

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

Order Instituting Rulemaking to Establish
Policies, Processes, and Rules to Ensure
Reliable Electric Service in California in
the Event of an Extreme Weather Event in
2021

Rulemaking 20-11-003

**OPENING BRIEF OF THE
CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION**

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The California Independent System Operator Corporation (CAISO) submits this opening brief pursuant to the *Assigned Commissioner's Amended Scoping Memo and Ruling for Phase 2* (Ruling) issued on August 10, 2021. The Ruling set forth additional issues and an updated schedule.

I. Introduction

It is imperative the Commission modify the resource adequacy program in this proceeding to ensure electric system reliability in 2022 and beyond. The current resource adequacy framework does not require load serving entities (LSEs) to procure sufficient resources to meet demand and maintain sufficient reserves during the net demand peak period.¹ The CAISO's proposals address the resource adequacy program deficiencies by providing LSEs more accurate resource adequacy targets.

II. Discussion

A. The Commission Should Adopt the CAISO's Proposals for Immediate Resource Adequacy Program Modifications.

The CAISO submitted testimony recommending the Commission (1) set an additional system resource adequacy requirement to meet the 8:00 p.m. demand with a sufficient reserve margin; and (2) increase the existing planning reserve margin from 15% to 17.5%, at a

¹ The "net demand peak period" means the hours after the gross peak occurs, when demand is relatively high but resource availability is limited, primarily due to the unavailability of solar resources.

minimum. These proposals are similar to the proposals the CAISO advanced in Phase 1 of this proceeding, but developments since that time have highlighted the need to adopt them prior to summer 2022. LSEs provided insufficient resource adequacy capacity to meet the net peak demand period in 2021, forcing the CAISO to scramble mid-summer to procure what limited capacity was available at that late date to maintain reliability. Absent programmatic changes, there is no reason LSE procurement in future years will address these deficiencies. Changing the resource adequacy program as recommended by the CAISO will best ensure resource adequacy procurement aligns with system needs.

1. The Commission Should Adopt an Additional System Resource Adequacy Requirement to Meet 8:00 p.m. Demand with Appropriate Reserves.

The current resource adequacy program does not require LSEs to procure sufficient resource adequacy capacity to meet demand during summer net load peaks and maintain the planning reserve margin. Instead, the current resource adequacy program focuses only on procuring capacity to meet the gross peak demand,² with solar resources accounting for a significant portion of the procured capacity. These solar resources are largely unavailable during the net demand peak period, *i.e.*, the hours subsequent to the gross demand peak hour when loads remain high while solar resource output drops to zero. This creates a structural deficiency in resource adequacy capacity during the net demand peak period, as the available procured capacity is insufficient to meet the load and planning reserve margin.

a. Establishing an 8:00 p.m. System Resource Adequacy Obligation Will Address Net Demand Peak Needs.

To remedy the structural deficiency caused by the current resource adequacy program framework, the Commission should implement a new system resource adequacy requirement in addition to the existing gross peak requirement to meet demand and reserve margin requirements at 8:00 p.m. The 8:00 p.m. hour serves as a proxy for the critical net demand peak period, when demand is relatively high, but resource availability is limited, primarily due to the unavailability of solar resources. Setting system resource adequacy requirements to meet demand and the reserve margin at 8:00 p.m. will incentivize LSEs to procure sufficient resources to meet system needs during this critical period.

² The “gross peak demand” means the peak hour of demand per month, before accounting for any transmission-connected wind or solar generation that could serve that demand.

The CAISO’s analysis of summer 2021 resource adequacy showings demonstrates the magnitude of the deficiency in the current resource adequacy program. Despite explicit Commission direction in D.21-03-056³ for LSEs to procure resources capable of producing during the net demand peak period, the summer 2021 resource adequacy showings show that the procured capacity was insufficient during the net demand peak. As Table 1 below demonstrates, the resource adequacy showings for June, July, August, and September 2021, which are based on monthly gross peak load, provided effective resources significantly lower than the level necessary to maintain a 15% planning reserve margin at 8:00 p.m.

