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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.	R.23-10-011

COMMENTS OF MICROSOFT CORPORATION ON THE PROPOSED DECISION ON TRACK 2 ISSUES

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On Behalf Of
MICROSOFT CORPORATION

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I. INTRODUCTION

Microsoft commends the Commission on the Proposed Decision on Track 2 Issues ("PD")[1] and appreciates the opportunity to provide comments on the PD. This PD is significant because it adopts a Loss of Load Expectation ("LOLE") study as a routine part of the Resource Adequacy ("RA") process, recognizes a 0.1 LOLE as an industry standard, sets a timeline for adopting a unforced capacity ("UCAP") methodology, and makes appropriate adjustments to address local RA and Central Procurement Entity ("CPE") challenges.[2] This PD represents a major step forward in ensuring reliability and addressing known gaps in system and local planning. Microsoft has been engaged in the RA proceeding for the past two cycles to address concerns regarding the impacts of grid reliability on its operations. As a significant component of its business platform, Microsoft constructs, owns, and operates data centers around the world and has a growing presence in California. A reliable and resilient energy supply is a critical need for its datacenters and further enables local economic development opportunities. Microsoft has set industry-leading

[1] "Proposed Decision on Track 2 Issues," (Issued October 29, 2024, in R.23-10-011).
[2] *Id*.

sustainability targets: (1) by 2025, Microsoft will shift to 100 percent supply of renewable energy on an annual basis, meaning that it will have contracted for renewable energy to match 100 percent of carbon emitting electricity consumed by all of its data centers, buildings, and campuses within that year, and (2) by 2030, Microsoft will have 100 percent of its electricity consumption, 100 percent of the time, matched hourly by carbon-free energy purchases.

Throughout our engagement, Microsoft has emphasized the need for the RA program to: meet a 0.1 LOLE, establish a midterm reliability assessment and procurement process, and has joined with other parties in calling for the California Public Utilities Commission ("CPUC") to address "seams" issues with the Integrated Resource Plan ("IRP") program.[3] To that end, we appreciate the PD's commitment to conducting an LOLE study once every two years and to using a 0.1 LOLE as the standard for reliability.

Microsoft previously filed comments on the LOLE Study's "Revised Slice of Day Tool Analysis."[4] We agree with the PD on the need for further discussion and analysis before establishing the Planning Reserve Margin ("PRM") for 2026. We look forward to reviewing the revised analysis in December and participating in subsequent workshops. Furthermore, we are aligned with the PD on maintaining the local RA construct and refining the CPE framework, as well as the direction for Energy Division to coordinate with the California Independent System Operator ("CAISO") on developing a UCAP methodology ahead of the 2028 compliance year.

Microsoft thanks the Commission for a thoughtful and thorough PD, and recommends that the Commission adopt this PD with minor modifications.

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[3] "Comments of Microsoft Corporation on the Proposed Decision Adopting Local Capacity Obligations For 2024-2026, Flexible Capacity Obligations For 2024, and Program Refinements" (Filed June 14, 2023, in R.21-10-002). *See also* "Microsoft Corporation Comments on February 8, 2023, Resource Adequacy Workshop on Proposals For 'Implementation Track 3'," (Filed February 24, 2023, in R.21-10-002).

[4] Attachment A, "Administrative Law Judges Ruling on revised Slice of Day calibration tool and comment schedule," (Issued August 30, 2024, in R.23-10-011).

II. MICROSOFT SUPPORTS THE PROPOSAL TO ADOPT AN LOLE STUDY AS PART OF THE RA PROCEEDING ON A BIANNUAL BASIS, AND FOR THE ACCEPTANCE OF A 0.1 LOLE AS THE RELIABILITY STANDARD PER AB 2368.[5]

The PD authorizes the Energy Division to update the LOLE study in this proceeding every two years, determining that it is . . . "more realistic and reasonable for Energy Division Staff to update an RA LOLE study every two years" rather than once a year. The Commission recognizes that "a schedule for developing and discussing the LOLE study would be beneficial to stakeholders for understanding the LOLE study inputs and process."[6]

