BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Oversee the Resource Adequacy Program, Consider Program Reforms and Refinements, and Establish Forward Resource Adequacy Procurement Obligations.	Rulemaking 21-10-002 (Filed October 7, 2021)

COMMENTS OF THE INDEPENDENT ENERGY PRODUCERS ASSOCIATION ON ENERGY DIVISION'S LOLE AND ELCC STUDY

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I. INTRODUCTION

The Independent Energy Producers Association (IEP) offers the below comments on the Energy Division Study for Proceeding R.21-10-002 on loss of load expectation (LOLE) and effective load carrying capability (ELCC) for the expected 2024 resource portfolios (2024 LOLE Study), which was attached to the February 18, 2022 ruling from ALJ Chiv. For the most part, IEP supports the modeling inputs and methodologies used in the study. As we describe in more detail, we do have some concerns about the modifications made to the delta method for calculating ELCC and whether that leads to inconsistent resource counting results between the Integrated Resources Planning (IRP) program and the resource adequacy (RA) program. IEP also strongly recommends that parties have an opportunity to review and comment on modeling assumptions, particularly the dispatch algorithms used standalone and hybrid storage resources, before the Commission finalizes ELCC values for compliance purposes. Responses below are presented in the same order as the questions at the end of the 2024 LOLE Study. IEP has paraphrased longer questions for brevity.

II. Q1: WHICH SCENARIO IS MOST LIKELY TO BE REACHED IN 2024? WHICH SET OF TECHNOLOGY ELCC VALUES SHOULD BE ASSUMED?

The Commission should assume that the base portfolio, which reflects the portfolios approved in the IRP Mid-Term Reliability (MTR) and Preferred System Plan decisions, is the most likely to be in place for 2024. Scenario D seems to be a reasonable portfolio for 2023 with total installed capacity approximately halfway between the existing portfolio and the base case. Because there is very little discussion in the study of how this portfolio was developed, it is not clear why the incremental amount of standalone storage in Scenario D is only 6% higher than the "50% of LSE IRP Plans" assumption (i.e., a 2,068 MW difference between the existing capacity and the 2023 scenario compared to 1,958 MW incremental storage in the "50% of LSE IRP Plans" scenario) while the incremental 2023 solar, wind, and hybrid capacities are 43-49% higher than the "50% of LSE IRP Plans" scenario. Aside from IEP's concerns regarding some of the inputs and ELCC methodological choices discussed below, the ELCC values selected for RA purposes should be those that correspond to the Base Case (for 2024) and Scenario D (for 2023). If information available to Energy Division by later this year indicated that permitting, interconnection, and supply chain constraints may materially impact the obtainment of the 2024 Base Case, the Energy Division should revise the ELCC values to either the Scenario B or C results, as appropriate.

III. Q2: WHAT, IF ANY CHANGES SHOULD BE MADE TO THE ASSUMPTIONS USED TO PERFORM THE LOLE STUDY?

The performance of thermal resources should be adjusted for ambient derates. Additionally, the study does not provide any information on the extent to which use limitations for certain thermal facilities have been accounted for. The assumed import limit of 4,000 MW seems unnecessarily conservative, particularly for non-peak months, but relaxing this restriction may not have any material impact on the planning reserve margin (PRM) or ELCC results.

IV. Q3: IS AN LOLE STUDY APPROPRIATE TO CALCULATE RA OBLIGATIONS FOR: 1) A PEAK RA CAPACITY FRAMEWORK, 2) A SLICE OF DAY FRAMEWORK?

Performing LOLE studies is critical to determining the RA obligations under either framework. As the share of variable and use-limited resources in California's power supply portfolio grows, we cannot continue to rely on PRMs that remain fixed for several years, or nearly two decades in the case of the current 15% PRM. One concern is that if the Commission ultimately adopts the 24-hourly slice reform proposal, the non-ELCC based resource counting conventions adopted for variable resources and storage will not align the ELCC values. Because the ELCC values are derived from the same model used to calculate the LOLE, there is a direct connection between the ELCC values and the total amount of resources needed for reliability. As long as the ELCC values for different resource categories are adjusted to equal the total portfolio ELCC, when LSEs actually procure the resources, the collective procurement should aggregate to the total portfolio requirement. This may not be true if resources' exceedance- or Pmax-based resource counting values differ substantially from the ELCC-based values. If the 24-hourly slice framework is adopted, the Commission staff should compare an expected portfolio during a summer month using non-ELCC values to a portfolio that would be procured using ELCC to verify that the non-ELCC based portfolio achieves the target LOLE.