Table 1: Implied Planning Reserve Margin (PRM) of May-September 2021 Eligible Resource Adequacy Showings and Credits at Illustrative 8:00 p.m. Obligation Across CAISO Footprint⁴

Month	8:00 p.m. load (MW)	8:00 p.m. obligation based on 15% PRM (MW)	Total Resource Adequacy Capacity Shown to CAISO plus Credits, Net of Solar 8:00 p.m. (MW)	Resource deficiency at 8:00 p.m. for 15% PRM [D]-[C]	Implied PRM at 8:00 p.m. ([D]/[B])-1
[A]	[B]	[C]	[D]	[E]	[F]
May	35,720	41,077	40,106	(972)	12%
June	40,362	46,416	44,552	(1,864)	10%
July	42,162	48,486	46,671	(1,815)	11%
August	42,611	49,002	47,051	(1,951)	10%
September	43,839	50,415	48,649	(1,766)	11%

This table shows that setting system resource adequacy requirements only to meet the gross peak demand with the existing 15% planning reserve margin results in inadequate resource adequacy at 8:00 p.m. The current resource adequacy paradigm “builds in” a structural capacity deficiency at 8:00 by requiring LSEs only to procure to the gross peak demand and counting solar resources. The resources procured are insufficient to provide a 15% reserve margin at 8:00 p.m. Procuring to the 15% reserve margin based on the gross peak demand provides a reserve

³ California Public Utilities Commission (CPUC), *Decision Directing Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas and Electric Company to Take Actions to Prepare for Potential Extreme Weather in the Summers of 2021 and 2022*, Order Instituting Rulemaking to Establish Policies, Processes, and Rules to Ensure Reliable Electric Service in California in the Event of an Extreme Weather Event in 2021, R.20-11-003, March 25, 2021.

⁴ Opening Testimony of the CAISO, p. 8.

margin ranging from only 10 to 12% at the 8:00 p.m. hour during the summer months. This procurement level is insufficient to ensure there will be sufficient capacity available to meet demand during the net peak and account for potential outages, extreme weather, and contingency reserve requirements.

Summer 2021 demonstrated the risks posed by the failure to procure resource adequacy to meet the net demand peak period. Early summer high-heat events caused the CAISO to issue the first Flex Alert and its first Grid Warning of the season on June 17 and 18, 2021. On June 17th, Governor Newsom signed an emergency proclamation to free up additional energy capacity and calling for individuals and businesses to reduce energy use in the evenings. On July 1, 2021, Commission President Marybel Batjer and California Energy Commission (CEC) Chair David Hochschild sent the CAISO a joint letter requesting the CAISO to exercise its tariff-based capacity procurement mechanism (CPM) authority to procure additional capacity for summer 2021. This letter recognized the early heat wave event and the fact that “[r]esources used to meet gross peak are not adequately supporting net peak in extreme conditions.”⁵ When the CAISO subsequently sought to procure additional capacity through the CPM, it found there was limited capacity available given the late date. Given capacity shortages in the west, most of the available capacity had been procured by other LSEs much earlier. The CAISO called system wide Flex Alert events on eight individual days during 2021,⁶ all of which were designed to reduce demand though the net demand peak period.⁷

The number of Flex Alert and Warning Events have increased significantly in recent years. In 2020 and 2021, the CAISO called a total of 13 Flex Alert events compared with only three Flex Alert events in 2018 and 2019. Similarly, the CAISO called 11 Warning events in 2020 and 2021, exceeding the total number of Warning events called in the prior 12 years combined.⁸ These Flex Alert and Warning events often coincided with historical heat waves that

⁵ Joint Letter from the CPUC President Marybel Batjer and CEC Chair David Hochschild to the California ISO CEO Elliot Mainzer, June 29, 2021. Available at:

<http://www.caiso.com/Documents/CapacityProcurementMechanismSignificantEvent-JointStatementandLetter.pdf>

⁶ June 17 and 18; July 9, 10, 12 and 28; September 8 and 9.

⁷ See CAISO System Conditions Bulletin from September 10, 2021. Available at:

<http://www.caiso.com/Documents/SystemConditionsBulletin.pdf>.

⁸ <http://www.caiso.com/Documents/AWE-Grid-History-Report-1998-Present.pdf#search=awe>.

affected both California and the greater western United States.⁹ The increasing frequency of the Warning and Flex Alert events shows that the system is increasingly tight during west-wide high temperature conditions.

The Commission should address this issue in advance of summer 2022 and remedy the structural deficiency up front by requiring LSEs to meet system resource adequacy requirements for resources sufficient to meet demand and reserve margin requirements at 8:00 p.m. For 2022, the CAISO recommends instituting the additional resource adequacy requirements for only the June through September monthly showings. The CAISO recommends adopting 8:00 p.m. system resource adequacy requirements for all months beginning in 2023.

