BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

FILED
04/24/26
01:56 PM
R2510003

Order Instituting Rulemaking to Oversee the Resource Adequacy Program, Consider Program Reforms and Refinements, and Establish Forward Resource Adequacy Procurement Obligations.	Rulemaking 25-10-003

CALIFORNIA ENVIRONMENTAL JUSTICE ALLIANCE AND SIERRA CLUB COMMENTS ON THE PROPOSED INPUTS AND ASSUMPTIONS

Deborah Behles
Counsel for CEJA
2912 Diamond Street, No. 162
San Francisco, CA 94131
(415) 841-3304
deborah.behles@gmail.com

Attorney for CEJA

Katherine Ramsey
Sierra Club Environmental Law Program
2101 Webster Street, Suite 1300
Oakland, CA 94612
(415) 977-5627
katherine.ramsey@sierraclub.org

Attorney for Sierra Club

Dated: April 24, 2026

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Pursuant to the California Public Utilities Commission's ("Commission's") Rules of Practice and Procedure, the California Environmental Justice Alliance ("CEJA") and Sierra Club respectfully file these Comments on the April 9, 2026 Proposed Inputs and Assumptions, SERVM 2026 Data Updates in Support of Resource Adequacy ("RA") and Integrated Resource Planning ("IRP") (hereinafter "Proposed I&As"). These comments are timely filed pursuant to the Administrative Law Judge's March 30, 2026 ruling in the above-referenced proceeding.

DISCUSSION

CEJA and Sierra Club appreciate the work that Energy Division staff has done to increase the transparency around the Loss of Load Expectation ("LOLE") study process. Both the workshop and the Proposed I&As provide important information for understanding the LOLE study. As described below, CEJA and Sierra Club have several recommendations for how to improve the LOLE inputs and assumptions as well as the Commission's eventual Planning Reserve Margin ("PRM") determination.

CEJA and Sierra Club recommend that:

- The LOLE determination calculates both the expected unserved energy as well as the loss of load hours;
- The Commission re-examines how it considers operating reserves and demand response when determining whether an LOLE has occurred;
- The Commission describes the resources not included in the LOLE calculation in the Proposed I&As;
- The Commission further evaluates distribution and transmission losses;
- The Commission updates the Integrated Energy Policy Report ("IEPR") and data center

considerations;

- The Commissions refines its considerations of demand modifiers;
- The Commission uses the IRP methodology for prioritizing which gas plants to remove;
- The Commission determines ratepayer and environmental impacts for its PRM determination; and
- The Commission relies on the best available data for emission calculations.

Incorporating each of these recommendations will help inform the Commission's PRM determination and ensure that it best balances affordability and environmental requirements.

1. The LOLE Determination Should Include Examination of EUE and LOLH.

The Proposed I&As describe how the LOLE study will quantify the expected unserved energy ("EUE") metric, but it fails to mention quantifying the loss of load hours ("LOLH") metric like is has in past studies.[1] Both the LOLH and the EUE metrics are important to evaluate when determining the right reliability level. The EUE and LOLH metrics can help the Commission evaluate the actual risk of a LOLE event. Recent LOLE studies show that achieving a 0.1 LOLE can result in an extremely low LOLH and EUE, suggesting that the risk of a LOLE is minimal at best. For example, one LOLE study during last proceeding showed that: the LOLH during most months was zero, there were only 1.5 unserved hours in ten years, and the EUE was less than one millionth of the total energy served in a year.[2]

The EUE and LOLH should be considered by the Commission when weighing whether the proposed planning reserve margin ("PRM") appropriately balances reliability and affordability. The Commission's LOLE study metrics were set years ago under a very different centralized grid where a loss of load generally had a higher magnitude and impact. Now with the changing grid, it is important to examine whether a loss of load event is significant or whether it is so negligible that it could reasonably be met by the many other resources not included in the study. This consideration is especially important now when electricity is becoming increasingly unaffordable for households throughout the State.

[1] CPUC, *Proposed Inputs and Assumptions*, p. 7 (Apr. 9, 2026) (served on parties via email) [hereinafter "Proposed I&As"].
[2] R.23-10-011, CEJA Track 3 Opening Comments, p. 5 (Mar. 3, 2025), *available at* https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M558/K284/558284037.PDF.

2. The Commission Should Re-Examine How It Considers Operating Reserves and Demand Response When Determining Whether a LOLE Occurs.

