: Generation by Fuel Type for April 24, 2022**



Source: CAISO.com

Although natural gas usage may be decreasing overall, intra-day needs requiring the use of natural gas resources to balance supply and demand may remain high, and the needs are compressed into only a few hours.

At the operational level, the CAISO coordinates directly with natural gas utilities to ensure the CAISO’s day-ahead awards are feasible. This means the CAISO can optimize the hourly gas burn for the gas-fired fleet to respect gas utilities’ guidance on gas system reliability limitations for the following day. To be clear, the CAISO does not “pick” specific gas-fired generators; rather, it uses its optimization algorithm to derive the best electric generation plan. The algorithm considers a myriad of generator-specific characteristics (*i.e.*, operational costs including gas and greenhouse gas costs, physical location and operational characteristics) to optimize the entire generation fleet in CAISO’s footprint, while respecting the physical limits of the grid and serving load reliably.

Given the interdependencies between the gas and electric sector, the CAISO is also actively involved in major state and Commission energy infrastructure planning processes with which this proceeding should coordinate. For example, the Commission and the California Energy Commission (CEC) through the Senate Bill (SB) 100 process collaborated with the CAISO to provide the foundational inputs to support the CAISO in developing a 20-Year

Outlook on transmission.<sup>1</sup> Specifically, the analysis assumed no natural gas storage capacity at the Aliso Canyon natural gas storage facility, significant gas-fired generation retirement, high electrification, and aggressive development of off-shore wind.<sup>2</sup> In this conceptual plan, the regulatory agencies also specified the need for gas-fired resource retirements within defined disadvantaged communities (DACs).<sup>3</sup> Although the CAISO's 20-Year Outlook provided one snapshot of a possible future, many of the assumptions regarding use of natural gas for electric generation remain undecided. For example, the Commission is still considering the fate of the Aliso Canyon storage facility,<sup>4</sup> and although the integrated resource plan (IRP) proceeding is scheduled to discuss significant unplanned gas-fired generation retirement scenarios, it has not yet begun them.<sup>5</sup> In the meantime, the IRP modeling assumes the vast majority of gas-fired resources will remain in service. Similarly, the California Air Resources Board (CARB) staff's Proposed Scenario from its Draft Scoping Plan Update largely retains existing gas-fired generation but for planned retirements and depends on 10 GW of new gas-fired generation to support transportation electrification and maintain reliability.<sup>6</sup> These preliminary planning efforts reflect that gas usage may persist in the future and, under high electrification, today's non-core gas users (*i.e.*, electric generation) may increasingly be needed serve core (*i.e.*, residential and small commercial) needs.

The Commission should strive to bridge any gap between conceptual and actionable plans, and to align assumptions across these important processes. In addition to the SB 100 effort, the Commission should ensure coordination with the CEC in its recently launched

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<sup>1</sup> CAISO, *ISO 20-Year Transmission Outlook*, May 2022. Available at:

<http://www.caiso.com/InitiativeDocuments/20-YearTransmissionOutlook-May2022.pdf>.

<sup>2</sup> California Energy Commission, *SB 100 Starting Point for the CAISO 20-year Transmission Outlook*, September 13, 2021. Available at: <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=21-SIT-01>.

<sup>3</sup> CAISO, *ISO 20-Year Transmission Outlook*, May 2022, p. 20.

<sup>4</sup> *Order Instituting Investigation pursuant to Senate Bill 380 to determine the feasibility of minimizing or eliminating the use of the Aliso Canyon natural gas storage facility located in the County of Los Angeles while still maintaining energy and electric reliability for the region*, I.17-02-002, February 9, 2017.

<sup>5</sup> *Decision Adopting Preferred System Plan*, R.20-05-003, February 15, 2022, p. 133.

<sup>6</sup> Rajinder Sahota, Deputy Executive Officer for Climate Change and Research, California Air Resources Board, presentation to the California Energy Commission, May 24, 2022 Business Meeting Agenda Item 2: Information Item on California Air Resources Board (CARB) Draft 2022 Climate Change Scoping Plan, at approximately 22 minutes. Recording available at: [https://energy.zoom.us/rec/share/IXQEm0CRvxzo1P83AYOUq8OTVs7k-SVTi\\_ofuDjfW1pjF9ZkGXlg\\_PZYqMKrBGl\\_uWbfo8M7m3x\\_Sn3G](https://energy.zoom.us/rec/share/IXQEm0CRvxzo1P83AYOUq8OTVs7k-SVTi_ofuDjfW1pjF9ZkGXlg_PZYqMKrBGl_uWbfo8M7m3x_Sn3G)

informational proceeding on decarbonizing the gas system.<sup>7</sup> Topics in the CEC’s informational proceeding include developing gas demand forecasts at the granularity needed for gas system planning and reliability assessments; and considering how electric planning can adequately capture interdependencies between the gas and electric system; and extreme weather events. These assessments, in addition to the electric demand forecasting the CEC conducts for the state of California, are critical for modeling and answering questions in this Scoping Memo.