Both the Public Advocates Office (Cal Advocates) and The Utility Reform Network (TURN) support moving toward net load peak system resource adequacy requirements.¹⁰ Cal Advocates recognizes that “it is unclear if the [integrated resource plan] IRP decisions provide enough guidance to ensure that LSEs will bring resources online by 2023 with sufficient attributes as to raise the net peak PRM.”¹¹ Cal Advocates correctly identifies a key concern with relying on currently approved procurement to meet net demand peak requirements. Put simply, the resources from authorized IRP procurement may not be online and effective at the net demand peak. TURN similarly recognizes that “[e]stablishing a second System RA requirement for the net peak period would go a long way toward addressing one of the key issues identified in the Root Cause Analysis of the August 2020 rolling blackouts.”¹²

TURN also correctly notes that the CAISO’s proposed 8:00 p.m. system resource adequacy procurement requirement “will certainly do a better job of ensuring reliability than simply ignoring the issue and relying solely on the current peak-demand-based RA requirement.”¹³ TURN’s point is well-founded. Ignoring the need to meet net peak demand requirements will exacerbate deficiencies and further delay LSE action to adjust procurement practices.

⁹ For reference, see the CAISO’s discussion of the July 9-10, 2021 heat wave event from its July 2021 Summer Performance Report, pp. 20-23.
<http://www.caiso.com/Documents/SummerMarketPerformanceReportforJuly2021.pdf#search=july%20performance%20report>.

¹⁰ Opening Testimony of Cal Advocates, p. 1-5; Reply Testimony of TURN pp. 4-5.

¹¹ Opening Testimony of Cal Advocates, p. 1-5.

¹² Reply Testimony of TURN, p. 5.

¹³ Reply Testimony of TURN, p. 5.

b. The CAISO’s Proposed 8:00 p.m. System Resource Adequacy Requirement Is Consistent with Existing Processes.

The CAISO’s proposed 8:00 p.m. system resource adequacy proposal uses existing CEC demand forecast data to develop LSE-specific requirements.¹⁴ By leveraging existing data, the Commission can implement an 8:00 p.m. requirement that is consistent with the current resource adequacy requirement. Specifically, the CAISO proposes using the hourly load forecast from the CEC’s Integrated Energy Policy Report (IEPR) to determine the ratio between the load at 8:00 p.m. on the monthly peak day and the monthly peak hour. The Commission can then apply each monthly ratio to the CEC-provided LSE monthly peak loads to derive the LSE-specific 8:00 p.m. load and resource adequacy obligation. Contrary to suggestions from some parties, setting an 8:00 p.m. system resource adequacy requirement will not require a new forecasting process, but rather will use the existing forecast to adjust demand appropriately.

2. The Commission Should Increase the Planning Reserve Margin to 17.5%.

The Commission should also increase the planning reserve margin to 17.5% to provide sufficient reserves for contingencies, weather variability, and forced outages. The current 15% planning reserve margin construct is inadequate given the performance of the rapidly evolving resource fleet and changing climate conditions.

a. Industry Forced Outage Rates Support Increasing the Planning Reserve Margin.

As the CAISO noted in opening testimony, both forced outage data and the very real risk of future extreme weather events support increasing the planning reserve margin. The North American Electric Reliability Corporation (NERC) Generator Availability Data System (GADS) data show a 7.2% industry forced outage rate.¹⁵ The GADS forced outage rate is a reasonable industry accepted measure of expected forced outages and should be used to set the forced outage component of planning reserve margin at least until more CAISO-specific outage data is available. The CAISO recommends the Commission use a 7.5% forced outage rate in the planning reserve margin to allow for a more appropriate amount of expected forced outages.

Some parties object to increasing the planning reserve margin to account for higher forced outage rates, but acknowledge that summer 2020 conditions were exacerbated by “the

¹⁴ Opening Testimony of the CAISO, pp. 10-11.

¹⁵ NERC - General Availability Review (Weighted EFOR) Dashboard, www.nerc.com/pa/RAPA/Pages/GeneralAvailabilityReview.aspx; Opening Testimony of the CAISO, pp. 12-13.

failure of many plants to perform due to avoidable operational problems.”¹⁶ The forced outage component of the planning reserve margin is meant to provide the system with sufficient resources to withstand unplanned “operational problems” with generation and transmission resources. For that reason, the CAISO recommends increasing the planning reserve margin to account for higher than currently planned for forced outages. This would be more in-line with current industry experience. Continuing to utilize an outdated forced outage rate that is lower than the industry average “builds in” a procurement deficiency, leaving even less margin for error for the CASIO to meet demand and reserve requirements.