The Commission's historical assumptions related to when a LOLE occurs is more conservative than other jurisdictions. In particular, the Commission has historically assumed that a LOLE is triggered if the approximately 6% of operating reserves are not retained for any period of time, even though the applicable North American Electric Reliability Corporation ("NERC") requirement only applies to emergencies that last over 60 minutes.[3] The Energy Division further assumes that emergency demand response resources cannot be deployed to mitigate a loss of load in the modeling. These assumptions are more conservative than other balancing authorities, as shown in Table 1.

Table 1: Application of Resource Adequacy Metrics Across RTOs[4]

RTO	1-in-10 Standard Definition	Event Type Triggering LOLE	Comparison to Energy Division LOLE Definition
MISO	0.1 loss of load events per year	Firm load shed after all operating reserves and DR deployed	Less conservative
NYISO	0.1 loss of load events per year	Firm load shed after 10 min and 30 min operating reserves and voltage reduction deployed	Less conservative
ISO-NE	0.1 loss of load events per year	Firm load shed after voltage reduction and DR deployed, but 200 megawatts ("MW") of operating reserves maintained	Less conservative
PJM	0.1 days with loss of load per year	Firm load shed after interruptible load and 30 min reserves deployed, but before	Less conservative

[3] NERC, *Contingency Reserve*, pp. 1-3 (June 12, 2025), *available at* https://www.nerc.com/globalassets/standards/reliability-standards/bal/bal-002-wecc-3.pdf.
[4] Brattle, *Alternative RA Metrics, and RA Construct Elements*, p. 4 (June 10, 2020), *available at* https://www.brattle.com/wp-content/uploads/2021/06/18906_industry_changes_in_resource_adequacy_requirements.pdf.

		voltage reduction or 10 min reserves deployed	
SPP	2.4 loss of load hours per year	Operating reserves fully depleted before a LOLE[5]	Less conservative
ERCOT[6]	0.1 days with loss of load per year (exploring other metrics)	An hour during which firm load exceeds available generation plus 1,000 MW of operating reserves.	Less conservative

As Table 1 illustrates, all these balancing authorities consider the depletion of some level of reserves and/or the availability of demand response resources before assuming a loss of load event has occurred in the modeling. Table 1 further shows that there is a wide range of interpretations used to define the 0.1 LOLE standard and that the Commission's historical interpretation is conservative. It is not clear given the number of conservative assumptions in the modeling whether this continues to make sense. These conservative assumptions make the reliability requirements higher and more expensive, and it is not clear how much ratepayers benefit. At the very least, the Commission can analyze LOLE events to determine how changing the definition to better align with other balancing authority areas ("BAAs") would impact reliability requirements.

3. The Commission Should Describe Resources Not Included in the LOLE Determination.

The last LOLE study did not consider all potentially available resources. In particular, the LOLE studies in R.23-10-011 did not include strategic reliability reserves, emergency load reduction resources, resources that were recently added to the system, and all available imports in the modeling as available resources. The Proposed I&As also do not appear to include these resources. CEJA and Sierra Club request that the Commission describe which resources are not included and consider these conservative assumptions when setting the PRM.

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[5] Southwest Power Pool ("SPP") Resource Adequacy Team, *2023 SPP Loss of Load Expectation Report*, p. 33 (June 2024), *available at* https://www.spp.org/documents/71904/2023%20spp%20lole%20study%20report.pdf.

[6] Woody Rickerson, *Reliability Standard Study Preliminary Results*, Electric Reliability Council of Texas ("ERCOT"), p. 4 (June 19, 2023), *available at* https://www.ercot.com/files/docs/2023/06/12/7-1-1-reliability-standard-study-preliminary-results.pdf.