The PD also notes the importance of the schedule correlating with "revised IEPR data which is typically published in February of each year." The Integrated Energy Policy Report (IEPR) is conducted in a two-year cycle, one year being a "full" report and the other an "update."[7] IEPR load forecasts can change significantly from year to year reflecting updated resource costs, newly adopted state goals and improved modeling assumptions. Using an outdated forecast in LOLE analysis can cast doubt on the results and create inconsistencies with other modeling efforts across the electric sector. Microsoft appreciates that the PD encourages energy division "to develop and distribute a schedule that provides for necessary updates of data in the LOLE model, publication of an inputs and assumptions document, processing of inputs and assumptions into "Strategic Energy Risk Valuation Model" ("SERVM"), completion of the LOLE study and stress tests, and opportunity for party comments."[8] Providing a regular cadence for these studies will facilitate coordination with the California Energy Commission ("CEC") and CAISO, and will

[5] Assembly Bill 2368 (Petrie-Norris, Statutes of 2024, Chapter 713).
[6] PD at 17-18.
[7] *See* CEC's Integrated Energy Policy Report, available at https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report.
[8] PD at 17-18.

better enable parties to plan for robust participation in workshops and reviewing reports, all of which requires significant time and expertise.

The PD appropriately takes notice of recently passed legislation relevant to the RA program:

> the Commission notes that Assembly Bill 2368 was recently passed, which provides that the Commission shall determine the most efficient and equitable means to "[e]nsuring that the resource adequacy program can reasonably maintain a standard measure of reliability, such as a one-day-in-10-year loss-of-load expectation or a similarly robust reliability metric adopted by the commission, and use it for planning purposes."[9]

Microsoft also appreciates that the PD "agree[s] with parties that state that a 0.1 LOLE reliability target is the general industry standard, and use of the standard can better align the RA requirements with the IRP program."[10] Furthermore, Microsoft applauds the PD for concluding that "we plan to continue to use that standard going forward."[11] This is aligned with Microsoft's and other parties' past recommendations throughout this proceeding and the prior RA cycle.

Microsoft has been advocating for an LOLE study to be a routine part of the RA process since we became a party to the previous RA proceeding. We appreciate the PD's direction for an LOLE study based on a 0.1 standard to be a part of the RA process every two years and that the PD connects this with recently enacted legislation. While an annual LOLE study may give the Commission more visibility into shifting load and resource stack, we fully appreciate that resources are limited and that setting a schedule in advance will aid inter-agency communication and ensure that the CPUC's modeling can use the most up to date IEPR forecast. Microsoft encourages the Commission to adopt the provisions on LOLE modeling and schedule without modification.

[9] PD at 19.
[10] PD at 19.
[11] PD at 19.

III. MICROSOFT APPRECIATES THE PD COMMITTING TO STAFF-LED WORKSHOPS TO FURTHER REVIEW THE METHODOLOGY OF THE EXISTING LOLE STUDY, AS WELL AS THE SUBSEQUENT STRESS TESTS AND SLICE OF DAY CALIBRATION.

Microsoft's reply comments on the "Track Two Slice of Day Analysis" state:

> "the translation within the calibration tool to create a PRM necessary to maintain reliability appears to need additional consideration. Given the complexity of layering a Slice of Day assessment over the SERVM modeling results and LOLE analysis, we recommend an additional Staff workshop to discuss assumptions and outcomes, address parties' concerns, and discuss mitigating measures to address the potential for increased Load Serving Entity ("LSE") procurement costs."[12]

In general, Microsoft is still concerned that the Slice of Day framework may lead to over-procurement by LSEs in aggregate, given the challenges in perfectly procuring resources to each individual hourly load shape. Individual LSEs may be forced to fill individual hourly "shortfalls" when in fact the system as a whole is sufficiently resourced during all hours, which is inefficient and can lead to unnecessary procurement costs that are passed on to ratepayers.