The CAISO believes that in the long-term the resource adequacy program should ultimately account for individual unit forced outage rates. To that end, the CAISO is developing an unforced capacity (UCAP) methodology to discount individual resource capacity values based on unit-specific forced outage data. The UCAP methodology will provide more accurate resource adequacy capacity values for individual generation units and will allow the Commission to adjust the planning reserve margin to account for the weather variability and operating reserve components. The CAISO recognizes, however, that it will take time to implement a UCAP approach, and UCAP cannot be implemented by summer 2022. Until a UCAP methodology is in place, the Commission should adopt a 17.5% planning reserve margin to account for higher than currently planned for forced outage rates.

Protect Our Communities Foundation (PCF) asserts “unexplained anomalies” occurred with import levels during the July 9 through 10, 2021 heatwave across the CAISO system. As an example of such an anomaly, PCF notes the CAISO imported just 561 MW during the during the peak demand hour on July 10. These were not anomalies but outcomes reflecting the always complex and dynamic conditions of a power system. PCF fails to acknowledge the significant transmission derates that occurred on July 9 on transmission interties connecting the CAISO and the Pacific Northwest. On July 9, 2021, three out of four lines north of the Malin intertie tripped due to the impact of the Bootleg fire, resulting in derates on the Malin intertie and also on the Nevada - Oregon Border (NOB) intertie. A first derate on July 9 reduced capacity on the Malin intertie from 2,967 MW to 1,800 MW. A second derate, also on July 9, reduced Malin further to 285 MW. NOB intertie capacity was also reduced from 1,622 MW to 785 MW. These significant derates caused reduced imports to the CAISO system on July 9 and July 10.

¹⁶ Reply Testimony of Protect Our Communities Foundation, p. 5.

Transmission derates like those on July 9 and 10, 2021 demonstrate the need for the Commission to set a reserve margin that better positions the CAISO to maintain reliability during such events.

b. Increasing Extreme Weather Events Support Increasing the Planning Reserve Margin.

In addition, the Commission should increase the planning reserve margin to account for higher than average demand that could result from extreme weather events. The Commission uses the CEC's 1-in-2 demand forecast with some reserve for weather variability in determining the 15% planning reserve margin. Recent data suggests accounting for demand variability to address a 1-in-5 demand forecast, which is about 4% higher than the 1-in-2 forecast, is overly conservative. Accounting for load variability to meet a 1-in-10 forecast would result in a 6.5% cushion above 1-in-2.

Recent heat events have surpassed the 1-in-5 weather levels. The August 2020 heatwave ranked as a 1-in-9.3 weather event in the CAISO balancing authority area.¹⁷ Similarly, the CAISO summer 2017 peak demand was higher than the 1-in-10 demand forecast.¹⁸ This data supports adjusting the planning reserve upward to address the potential for future extreme weather events, which are becoming more common.

Based on the industry observed forced outage data and the need to plan for increasingly extreme weather events, the CAISO recommends the Commission, at a minimum, increase the planning reserve margin from 15% to 17.5%. This modification is conservative in light of the data, but it would incrementally improve system reliability until the resource adequacy program can implement more CAISO-specific forced outage data and the Commission can undertake a further assessment of whether to account for higher demand variability.¹⁹

3. The Commission Should Accelerate Authorized Resource Procurement to the Extent Necessary to Achieve the Resource Adequacy Program Targets.

The Commission authorized new resource procurement in Decisions (D.) 19-11-016 and D.21-06-035. The Commission should expedite this procurement to the extent necessary to meet the net demand peak obligation and an increased 17.5% planning reserve margin. In D.21-03-

¹⁷ Opening Testimony of the CAISO, p. 13. *See also*, CAISO 2021 Summer Loads and Resources Assessment, p. 19. Available at: <http://www.caiso.com/Documents/2021-Summer-Loads-and-Resources-Assessment.pdf>

¹⁸ The Department of Market Monitoring at the CAISO, *2020 Annual Report on Market Issues and Performance, August 2021*, p. 31. Available at: <http://www.caiso.com/Documents/2020-Annual-Report-on-Market-Issues-and-Performance.pdf>

¹⁹ *Administrative Law Judge Steven's Email Ruling Providing Informational Notice Regarding the California Energy Commission's Draft Preliminary 2022 Summer Stack Analysis*, August 12, 2021.