a. Strategic Reliability Reserve

The Proposed I&As do not describe whether the Strategic Reliability Reserve ("SRR") resources are included in the LOLE calculation. Rather, the Proposed I&As only state that the once-through cooling units are assumed retired.[7] The SRR had approximately 3,079 MW contracted through 2026.[8] CEJA and Sierra Club consistently advocate for the once-through cooling gas plants to be retired on schedule without further extensions and removed from the SRR. However, until they are removed, the capacity from those plants should be reflected in the Commission's reliability modeling. Notably, some balancing authorities, such as ERCOT, consider the availability of reserves like the SRR to meet reliability once other conditions are met.[9]

b. Emergency Load Reduction Programs

The last LOLE modeling did not include consideration of the Emergency Load Reduction Program ("ELRP") and other emergency load reduction programs such as the Demand Side Grid Support Program, the Distributed Electricity Backup Assets Program, and the Emergency Assistance on the Interties program. These programs have proven to be a critical way to avoid loss of load events, and other balancing authorities do consider these types of programs when determining whether a loss of load event occurs.[10] It is not clear whether these programs are being considered in the analysis here, and thus, CEJA and Sierra Club request that the Commission clearly state whether these programs are included in the analysis. To the extent that these programs are not considered directly in the LOLE SERVM analysis, CEJA and Sierra Club request that the Commission consider them when weighing LOLE events and setting the PRM. The Commission has previously considered these types of programs when setting an effective

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[7] Proposed I&As at 7.

[8] *See* Delphine Hou et al., *Electricity Supply Reliability Reserve Fund Progress Report* (Aug. 1, 2025), *available at* https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Electricity-Supply-and-Strategic-Reserve-Office/DWR-August-2025-JLBC-Report-1212.pdf (summing capacity totals for SPAP Resources in Tables 2 (49 MW), Emergency Generators in Table 4 (143 MW), and Extended Operations Resources in Table 6 (2,886 MW) equals a total of approximately 3,079 MW). CEJA and Sierra Club continue to advocate for closure of the Once-Through-Cooling facilities as soon as possible.

[9] Kevin Carden, *Effective Load Carrying Capacity Study, Final Report*, Astrapé Consulting, p. 58 (Dec. 7, 2022), *available at* https://www.ercot.com/files/docs/2022/12/09/2022-ERCOT-ELCC-Study-Final-Report-12-9-2022.pdf (as an example of modeling emergency reserves, ERCOT considers two different types of emergency reserves as load reductions when certain conditions are met.) *See* Table 1: Application of Resource Adequacy Metrics Across RTOs [hereinafter "Table 1"].

[10] *See* Table 1 (discussing definitions of LOLE from other balancing authorities).

PRM, and CEJA and Sierra Club urge the Commission to continue to evaluate how these programs can meet reliability needs moving forward.

c. Import considerations

CEJA and Sierra Club appreciate that the Commission is proposing a higher import limit than was considered in the last set of LOLE studies. Nevertheless, the Proposed I&As appear to leave open the possibility that the Commission will later artificially constrain imports in the study. CEJA and Sierra Club request that the Commission not artificially lower import levels based on the LOLE results like it did last cycle.

CEJA and Sierra Club further question the 3- hour ramping assumption that Staff is assuming for imports. Based on this assumption, imports will be limited for the 5 hours from 5-10pm as well as from 2-5pm and 10pm-1am. CEJA and Sierra Club have not seen any analysis that suggests this import ramping limit is reasonable, and California Independent System Operator ("CAISO") data on imports suggests that ramping occurs more quickly than three hours.[11] Solar resources, for example, along with most other energy generation resources are likely highly available during the 2-5pm period, raising questions about the import limitation. Furthermore, given that peak levels drop off at 10pm, it is likely that more imports than a fraction will be available during the 10pm-1am time period, and recent CAISO data does not suggest that there needs to be a 3-hour ramp to integrate more imports.[12] This conservative import ramping assumption could considerably change the LOLE analysis, and therefore CEJA and Sierra Club request additional evaluation of this assumption.

d. Resources on-line after the cut-off date

The Proposed I&As state that it is using an August 2025 cutoff date for resources to be considered in the modeling.[13] While CEJA and Sierra Club understand from the workshop that more recent online resources cannot be considered at this time. CEJA and Sierra Club urge the Commission to quantify the resources that are not included and evaluate how to consider these additional resources in the eventual PRM decision. Between August 2025 and March 2026, over 3,000 MW of new resources, including over 2,000 MW of energy storage, were installed.[14]

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[11] *See, e.g.*, CAISO, *Supply and Renewables*, *available at* https://www.caiso.com/todays-outlook/supply (last visited Apr. 24, 2026) (April 2026 import values).
[12] *Id*.
[13] Proposed I&As at 9.
[14] *Compare* CPUC, *Resource Tracking Data*, p. 4 (Aug. 2025), *available at* https://www.cpuc.ca.gov/-

These additional resources can help meet peak needs and are likely to reduce the PRM. In addition, these resources are likely to reduce the need to rely on gas resources in the modeling. Failure to consider these resources could result in an overestimation of need and potentially of the PRM.