Therefore, we are pleased that the proposed decision "agrees that additional vetting and further analysis of the issues raised by parties is needed" and directs Energy Division to revise the 2026 PRM analysis and distribute it in December. The PD goes on to provide that Energy Division will host workshops to "explain the analysis and supporting data" as well as "solicit informal comments on the analysis." [13] After that process, the Commission will " ... consider the revised PRM analysis in Track 3 of this proceeding."[14] This is consistent with our request to allow parties more time to understand the methodology behind the Slice of Day ("SOD") "calibration", to ask more questions about how the analysis was conducted, and then to have the opportunity to file comments if they are necessary, helpful, and appropriate.

[12] "Reply Comments on Resource Adequacy Track Two: Revised Slice-of-Day Tool Analysis," (Filed Sept. 16, 2024) at 3.
[13] PD at 11.
[14] *Id.*

We agree with the PD that parties should have the opportunity for further input and analysis to ensure comprehensive evaluation of the methodology before Staff recommends a Planning Reserve Margin ("PRM"). In the big picture, it is important for the Commission to understand the causality behind any significant adjustments to the PRM. More specifically, before adopting a new PRM the Commission should be explicit regarding whether major adjustments to the PRM, as recommended by prior Staff analysis, are necessary to achieve a 1-in-10 LOLE, as indicated by SERVM modeling, or whether the PRM increase indicated may be caused by the transition to SOD. As recently presented in the "Revised Slice of Day Tool Analysis"[15] it is impossible to disentangle causation. We therefore request that the PD clarify that the Energy Division should aim first recommend a PRM *without* the SOD calibration, sufficient to maintain a 0.1 LOLE, and *then* conduct the SOD "stress tests" to determine the PRM under SOD. This would most directly speak to the concerns of multiple parties, expressed recently in an *Ex Parte* communication led by California Community Choice Association ("CalCCA").[16]

As a customer, rather than a load-serving entity, Microsoft would defer to LSEs regarding how much time is needed between PRM adoption and the compliance year. If the timeline laid out in the PD is amenable to LSEs in terms of having notice for an increased PRM for 2026, then we would support it as well.

[15] Attachment A, "Administrative Law Judges Ruling on revised Slice of Day calibration tool and comment schedule," (Issued August 30, 2024, in R.23-10-011).

[16] "California Community Choice Association, Ava Community Energy, Pacific Gas and Electric Company, Shell Energy North America (US), L.P., MRW Associates, on behalf of Alliance for Retail Energy Markets, Gridwell Consulting, on behalf of Microsoft Corporation, Protect Our Communities Foundation, The California Environmental Justice Alliance, and Sierra Club's Joint Notice of *Ex Parte* Communication," (Filed October 23, 2024, in R.23-10-011).

A. Specific Recommendations for Energy Division-led workshops

As mentioned above, the Energy Division led workshops will be most productive if the scope is established in advance. First, we recommend that Energy Division revisit its SERVM LOLE analysis, and review each of the assumptions regarding that analysis with parties: for example, the load forecast choices and adjustments made by Staff. Other assumptions about resource counting, and overall resource totals should be shared and discussed. Next, Energy Division can share with parties the monthly, seasonal, and annual PRM that the LOLE results suggest would be necessary under the prior paradigm (before SOD implementation). This would allow parties to dig in on factors other than SOD that may be impacting the PRM, such as assumptions about resource availability, resource outages, etc. This process should also delve into each month's PRM results and try and understand what is driving those. This portion of the workshop could also consider what the LOLE results tell us about the need seasonal, monthly, or annual PRMs.

Next, Energy Division can present its "Slice of Day Calibration" or "stress test" analyses, and allow parties the opportunity to ensure that they understand the methodology and choices made by Staff. This would help parties understand whether there are inconsistencies with the "most constrained hours" or whether the need for "perfect" hourly procurement is the driver for a higher PRM vs what would be required under the prior ELCC-centered counting conventions. It would be beneficial to the Commission and all parties to examine and explain the difference between 70th percentile exceedance qualifying capacity (QCs) and previous Effective Load Carrying Capability ("ELCC") values, and the impact of the change in counting methods on resource availability and market conditions. Since Energy Division will repeat this process every two years, it is especially important to have robust discussions in the first round and ensure all methodology decisions are

understood, and allow parties to comment on all of the assumptions and choices made by Energy Division.

