

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

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.

Investigation 17-02-002
(Filed February 9, 2017)

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

The California Independent System Operator Corporation (CAISO) is filing these informal comments pursuant to the Administrative Law Judge's Ruling Noticing November 17, 2020 Workshop stating that informal comments must be submitted to the service list by December 4, 2020. The CAISO provides answers to the questions posed in Attachment A.

Attachment A

In addition to the general solicitation for input on the information presented and discussed at the November 17, 2020 stakeholder workshop for Phase 3 of the Aliso OII, the Project Team specifically requests feedback and on the fourteen items listed below. The **bold** font denotes items of highest significance and priority.

The Commission's procedures already include an opportunity for workshop participants to submit written comments, which become part of the record of the proceeding. Stakeholders can include discussion of these topics in the body of the comments they file, or they can add text to this sheet and attach it to their submission.

Commenters should feel free to include as many or as few of the questions in their comments as they choose. There is no requirement or expectation that every commenter answer every question.

Thank you in advance for your assistance.

1. Is our approach to modifying the Phase 2/IRP datasets reasonable?

The CAISO has the following comments:

- Input assumptions appear to focus on the CAISO Balancing Authority Area (BAA). However, input assumptions for the LADWP were not discussed as part of FTI presentations. Since the Aliso Canyon serves both electric generating facilities in the CAISO and LADWP BAAs, it is important to include input assumptions for both BA areas.
- Electric Vehicle (EV) buildout – it is important to include the assumptions for EV buildout per Governor Newsom’s Executive Order. The increase in the EV charging load will be added to the electric grid, potentially at the hours where the electric grid experiences daily peak in the early evening hours where consumers are likely charging their electric vehicles.
- Assumptions of using SERVM – TEPPC 2026 Common Case is rather dated. The CAISO recommends using the latest WECC 2030 Anchor Data Set (ADS) Production Cost Model (PCM). In addition, this case needs to be updated with future resources within California to be consistent with the CPUC IRP resource assumptions.
- Modeling of electric generating resources needs to be consistent with the “CPUC Staff Report: Modeling Assumptions for the 2020-2021 TPP Release 1 (for *Base Portfolio*) at ftp://ftp.cpuc.ca.gov/energy/modeling/Modeling_Assumptions_2020_2021_TPP-Report-Release1.pdf and for CPUC Sensitivity Portfolios at ftp://ftp.cpuc.ca.gov/energy/modeling/Modeling_Assumptions_2020_2021_TPP-Report-Release2.pdf.
- Sources for assumption of hydro generation output needs to be provided, particularly for the winter load conditions as the hydro resources may not be as available as in the spring and the summer.
- The CPUC Phase 2 study for the Aliso Canyon OII includes minimum gas-fired generation in its 2025 and 2030 winter PCM and hydraulic studies. Please coordinate with the CPUC to include the same assumption for minimum gas-fired generation as modeled in the CPUC Aliso Canyon Phase 2 study.

2. Is our exclusion of upgrades to SCG’s Northern Zone from our base assumptions reasonable?

The CAISO concurs with this approach as the upgrades have not yet been approved by regulatory agencies. In addition, the approval of such upgrades are uncertain at this time.

3. Is our selection of 2027 and 2035 as the years to analyze reasonable? If not, is there a preferred option?

The CAISO would prefer using the years 2030 and 2045 rather than 2027 and 2045 due

to the following reasons:

- Using 2030 can provide study results to be compared with the CPUC Phase 2 long-term study results of 2030 timeframe.
- Using 2045 as the long-term planning horizon as indicated in the CPUC I.17-02-002 Scoping Memo.

4. Is our exclusion of impacts in 2027 and 2035 attributable to potential changes to Resource Adequacy rules reasonable?

The CAISO recommends running sensitivity assessment with the potential changes to Resource Adequacy rules due to recent reliability outcomes. The sensitivity is needed if the potential changes have high degree of being implemented.

5. Are the “key uncertainties” described in the materials associated with the workshop reasonable?

“Key uncertainties” that were mentioned in the workshop presentation include potential changes to RA and system planning, EV buildout, and potential modernization of SoCal Gas’s system. These appear to be reasonable. These uncertainties should be explored and studied as sensitivities. In addition, the CAISO would like to know whether stochastic analyses that include multiple renewable resource profiles and load forecast sensitivities will be evaluated as part of FTI’s production cost model study.

6. Is the composition of the four investment options that are specified reasonable? If not, is there an option that is preferred for further analysis?