4. The Commission Should Further Evaluate Transmission and Distribution Losses.

The Proposed I&As discuss how customer needs are "grossed up" from transmission and distribution losses.[15] This consideration, however, is likely too conservative, as it is higher than previously assumed by the Commission.[16] Furthermore, it is not clear whether this presumption makes sense when approximately half of the RA needs are expected to be met by local capacity resources to meet Local Capacity Reliability needs.[17]

CEJA and Sierra Club further request that the Commission change its calculation of the "penalty" ratio that assumes behind the meter photovoltaic solar ("BTM PV") provides less energy than utility scale generation. The Commission has long acknowledged that BTM PV avoid the transmission and distribution losses associated with utility-scale transmission level generation.[18] Therefore, the "penalty" ratio assumed between BTM PV and utility scale generation should be changed to account for the benefit of BTM PV in avoiding transmission and distribution losses.

/media/cpuc-website/divisions/energy-division/documents/summer-2021-reliability/tracking-energy-development/resource-tracking-data-august-2025-release.pdf, *with* CPUC, *Resource Tracking Data*, p. 4 (Mar. 2026), *available at* https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/summer-2021-reliability/tracking-energy-development/resource-tracking-data-march-2026-release.pdf.

[15] Proposed I&As at 12.

[16] Energy+Environmental Economics, *2024 Distributed Energy Resources Avoided Cost Calculator Documentation*, p. 63 (Oct. 2, 2024), *available at* https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/demand-side-management/acc-models-latest-version/updated-2024-acc-documentation-v1b.pdf.

[17] R.25-10-003, CAISO Corporation Draft 2027 Local Capacity Technical Report, p. 1 (Apr. 3, 2026), *available at* https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M604/K023/604023822.PDF (hereinafter "Draft 2027 LCR Report").

[18] Energy+Environmental Economics, *supra* note 16.

5. The Commission Should Update the IEPR Forecast and Data Center Considerations.

Just this month, the joint agencies recently reached an agreement about the forecast that should be used for the RA proceeding.[19] The Commission should update the Proposed I&As to include this agreement.

With relation to the IEPR forecast alignment, CEJA and Sierra Club appreciate the work that Commission's staff has done to align the IEPR with the SERVM modeling work. Nevertheless, we remain concern that there are times such as in September when the differential between the IEPR and SERVM demand forecast are over 1,000 MW.[20] This magnitude of difference could result in a LOLE being triggered by the modeling, even though it would not be triggered under the actual demand forecast. Ideally, this differential should be lowered to be under 100 MW. If that cannot occur due to timing, the Commission should When examining the modeling results, the Commission should evaluate whether LOLEs are forecast to occur in this time period, and if the EUE is lower than the differential, it should take that into account.

CEJA and Sierra Club further request evaluation about how data centers are considered in the analysis. The Proposed I&As merely assume that the IEPR assumptions related to data centers will be used in the study.[21] The IEPR study, however, looks at different levels of data centers. In particular, the IEPR's proposed single forecast set includes three scenarios of data center load growth.[22] It is important to evaluate which of these is most appropriate given the short-term nature of RA and given that many proposed data centers will not ultimately materialize.

6. The Commission Should Refine its Consideration of Demand Modifiers.

The Proposed I&As state that demand modifiers are weather independent except for BTM PV.[23] Yet, this assumption is an oversimplification of what occurs. Other types of demand modifiers do vary based on the weather. For example, energy efficiency makes appliances such as air conditioning more efficient, and thus, it can have a higher impact on high demand days.

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[19] Docket 25-IERP-03, *2025 IERP Forecast – Single Forecast Set Agreement – Updated 20260415* (Apr. 16, 2026), *available at* https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=25-IEPR-03 [hereinafter "Single Forecast Set Agreement"].
[20] Proposed I&As at 16.
[21] Proposed I&As at 29.
[22] Single Forecast Set Agreement at 2.
[23] Proposed I&As at 12.