V. Q4: HOW SHOULD PLANNED OUTAGES BE TREATED IN CALCULATING AN RA PRM USING AN LOLE STUDY?

As long as substitution requirements are in effect for facilities that notify the California Independent System Operator (CAISO) of an intent to take a planned outage, planned outages should be ignored in the LOLE study. Even if CAISO were to modify the substitution rules to no longer require one-for-one substitution in all cases, CAISO can manage facilities' planned outage schedules to ensure that they are taken in off-peak months and to keep the total amount of

capacity from facilities on overlapping planned outages at an acceptable level that does not jeopardize reliability.

VI. Q5: WOULD REMOVING DELIVERABILITY RESTRICTIONS WHEN CALCULATING NQCs BE ACCEPTABLE?

IEP is persuaded that reforming deliverability assessments could allow California to achieve its clean energy targets at lower cost, but we are cautious about relaxing deliverability constraints for RA purposes without a thorough vetting process that includes CAISO and other stakeholders. If the Commission adopts a 24-hourly slice framework, relaxing the deliverability requirements during off-peak hours seems reasonable and would permit more capacity to count from resources that are currently subject to deliverability constraints. If the Commission adopts the two-slice framework, which relies on ELCC accounting, there is a chance that higher NQCs resulting from relaxing the deliverability constraints may not conform with the way SERVM modeled the performance of some resources.

VII. Q6: HOW OFTEN SHOULD STAFF PERFORM LOLE STUDIES FOR RA AND SHOULD THE LOLE AND ELCC STUDIES BE PERFORMED SIMULTANEOUSLY?

Ideally, Commission staff should conduct LOLE and ELCC studies annually, but no less than biennially. Staff should conduct the LOLE and ELCC studies simultaneously so that the ELCC values are based on the same portfolio assumptions used to calibrate the model to the LOLE standard.

VIII. Q7: COMMENT ON THE REVISED ELCC METHODOLOGY

IEP supports the delta method as a preferable alternative to weighted average ELCCs but encourages the Commission to consider a vintaged incremental ELCC framework, which provides superior market signals about the reliability value incremental resources provide to the

grid at the time they are procured and facilitates more seamless interactions between the IRP and RA programs.

Staff's description of the modified delta method used for this study seems to be a significant departure from the methodology as described in a prior study commissioned to inform procurement of resources in compliance with the IRP MTR decision,[1] and the 2024 LOLE Study does not provide enough information for IEP and other parties to fully understand the resource counting implications of the modifications. Under E3's approach, the ELCC value of each technology starts with the last-in incremental value. The technology-specific values are then adjusted by allocating the total diversity benefit to each technology based on the differences between each technology's first-in and last-in incremental values.

Regarding the modified delta method, IEP notes that statements describing Energy Division's approach in the 2024 LOLE Study and the workshop slides appear to contradict each other. The LOLE Study describes the use of first-in and last-in ELCCs to create a weighted average ELCC.[2] However, the presentation for the March 3, 2022 workshop states that allocation of diversity benefits relied on weighted average technology class ELCCs due to "staff having limited resources for simulating 'last-in' monthly marginal ELCCs."[3]

Even if the modified delta method described during the workshop did use last-in marginal ELCC values at some point in the calculations, IEP is concerned that the modified and non-modified versions of the delta method may produce significantly different results, at least for certain technologies. The results of each approach should be compared for two to three variable

[1] Energy and Environmental Economics and Astrapé Consulting. Incremental ELCC Study for Mid-Term Reliability Procurement (Updated), October 22, 2021. (MTR Study)

[2] LOLE Study, pp. 12-13.