Many of these modeling outputs are also critical for CAISO planning processes. For example, in the 2022-2023 Transmission Planning Process (TPP), the CAISO intends to conduct a special study on Aliso Canyon closure and another on the impacts of higher levels electrification.<sup>8</sup> Both of these studies depend on detailed demand forecasts at an hourly granularity and locational specificity down to the busbar level in order to conduct the power flow studies. The CAISO needs similarly detailed inputs for its local area studies, which include an assessment of the ability of battery storage resources to replace existing generation (including gas-fired resources) to guide load serving entity procurement.<sup>9</sup> The CAISO’s detailed, engineering-based analyses find that in certain local areas (*i.e.*, load pockets) there may be limited generation available to charge battery storage resources. In other words, some local areas may be limited in their ability to utilize battery storage resources to replace existing generation in an effective and reliable manner. The CAISO’s ability to conduct such analyses with actionable outcomes depends on the quality and specificity of assumptions and state direction.

### **A. Responses to Scoping Memo Questions**

The CAISO provides responses to selected questions (reproduced in bold font) from the Scoping Memo.

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<sup>7</sup> California Energy Commission, Order Instituting Informational Proceeding on Gas Decarbonization, 22-OII-02. <https://www.energy.ca.gov/proceedings/energy-commission-proceedings/order-instituting-informational-proceeding-gas>

<sup>8</sup> CAISO, *2022-2023 Transmission Planning Process Unified Planning Assumptions and Study Plan*, March 31, 2022, p. 76. Available at: <http://www.aiso.com/InitiativeDocuments/FinalStudyPlan-2022-2023TransmissionPlanningProcess.pdf>.

<sup>9</sup> See for example: CAISO, *2023 Local Capacity Technical Study*, April 28, 2022, p. 25. Available at: <https://www.aiso.com/Documents/Final2023LocalCapacityTechnicalReport.pdf>

**Question 2.1(b): What criteria should the Commission use to determine whether aging transmission infrastructure should be repaired or replaced when a gas utility requests ratepayer funds?**

As described above, the gas and electric sectors are interdependent. There are gas-fired generators connected to both the gas transmission and distribution systems. The Commission should consider gas-fired generation needs under high electrification as today's non-core gas users (*i.e.*, electric generation) begin to serve more core (*i.e.*, residential and small commercial) needs. The Commission should coordinate with the CAISO, other state agencies and authorities (such as the Los Angeles Department of Water and Power) and their planning processes, and with other Commission proceedings on both gas and electric matters.

**Question 2.1(b)(iii) How should the cost to repair or replace the infrastructure be balanced against its reliability benefits?**

Reliability benefits should include electric reliability.

**Question 2.1(c) What criteria should be used to determine when declining demand can enable transmission lines to be de-rated or decommissioned without harming reliability?**

Although gas usage may be decreasing overall under current conditions, the electric sector's intra-day gas needs may still remain high to support renewable integration, and they will be compressed into only a few hours. As described above, the CAISO recently experienced an average three-hour ramp of almost 18,000 MW on April 24, 2022. Because gas needs can be concentrated into a short period of time, storage and pipeline capacity is needed to support demand during that ramping period.

In the future, high electrification needs such as transportation electrification and increased fuel switching from gas to electric for residential and small commercial uses may actually increase gas needs to support electric reliability. In other words, non-core electric generation customers may increasingly serve core needs. As noted above, it is critical for the Commission to coordinate with the CAISO, other state agencies and authorities (such as the Los Angeles Department of Water and Power) and their planning processes, and with other Commission proceedings on both gas and electric matters to ensure assumptions and state policy

are aligned and that sufficient modeling granularity is available to conduct analyses with actionable outcomes. Lastly, reliability should include electric reliability.

**Question 2.1(d) What criteria should the Commission use to determine whether aging distribution infrastructure should be repaired or replaced when a gas utility requests ratepayer funds?**

See response to Question 2.1(b).

**Question 2.1(d)(ii) What community characteristics, such as designation as a disadvantaged community (DAC), should be considered?**

The Commission should align these characteristics with other major planning processes so assumptions are consistent and impacts can be uniformly assessed.

**Question 2.1(e)(ii) What community characteristics, such as designation as a DAC, should be considered?**

See response to question 2.1(d)(ii).

**Question 2.1(e)(vii) What planning and procedures are necessary to ensure that there is sufficient local electric capacity available to reliably serve customers that move off the gas system?**

See response to question 2.1(c).

**Question 2.1(f) What infrastructure is needed to fulfill the needs of customers who are likely to remain on the gas system the longest, such as electric generators or difficult-to-electrify industrial users?**

See response to question 2.1(c).

**Question 2.1(g) What should be the role of existing natural gas storage facilities as a component of gas utilities' infrastructure portfolio?**

See response to question 2.1(c).



**Question 2.1(i) Should the Commission require the achievement of certain milestones (e.g., replacement energy resources are built and operational) before a significant natural gas asset is derated or decommissioned to ensure energy reliability, equity, workforce planning, and other policy goals are maintained and/or achieved throughout this transition?**

The Commission should require, at minimum, replacement energy (or alternatives such as new electric transmission infrastructure) is operational before current assets are derated or fully decommissioned. See also response to question 2.1(c).

### **III. Conclusion**

The CAISO appreciates the opportunity to provide comments on this important matter and looks forward to working with the Commission and parties.

Respectfully submitted

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