Demand response is also likely to be more available on high demand days as customers respond to the high demand by reducing their energy needs. These relationships are thus likely to be dynamic and dependent on weather. CEJA and Sierra Club request that the Commission with the CEC work on trying to figure out a more accurate way to characterize the relationship of demand modifiers with temperature changes in the modeling. Assuming that demand modifiers are static does not accurately predict their likely contribution to the grid, especially on high-stress days

Furthermore, CEJA and Sierra Club request that the Commission develop ways to consider new BTM resources like other front of the meter generating resources such as solar and wind.[24] The amount of BTM resources is often frozen in time after the CEC's IEPR work, but this does not then reflect reality where increasing amounts of BTM resources are continuing to be developed.

7. The Commission Should Utilize the IRP Methodology to Determine the Order for Removing Gas Plants.

The Proposed I&As propose removing aging thermal plants as part of the LOLE process.[25] CEJA requested this in the last RA proceeding, and thus, CEJA and Sierra Club fully support this step. CEJA and Sierra Club request that the Commission utilize the methodology for prioritizing gas plants considered for retirement that was developed in the IRP proceeding. In the IRP, Energy Division has developed an objective methodology weighing several different factors to determine how best to prioritize gas plant retirements.[26] This objective methodology gives the Commission the information necessary to remove generators from a LOLE study.[27]

8. The Commission Should Commit to Considering Ratepayer and Environmental Impacts in the PRM Decision.

The Commission should commit to examining ratepayer and environmental impacts when setting the PRM in this next study, by at least examining:

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[24] Proposed I&As at 18.
[25] Proposed I&As at 47.
[26] *See* CPUC, *Modeling Assumptions for the 2024-2025 Transmission Planning Process* (Feb. 28, 2024), *available at* https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/2023-irp-cycle-events-and-materials/assumptions-for-the-2024-2025-tpp/modeling_assumptions_24-25tpp.pdf (discussing retirement assumptions).
[27] CEJA and Sierra Club also note that while we are pleased that Energy Division has developed a tool to prioritize retirements in the IRP, this tool still needs refinements. As we have requested in the IRP proceeding, the tool should not be deprioritizing plants in local areas. Rather, pursuant to SB 887's mandate, the Commission should prioritize planning for transitioning away from gas plants in local areas.

- the impact of different PRMs on affordability and energy bills;
- the PRMs actual impact to reliability (as reflected in outage hours and unserved energy); and
- the impact of different PRMs on the environmental goals and requirements.

In particular, the Commission can and should examine whether its consideration of when a LOLE is triggered is necessary to protect reliability or whether it is needlessly driving over procurement and increased costs. This should include an analysis of whether a different definition of loss of load more appropriately reflects the reliability risks. The Commission has a duty to consider affordability when setting requirements. In addition, the Code requires that the RA program advance "the state's goals for clean energy, reducing air pollution, and reducing emissions of greenhouse gases."[28] The Commission should also commit to an evaluation of the impact of different PRM levels on these requirements.

9. Emission Predictions Should Use Best Available Data.

CEJA and Sierra Club appreciate the Proposed I&As' discussion of emission factors and data.[29] With relation to natural gas facilities, the Proposed I&As propose generic emission factors related to the different types of operations. This, however, is likely not the best source of information. Different plants emissions can vary greatly based on their age, condition, and the level of their pollution controls. As such, CEJA and Sierra Club request that to the extent possible, actual emissions data for the different gas facilities is used. The outage data uses actual information for each plant showing that it is possible to distinguish plant operations for each individual plant. If this information is not available in the near term, it could be integrated for the next LOLE study.

Similarly with biomass plants, CEJA and Sierra Club urge the Commission to use actual plant emissions data to the extent possible. Biomass burning emission factors can vary greatly depending on the condition of the plant, type of fuel, and the controls. As such, the best available information is emissions data that directly reflects the operations of the facility.

CONCLUSION

CEJA and Sierra Club urge the Commission to modify the Proposed I&As as discussed above.

[28] Cal. Public Util. Code § 380(b).
[29] Proposed I&As at 49-50.

Dated: April 24, 2026

Respectfully submitted,

/s/ Deborah Behles
Deborah Behles
Counsel for CEJA
2912 Diamond Street, No. 162
San Francisco, CA 94131
(415) 841-3304
deborah.behles@gmail.com

Attorney for CEJA

/s/ Katherine Ramsey
Katherine Ramsey
Sierra Club Environmental Law Program
2101 Webster Street, Suite 1300
Oakland, CA 94612
(415) 977-5627
katherine.ramsey@sierraclub.org

Attorney for Sierra Club