IV. WHILE MICROSOFT HAS BEEN AN ADVOCATE FOR THE SPEEDY DEVELOPMENT OF A UCAP METHODOLOGY, WE UNDERSTAND THAT THE COMMISSION'S RESOURCES ARE CONSTRAINED AND HOPE THAT COLLABORATION BETWEEN ENERGY DIVISION AND CAISO LEADS TO A UCAP METHODOLOGY CONSISTENT WITH MAINTAINING RELIABILITY STANDARDS.

Microsoft agrees with the PD that the Energy Division should collaborate closely with CAISO in developing a UCAP methodology. As weather and climate increasingly impact resource generation capabilities, the precise calculation of ambient derates becomes crucial for maintaining grid reliability. The challenges posed by climate change, including more frequent and severe extreme weather events, underscore the importance of accurate resource counting and the need for a robust methodology to more accurately capture ambient derates planned outages (sometimes referred to collectively as "unforced" outages). Unfortunately, the process for establishing a methodology to capture the impact of these potential outages has been delayed as ownership of the issue has transferred between the Commission and CAISO.

Continuing the UCAP discussion on two separate tracks may lead to inconsistent approaches. Instead, the PD identifies CAISO's Resource Adequacy Modeling and Program Design initiative[17] as the venue for collaboration on a single methodology that will provide the consistency required to establish an effective approach. The PD appropriately proposes:

> [d]ue to the work already underway towards a proposed UCAP methodology, an additional working group process is unnecessary; rather, we encourage parties to participate in CAISO's stakeholder process and/or

[17] *See* "California ISO - Resource adequacy modeling and program design," available at https://stakeholdercenter.caiso.com/StakeholderInitiatives/Resource-adequacy-modeling-and-program-design.

> submit proposals or evaluate Energy Division's proposal in Track 3 of the proceeding.[18]

CAISO's RA initiative began over a year ago and, through discussions, has developed a useful set of data and presentations that provide an excellent starting point for this collaborative effort on UCAP. For example, the CAISO initiative has already identified problem statements focused on the need to collect more complete information about the sufficiency of the RA fleet and how well current counting rules reflect forced outage rates, performance and availability.[19] Microsoft supports this data-driven approach, while recognizing that it is also data-intensive, and encourages the Commission and CAISO to focus on ways to improve data collection where Staff has identified existing data is insufficient.

In addition, the UCAP methodology should incorporate derates for both thermal and storage resources. As Microsoft has stated previously, "[r]ecent history has shown that thermal resources were significantly overcounted during recent heat-wave events. A modified unforced capacity methodology could provide a more nuanced and accurate representation of the variable capacity of our generation fleet."[20] This comprehensive approach promises to bolster the RA program, ensuring a more reliable grid by accurately accounting for ambient derates and incentivizing resource maintenance and performance improvements.

Microsoft also appreciates that the PD sets out an aggressive timeline for the adoption of a UCAP methodology that allows for expedited implementation. In the absence of clear direction from the Commission, stakeholders proposed a working group approach to developing a UCAP methodology that would be adopted for the 2028 compliance year.[21] Microsoft supports this

[18] PD at 22.
[19] "CAISO Resource Adequacy Issue Paper" (Published November 7, 2024) at 22.
[20] "Comments of Microsoft Corporation on RA Track 1 Implementation and Track 1 Workshop Proposals," (Filed March 8, 2024) at 11.
[21] PD at 20.

approach in concept but is concerned that delaying to 2028 could impact reliability. The PD notes that:

> … Energy Division has been working on a UCAP methodology for over a year and CAISO will be initiating a stakeholder process on a UCAP methodology. As such, Energy Division should coordinate with CAISO to develop a UCAP accreditation methodology for thermal power plants and battery electric storage systems for consideration in advance of the 2028 RA compliance year and to submit a revised UCAP proposal in Track 3 of this proceeding.[22]

Microsoft agrees that since the PD commits the Commission to conduct regularly scheduled LOLE analyses and the CAISO is already in the process of developing a UCAP methodology, finalizing a methodology and achieving consistent resource counting across CAISO and the Commission must be accomplished on an expedited timeline. CAISO has identified UCAP methodology development as a Track 1 topic with initial proposals expected in February 2025.[23] Microsoft understands that Commission resources may be limited and appreciates that the PD allows for adoption before the 2028 compliance year.