056, the Commission directed the IOUs to continue procurement efforts on behalf of all benefitting customers and endeavor to meet and exceed their respective incremental procurement targets to achieve an “effective” increase in the planning reserve margin from 15% to 17.5% for the months of May through October in 2021 and 2022. Despite the “effective” planning reserve margin increase, the resources shown to the CAISO during summer 2021 (including resource adequacy credits for resources not shown on supply plans and having no resource adequacy obligations under the CASIO tariff) only met a 17.5% planning reserve margin in two-of-the-five months and fell short of even meeting the existing 15% planning reserve margin during the critical months of August and September. Table 2 below provides data regarding the shown resources (and credits) compared to the monthly obligations.

Table 2
Implied Planning Reserve Margin (PRM) of May-September 2021 Resource Adequacy Showings and Credits Based on Gross Peak Obligation Across the CAISO Footprint²⁰

Month	CEC-Adjusted Peak Load Forecast (MW)	CEC-Adjusted Peak Load Forecast Plus 15% PRM (MW) [B] x 1.15	Total Resource Adequacy Capacity Shown to CAISO plus Credits (MW)	Implied PRM at Peak Obligation ([D]/[B])-1
[A]	[B]	[C]	[D]	[E]
May	35,829	41,203	41,941	17%
June	40,629	46,723	47,918	18%
July	43,517	50,045	51,394	18%
August	43,752	50,315	50,258	15%
September	44,176	50,802	50,344	14%

As the CAISO demonstrated above, the capacity shown from May through September provided an implied planning reserve margin ranging from 10% to 12% at the 8:00 p.m. hour. Although the CAISO expects the previously authorized procurement to address these deficiencies to some extent, the resource additions should be expedited to the extent necessary to meet the resource adequacy program modifications proposed by the CAISO. The CAISO specifically notes that D.21-06-035 authorized procurement of 2,000 MW by August 2023 and an additional 6,000 MW by June 2024.²¹ The Commission should expedite this procurement to

²⁰ Opening Testimony of the CAISO, p. 7.

²¹ CPUC, *Decision Requirement Procurement to Address Mid-Term Reliability*, Order Instituting Rulemaking to Continue Electric Integrated Resource Planning and Related Procurement Processes, R.20-05-003, June 24, 2021.

the extent necessary to meet the CAISO’s recommended resource adequacy program changes. For example, the Commission should accelerate August 2023 authorized procurement to June 2023, and accelerate 2024 procurement to 2023.

4. This Proceeding is the Appropriate Venue to Make Immediate Changes to the Resource Adequacy Program.

The Assigned Commissioner’s Amended Scoping Memo and Ruling for Phase 2 explicitly stated this proceeding would examine “[u]pdates to Resource Adequacy requirements” and a “Planning Reserve Margin adjustment for 2022 and/or 2023.”²² Contrary to suggestions from other parties, the Assigned Commissioner’s Ruling expressly recognizes there may be a need for immediate changes to the resource adequacy program for 2022 and 2023.²³ Although the Commission is currently considering long-term program changes in the resource adequacy proceeding—including changes that will address net demand peak and planning reserve margin requirements—those changes likely will not likely be in place until 2024, at the earliest. In the interim, immediate modifications to the resource adequacy program are necessary to target resources to meet the net demand peak needs during summer 2022. The CAISO’s proposals achieve this goal by targeting sufficient resource adequacy procurement to serve the net demand peak in 2022, while allowing for consideration of longer-term wholesale program reforms in the resource adequacy proceeding.

Furthermore, modifications to the resource adequacy program are necessary to allow the CAISO to effectively use its capacity procurement mechanism (CPM). The joint letter Commission President Marybel Batjer and CEC Chair David Hochschild sent to the CAISO expressly requested the CAISO to exercise its tariff-based CPM authority to procure additional capacity for summer 2021. After determining that the substantial changes in the variables underlying the state’s summer resource adequacy planning assumptions constituted a significant event, the CAISO issued a CPM solicitation on July 1, 2021. One of the reasons cited for asking the CAISO to initiate backstop procurement was the fact that the resource adequacy compliance processes did not allow sufficient time for LSEs to modify resource adequacy showings for July

²² *Assigned Commissioner’s Amended Scoping Memo and Ruling for Phase 2*, Order Instituting Rulemaking to Establish Policies, Processes, and Ruling to Ensure Reliable Electric Service in California in the Event of an Extreme Weather Event in 2021, R.20-11-003, p. 4.