[3] March 3 workshop presentation, slide 13.

and use-limited resource classes for at least one summer month to verify that the resulting ELCC values do not diverge too sharply. The differences in the ELCC values for solar and storage between the 2024 LOLE Study and the MTR Study are large, although apples-to-apples comparisons are difficult since the MTR Study's ELCC values are presented in annual terms and the assumed total portfolios may not completely align. With that caveat, the 2024 ELCC for solar (including the diversity benefit) was 6.6% and 4-hour storage was 90.7% in the MTR Study compared to maximum ELCCs in the 2024 LOLE Study for solar and stand-alone storage of 17.6% and 80.7% respectively in the 2024 Base Case.[4] These discrepancies suggest that the 2024 LOLE study results may undervalue storage and overvalue solar-only resources.

IX. Q8: SHOULD STORAGE AND HYBRID RESOURCES BE VALUED USING THE ELCC METHODOLOGY?

IEP supports the use of ELCC for all variable and use-limited resources. However, if the Commission adopts the 24-hourly slice RA reform framework, ELCC will be incompatible and the Commission will need to use the Pmax or Pmax + exceedance methodologies as described in the RA reform working group report.

X. SHOULD THE PRM BE STATIC ACROSS THE YEAR OR VARY BY MONTH/SEASON? HOW SHOULD PRM AND ELCC VALUES BE ALLOCATED ACROSS MONTHS?

As long as the RA compliance obligation is monthly, the ELCC values must also be calculated on a monthly basis due to the large variance in values from month to month. To minimize the administrative and compliance burden of the program, IEP supports shifting the compliance framework from a monthly obligation to a seasonal obligation, which would reduce

[4] MTR Study, p. 25. 2024 LOLE Study, p. 23.

the number of LOLE and ELCC studies the Energy Division needs to conduct for each compliance year.

Regarding the PRM, given the similarity in the results for all months except for the spring months, and the anomalous results for February, it is less important to vary the PRM on a monthly basis. The PRM could either be set at a sufficiently high level to ensure reliability during the peak summer months, or the Commission could establish seasonal PRM requirements.

XI. Q10: SHOULD FORCED OUTAGE RATES BE INCLUDED IN THERMAL RESOURCES' QC VALUES? IF UCAP IS USED, SHOULD IT ALSO INCLUDE AMBIENT DERATES?

As storage and renewable resources' shares of the RA portfolio grow, it may be appropriate to remove the forced outage rate for thermal resources from the PRM, but IEP opposes the primary alternative presented thus far, CAISO proposed UCAP approach. As CAISO has recommended structuring UCAP, it would significantly reduce a facility's NQC for three years following a year with particularly poor availability.[5] In informal comments, IEP opposed this method of implementing UCAP unless a clear path is included for facilities to reset their UCAP values following substantial investments to improve availability.[6] Similarly, facilities that make investments in pre-cooling to reduce ambient temperature effects should benefit from those investments immediately rather than waiting three years for the RA program's resource counting conventions to fully acknowledge the increased capacity. If the Commission adopts UCAP, or a similar methodology, to derate thermal generators directly rather than including the derates in the PRM, it is imperative that the final methodology recognize the full capacity enabled by recent plant investments with little to no lag, which will incentivize

[5] Future of Resource Adequacy Working Group Report, pp. 56-57.

[6] Future of Resource Adequacy Working Group Report, pp. 253-254.

generators to make such investments and benefit LSE customers by increasing the pool of available capacity.

Regardless of whether the RA program leaves thermal forced outages in the PRM or allocates them as derates to the generators' QC values, IEP has argued that ambient derates should be applied consistently to thermal generators, an approach parties have referred to as "UCAP-light."[7]

XII. SHOULD THE LOAD FORECAST FOR RA BE BASED ON SERVM OR IEPR? SHOULD THE PRM BE BASED ON THE SERVM OR IEPR FORECAST?

IEP offers no response but may address this question in replies.

XIII. CONCLUSIONS

IEP appreciates the work that Energy Division has performed to provide updated ELCC values. IEP supports the general direction of the LOLE Study but has concerns about the modified delta method and its impact on the resulting ELCC values. The lack of clarity regarding the modifications and other aspects of the LOLE study highlights the need to engage stakeholders before conducting the modeling.

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[7] Future of Resource Adequacy Working Group Report, p. 248.