V. MICROSOFT AGREES WITH THE PD THAT THE LOCAL RA CONSTRUCT AND THE CPE SHOULD NOT BE DISMANTLED, AS IT IS CRITICALLY NECESSARY FOR MAINTAINING RELIABILITY BY ENSURING APPROPRIATE RESOURCE AVAILABILITY IN LOCAL AREAS.

The PD correctly concludes that dismantling the local RA requirements, as proposed by AREM[24] would be "greatly disruptive to the RA program" and that system RA cannot "target local reliability areas with the same granularity" required to ensure resource sufficiency in these areas. It also finds that removing the CPE framework would be a "drastic change" at this stage and would represent a "premature and unnecessary" policy without an extremely comprehensive review of

[22] PD at 21.
[23] CAISO Resource Adequacy Issue Paper at 98.
[24] "Track 2 Proposals of The Alliance for Retail Energy Markets," (Filed June 14, 2024, in R.23-10-011) at 7.

alternative policy designs.[25] We agree with CAISO's assessment that "continuing to enforce full local requirements is critical to maintaining reliability"[26] and for meeting the energy needs of customers like Microsoft. Microsoft previously filed comments in this proceeding expressing our opposition to dismantling the local construct and the local Central Procurement mechanism,[27] and we agree with the PD that such a decision would be premature.

CAISO comments[28] and the PD correctly assess that Local RA serves a specific purpose beyond system RA. The realities of the grid are such that the state contains many transmission-constrained areas—these make up the local areas designated by CAISO. Being unable to meet capacity needs in these areas would be catastrophic. As CAISO summarizes: "[s]ystem requirements only consider whether sufficient resources exist to meet requirements for the entire CAISO footprint; system requirements do not function with enough geographical granularity to ensure sufficient resources are available in local capacity areas. To avoid the risk of a capacity shortfall, the Commission should not eliminate local requirements."[29] By ensuring that capacity aligns with local demand, Local RA ensures grid stability for these high-demand pockets, which are also the areas of greatest economic productivity in California.

Regarding the Central Procurement Entity, while the local CPE has faced some challenges, the reforms and refinements in this PD should significantly address any shortcomings. The CPE remains essential for efficiently meeting local resource adequacy needs, and the proposed

[25] PD at 26.
[26] "Opening Comments of the California Independent System Operator Corporation on Track 2 Proposals," (Filed August 9, 2024, in R.23-10-011) at 7.
[27] "Opening Comments of Microsoft Corporation on Resource Adequacy "Track Two" Proposals," (Filed August 9, 2024) at 11.
[28] "Opening Comments of the California Independent System Operator Corporation on Track 2 Proposals," (Filed August 9, 2024, in R.23-10-011) at 6. *See also* "Comments of the Public Advocates Office on Track 2 Proposals" at 11.
[29] *Id.*

refinements underscore its continued value. Despite challenges, the CPE framework provides a centralized, coordinated approach to procuring resources in areas with concentrated demand, preventing potential gaps in local reliability that might otherwise arise with a fragmented approach.

A. Microsoft supports the PD's adoption of proposals that will make the Local RA program more effective. Microsoft supports the new reporting requirements as they will improve CPE ability to procure sufficient resources. The proposal to lock in Local CPE allocations to LSEs one year in advance should also be adopted.

The PD would adopt CalCCA's proposal to lock in CPE allocations to LSEs one year in advance instead of two months in advance.[30] The PD finds that this change would give LSEs more time for procurement and contract negotiations, allowing for more competitive procurement, lower costs, and a less volatile market.[31] The PD plans to implement this starting in 2025 for the 2027 RA compliance year and will reevaluate it by the end of 2027. Additionally, the Commission authorizes the Energy Division to monitor potentially disruptive factors like incremental procurement and potential market power issues.