On a high level, the four investment options (i.e., gas transmission, demand-side gas, DR/storage mix, generation queue pro-rata) appear to be reasonable. However, the CAISO has further comments in the following:

- Gas transmission: for this option, the CAISO suggests evaluating regulatory permitting feasibility as well as construction feasibility
- Demand-side gas: for this option, FTI Consulting mentioned that a combination DR, EE, and building electrification will be evaluated. The CAISO suggests that the assumptions for DR, EE and building electrification be consistent with the CPUC IRP assumptions as well as the CEC demand forecast for building electrification.
- DR/storage mix: the CAISO suggests that the assumptions for DR/storage mix need to be consistent with the CPUC’s latest IRP study assumptions and RA procurement process.
- Generation queue pro-rata: because only a fraction of the proposed projects in the generation queue materialize after receiving the Power Purchase Agreement (PPA) approval from the CPUC, the CAISO recommends that this process be coordinated with the CPUC IRP and RA procurement process for realistic assumptions.

In addition to the above, the CAISO also suggests that additional investment option includes review of potential transmission upgrades needed in the local capacity areas of the LA Basin and the combined San Diego – Imperial Valley to meet NERC’s reliability

criteria if significant gas-fired generation is assumed to be retired and replaced by other resources in the local capacity requirement (LCR) areas. The CAISO is aware of the reason that FTI Consulting mentioned that transmission options would require long permitting process and for this reason that this option is not considered as an investment option. However, depending on the ultimate IRP and RA procurement from the CPUC, further transmission upgrades may be needed to maintain reliability per established NERC reliability criteria. Potential risk of a long permitting process should be included as part of this potential option as well.

7. Please identify any of the specific assumptions or inputs discussed during the workshop or provided in the supporting materials that are unreasonable or that should be replaced with a preferred alternative.

Please see CAISO's comments for Question 6 above.

8. Is our approach to allocating the modeled gas shortfall based on unit heat rates reasonable? If not, is there a preferred approach?

The CAISO has mixed opinions on this approach. The following provides further explanation:

- Allocating the modeled gas shortfall based on unit heat rates suggests that the units with the highest heat rate, and hence the most inefficient units, should be the first to be curtailed. This appears reasonable based on the production cost simulation study. However, some of the more recently installed gas-fired generation that has higher heat rate, such as combustion turbines or peakers, than the combined cycled gas-turbine generating units are actually needed in providing daily ramping needs when the solar generation output is declining and unavailable at early evening hours.
- Due to the above concern on the ramping needs for serving loads when solar generation starts to decline to be non-available at early evening hours, the CAISO suggests that FTI Consulting considers curtailment of old and inefficient gas-fired generation rather the new combustion turbine generating units that are needed for ramping.

9. Is our approach to define the fifth investment option after modeling and analyzing the first four reasonable?

The fifth option is described as to be determined by the CPUC and the Project Team after analysis of the first four options appears to be reasonable. The CAISO also suggests that in addition to the CPUC and the Project Team, suggested options from the stakeholders be considered as well after the analysis for the first four options is completed.

10. How should we value reductions in carbon emissions in Workstream 2?

No comment.

11. Aside from reductions in the cost of delivered energy, what benefits should we capture in the Workstream 2 analysis of the investment options?

Other benefits for the considered investment options should include the following:

- Whether the considered options provide the same level of reliability metrics in serving loads or better.
- Whether the considered options can support renewable integration, as well as providing the electric grid the ability to provide charging capability for the energy storage under RA procurement consideration, and EV buildout by 2035.

12. Aside from the capital and financing costs to build new infrastructure, what costs should we capture in our Workstream 2 analysis of the investment options?

Other costs should include: (a) permitting cost, including cost for alternative options to meet permitting requirements; (b) ongoing cost (i.e., maintenance and renewal of procurement of resources) to support considered options. It is also assumed that applicable taxes and return on equity are included in the capital and financing costs.

13. If the data provided at the CPUC website are insufficient, please indicate which datasets should be added.

It is not clear which datasets were from the CPUC Phase 2 study assumptions, and which are adjustments from the Phase 2 study made by FTI Consulting.

14. Should another workshop be held between now and the one currently scheduled for May 2021? If so, when and to discuss what topics?

Another workshop is helpful, especially if the study assumptions are to be revised and incorporated into updated study. The workshop should also include the preliminary results for evaluating the proposed options. Timeframe for the additional workshop could be late March 2021.