²³ *Id.*

and August 2021 to address the changed conditions.²⁴ Similar resource deficiencies may arise in 2022 and 2023, and the resource adequacy program modifications proposed herein will provide the CAISO maximum capability to utilize its backstop procurement authority on a more timely basis to ensure system needs are met.

Several parties raise concern regarding implementing the CAISO’s proposed resource adequacy program modifications because of the current tightness in the capacity market. The Commission expressed similar concerns in D.21-03-056.²⁵ Though the capacity market remains tight, this concern should not prevent the Commission from adopting updated system resource adequacy requirements. Indeed, the tight supply conditions should incentivize the Commission to make such changes. Experience during summer 2021 showed that other LSEs in the west procured available resources well in advance of the peak summer months. As such, when the CAISO initiated its CPM procurement in July following receipt of the joint letter, there were limited supplies available—much less than the amount the CAISO identified as necessary to ensure reliability. The fact that tight supply conditions are again expected for summer 2022 necessitates that the Commission “get ahead of the curve” and adopt the proposed changes so its jurisdictional LSEs will timely procure all needed resources before available supplies dwindle. Waiting until the middle of summer to procure needed resources is a high-risk strategy for maintaining reliability.

The Commission should begin directing its LSEs to procure resources to meet the net demand peak period. The current system resource adequacy requirements do not set appropriate targets for LSE procurement. Failing to target the correct resources will not only lead to continued misalignment between procurement and system needs, it will put the CAISO in a difficult position if it has to engage in backstop procurement mid-summer. In addition, the CAISO notes it has increasingly relied on its reliability must-run (RMR) backstop procurement mechanism in recent months to ensure existing capacity remains online until there is sufficient replacement capacity. The increasing RMR generation resources, all of which are able to serve

²⁴ Joint Letter from the Commission President Marybel Batjer and CEC Chair David Hochschild to the California ISO CEO Elliot Mainzer, June 29, 2021, p. 3. Available at:

<http://www.caiso.com/Documents/CapacityProcurementMechanismSignificantEvent-JointStatementandLetter.pdf>

²⁵ *Decision Directing Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas and Electric Company to Take Actions to Prepare for Potential Extreme Weather in the Summers of 2021 and 2022, Order Instituting Rulemaking to Establish Policies, Processes, and Rules to Ensure Reliable Electric Service in California in the Event of an Extreme Weather Event in 2021, R.20-11-003, March 25, 2021, p. 43.*

load during the net peak period, indicate that resources are available, but LSEs do not have the appropriate incentives or ability to procure all necessary resources. The CAISO's proposed resource adequacy program modifications will encourage LSEs to retain capacity from existing resources and reduce the need for additional RMR contracting.

B. Changes to the CAISO's Deliverability Study Methodology Are Not within the Scope of this Proceeding.

In opening testimony, California Wind Energy Association (CalWEA)²⁶ suggested the CAISO revise its deliverability assessment methodology to allow under development generation projects to complete development by summer 2023. The CAISO's deliverability methodology is a tariff-defined process that can only be modified through a Federal Energy Regulatory Commission (FERC)-approved process. The CAISO has no information showing the current deliverability assessment is preventing projects from completing development, but if stakeholders believe this issue exists, they should present it to the CAISO in the appropriate forum through the stakeholder initiative catalog.

C. The Commission Should Reject Joint DR Parties Proposal to Increase Dispatch Notification Times for Base Interruptible Program Resources.

The Joint DR Parties propose increasing the notification time for Base Interruptible Program (BIP) resources bidding in the CAISO's real-time market from the current 15 to 30 minutes to one to two hours.²⁷ BIP resources bid into the CAISO real-time market as Reliability Demand Response Resources (RDRR). RDRRs are valuable because of their ability to respond to real time grid emergencies, particularly in local areas. Extending the notification time for RDRR is infeasible from a real-time market timeline perspective and would significantly diminish the value of these resources.

The Commission should reject this proposal because it is operationally infeasible given the CAISO's real-time market timeline for resources that choose to bid and be scheduled in five or fifteen minute intervals. The CAISO publishes real-time results approximately 45 minutes prior to the trading hour. As a result, market results and dispatch instructions are not available one to two hours in advance.

²⁶ Opening Testimony of CalWEA, pp. 2-5.

²⁷ Opening Testimony of Joint DR Parties, p. 9.