Microsoft expressed support for this proposal in our opening comments on "Track 2" of this proceeding,[32] and continues to endorse the benefits of locking in Local CPE allocations earlier. Providing LSEs with more time for procurement and contract negotiations enables them to secure better deals and fosters a smoother local procurement process. Combined with increased visibility into LSE procurements from eliminating the voluntary self-showing process, this additional time should streamline local procurement.

[30] PD at 43.
[31] PD at 43.
[32] Opening Comments of Microsoft Corporation on Resource Adequacy "Track Two" Proposals at 13.

We believe the PD's direction for the Energy Division to collect detailed LSE data on local RA contracts and share aggregated information with the local CPE[33] will help the CPE fulfill its purpose and facilitate informed procurement. The PD seems to acknowledge that the record suggests that the non-compensated voluntary self-showing option appears to be ineffective. Local CPEs need to know the total amount of procurement contributing to their obligations as without this information they may over-procure. Considering the tightness of the RA market and the likelihood of over-procurement at the system level due to the SOD construct, limiting unnecessary costs is essential. By sharing anonymized and aggregated information with the CPE, LSEs lessen the risk of an inadvertent unfair competitive advantage, especially since these entities have existing firewalls between their CPE and LSE functions. Microsoft agrees that this measured approach strengthens the existing framework and reaffirms the CPE's role as a reliable mechanism for managing local resource adequacy.

B. The Commission should develop a new approach to address and plan for gas plant retirements in local areas, as raised by the California Environmental Justice Association ("CEJA") and Sierra Club.[34]

The PD is silent on how to establish a mechanism to address the retirement of aging gas plants and their local reliability impacts beyond asking parties to engage on the Reliable and Clean Power Procurement Program ("RCPPP").[35] There is currently no equivalent to the IRP process within local areas to assess gas plant retirements and plan for replacement capacity in the long term. The PD declines to incorporate CEJA/ Sierra Club's concerns into the Local RA process. Therefore, we encourage the Commission to consider a new track within the IRP proceeding to

[33] PD at 35.
[34] "California Environmental Justice Alliance and Sierra Club Track 2 Proposals," filed June 14, 2024, in R.23-10-011.
[35] PD at 47.

address the need for long-term planning for local areas—an issue that has been lingering for years. This IRP track could also oversee proposals for proactive planning for the phaseout of aging gas plants that are currently critical for local reliability, as raised by Sierra Club and CEJA.[36] We urge the Commission to explicitly scope this issue into a new track of the IRP proceeding as doing so would address reliability and environmental concerns in tandem.

VI. CONCLUSION

Microsoft encourages the Commission to adopt the proposed decision with minor modifications. As we joined this proceeding to advocate for the inclusion of a 0.1 LOLE as a basis for adopting RA requirements, Microsoft greatly appreciates the Commission's commitment to modeling in the RA program, and formalizing LOLE studies as a regularly occurring element of the RA program. Conducting and publishing a biannual LOLE study will enhance system reliability by providing consistent, data-driven insights into resource adequacy needs. As part of establishing the appropriate PRM for 2026, we strongly support further consideration of the Slice of Day "calibration" through Energy Division hosted workshops. The PD appropriately acknowledges the importance of additional party vetting and feedback before Staff develops a revised PRM recommendation for 2026, while also providing LSEs time to adjust their procurement as needed.

Additionally, the PD commits the Energy Division to collaborating with CAISO to develop a UCAP methodology will ensure consistent resource counting in LOLE modeling, thus improving reliability. Finally, maintaining the Local RA construct while refining the CPE framework is essential for efficiently meeting local reliability needs and optimizing procurement processes. The

[36] California Environmental Justice Alliance and Sierra Club Track 2 Proposals at 5.

measures in the PD will collectively strengthen grid reliability and affordability, promoting better resource planning and facilitating the integration of zero-emission resources over time.

We thank the Commission and Staff for the hard work and effort put into "Track 2" of this proceeding, and look forward to continued engagement in "Track 3" and beyond.

Respectfully submitted,

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