RDRRs can alternatively use hourly block bid options to receive additional notification time. This enhancement was recently approved by FERC and implemented by CAISO following CAISO's Market Enhancements for Summer 2021 tariff amendment filing. As a result, RDRRs have additional bidding options providing greater notification times for scheduling coordinators. Previously CAISO dispatched RDRR only in the five-minute market, which was problematic for RDRRs with operational constraints that require more notice and have schedules that are more static. The recently approved modifications extend the hourly block and fifteen-minute bidding options to RDRRs. For RDRRs needing the greatest notification time, scheduling coordinators can submit hourly block bids and receive binding schedules, thereby receiving notification from 45 and 60 minutes before the hour.

D. The Commission Should Reject Sunrun's Proposal to Eliminate Any Negative Impact on Proxy Demand Response Settlement from ELRP Participation.

Sunrun recommends that "the CPUC collaborate with the CAISO to eliminate any negative impact on proxy demand response (PDR) settlement from ELRP participation." Sunrun continues that "[t]he ELRP program will presumably be dispatched only in emergency situations, which is arguably not the definition of a typical day that might otherwise belong in a performance baseline calculation" and contends that ELRP impacting the baselines of more active programs represents "an unnecessary risk that aggregators and participants will have to factor into participation decisions."²⁸

Sunrun is effectively recommending that voluntary participation be treated equal to how resource adequacy participation is treated today in baselines. As background, currently the CAISO excludes event days, such as PDR participation days, from baselines. To the extent that the PDR is dispatched within the market during any hour within an ELRP event day, that day will be excluded from the PDR's performance baseline.

Accounting for voluntary curtailment as a result ELRP participation, or any other action outside of PDR's must offer obligation, as an event day in baseline calculations is a risk that aggregators and participants should factor into their ability to meet their resource adequacy obligation and resulting performance if the resource is dispatched. ELRP is a voluntary program that is not incorporated into any capacity counting processes. The Commission should reject Sunrun's proposal on the basis that ELRP is a voluntary pay for performance energy program

²⁸ Opening Testimony of Sunrun, p 18.

outside of the resource adequacy program and a resource's resource adequacy obligation should take precedence.

E. The Commission Should Adopt SCE's Recommendation to Require ELRP Group B Participants to Nominate an Estimated Target Load Reduction and Provide the CAISO with Geographic Information.

The CAISO supports SCE's recommendation to require ELRP Group B participants to nominate an estimated target load reduction for planning purposes.²⁹ This proposal would provide added situational awareness. To enhance SCE's proposal, the CAISO recommends that investor-owned utilities (IOUs) and third parties (1) elaborate on the method used to calculate the anticipated load drop from ELRP Group B customers and (2) specify the customer's zip code, if possible, and at minimum its sub-load aggregation point (sub-LAP) location. This additional geographic information will greatly assist the CAISO in informing and improving its short-term forecasting, especially during tight supply conditions.

F. The Commission Should Not Provide a Capacity Value for ELRP.

The Commission should not provide a capacity value for ELRP as advocated by some parties.³⁰ ELRP is a voluntary pay for performance energy program that is not incorporated into any reliability planning processes for resource adequacy purposes. Resources eligible for a resource adequacy capacity payment should be subject to a must offer obligation in the CAISO's market. These resources should be eligible to provide resource adequacy either under a current program or through an all-source-resource adequacy solicitation.

²⁹ Opening Testimony of SCE, p. 38.

³⁰ Opening Testimony of CALSSA, p. 8; Opening Testimony of CESA, pp. 49-51; Opening Testimony of AEE, pp. 3-4; Opening Testimony of Sunrun, p. 16; Opening Testimony of Voltus, p. 7; Reply Testimony of Joint DR Parties, p. 2.

G. If the Commission Adopts Proposals to Modify the Bifurcation Decision³¹ to Allow Supply-Side Demand Response to Be a Load Modifier, the CAISO Recommends Parties Work with the CEC and Commission to Clarify the Resource Adequacy Treatment and Incorporate Necessary Changes into the Year-Ahead Load Forecast.

SCE proposes to move its Summer Discount Plan (SDP) from a market integrated supply side resource to load modifying. SCE's rationale is to allow SDP to dual participate with various other programs and pilots, including but not limited to ELRP.³² SCE proposes to dispatch these programs after CAISO issues a Stage 1/2/3 Emergency Notice. In addition, the California Large Energy Consumers Association (CLECA) proposes RDRR transition from a supply-side resource to a load modifying resource.³³ SCE and CLECA, in collaboration with the CEC, should clarify how the CEC's year-ahead load forecast process will treat current resource adequacy qualifying capacity values and how their proposals promote reliability.

The CAISO supports treating demand response as a load modifier that reduces the basis for setting resource adequacy requirements in the CEC's load forecast, and it also supports further enabling dispatchable demand response as a supply side resource. However, event-based programs that are not integrated into the wholesale market should not be considered a resource adequacy resource that receive a qualifying capacity value. The CPUC's Bifurcation Decision called this approach "trifurcation" and found it would inappropriately allow demand response to count as resource adequacy without requiring its integration into the CAISO market.

CLECA bases its recommendation to move RDRR from supply side to load modifying on the assertion that recent RDRR market enhancements failed to provide needed improvement and cites exceptionally dispatching RDRR as proof.³⁴ CAISO counters that supply side demand response, either as a price setter or exceptionally dispatched, both provide a measure of usability and visibility to the CAISO market operators to respond to reliability events. The CAISO observes that RDRR in the market which is underpinned by the utility BIP tariffs is a highly inflexible resource for grid operators as it requires up to a 40-minute notification to respond to instruction, can only be used once per day, and can only be used in one hour blocks.

³¹ CPUC, Decision Addressing Foundational Issue of the Bifurcation of Demand Response Programs, Bifurcation Decision, *Order Instituting Rulemaking to Enhance the Role of Demand Response in Meeting the State's Resource Planning Needs and Operational Requirements*, D.14-03-026, March 27, 2014.

³² Opening Testimony of SCE, pp. 14-16.

³³ Reply Testimony of CLECA, pp. 5-7.

³⁴ Reply Testimony of CLECA, pp. 5-7.

Through various initiatives CAISO has worked to improve demand response participation, and highlights recent enhancements to improve RDRR participation in the market. Most recently in the Summer Reliability Initiative CAISO worked to enable additional market functionality to transition RDRR from a resource that is modeled as a five minute responsive resource yet so inflexible operationally that it was primarily exceptionally dispatched—to a resource that is increasingly responsive to market conditions to include it not just in five minute dispatch but also in the 15 minute market. This initiative also provided more bidding options for RDRR including bidding in 15 minute or 60 minute blocks to better reflect the resources’ operational capabilities. Additionally in the CAISO’s Energy Storage and Distributed Energy Resources (ESDER) 4 Initiative,³⁵ CAISO added a maximum daily run time parameter to the market operation for all DR resources, including RDRR.

In response to SCE and CLECA’s concern that RDRR could be dispatched more than once per day, CAISO observes that while this could result if certain characteristics of RDRR were misrepresented CAISO is also exploring if adding minimum load costs could help better represent some RDRR. Historically, the policy for RDRR was that minimum load costs were not necessary. However, recent Summer Reliability Initiative stakeholder comments have highlighted that this policy may need to be reexamined. CAISO plans to continue working with stakeholders through a stakeholder initiative to understand if minimum load costs are relevant, and if so, what they are based on. This could help mitigate the corner case SCE raises with more than one start, which could occur in a scenario in which a non-discrete RDRR resource has a minimum operating range (pmin) of zero without a minimum load cost, and therefore viewed by the optimization as flexible to move up and down within its operating range.

RDRR is a shared reliability program with a shared obligation to be operationalized by the CAISO and by the IOUs. Just as the CAISO continues to enhance its operational functionality of RDRR, enhancements to the operational capabilities and systems to dispatch RDRR as BIP are needed by the IOUs. SCE states that “the best operational scenario is for the RDRR fleet to be called in the largest MW blocks possible... for SCE to monitor and manage program constraints.”³⁶ SCE additionally proposes moving from 69 resources to 12 resources

³⁵ ESDER 4 was approved by the CAISO Board of Governors on September 30, 2020 and is planned for implementation in October, 2021.

³⁶ Opening Testimony of SCE, p. 50.

and claims their resources operationally need to be large, yet fails to address any operational enhancements to their systems or recognize that grid needs may necessitate smaller resources that can be nimble to grid conditions. IOU operational abilities with BIP need to be updated so that RDRR is not just exceptionally dispatched but can also respond to market conditions. CAISO urges the IOUs in their 2023-2027 Demand Response Program Applications to further enhance the flexibility of BIP program design and operational dispatch capabilities to better operationalize RDRR.

H. The CAISO Recommends That Sunrun Clarify its Proposal to Streamline the Demand Response Program Sign Up Process.

Sunrun’s testimony states, “Each individual act of enrolling and un-enrolling in programs with utilities or the CAISO wholesale market requires an independent action by the customer.”³⁷ CAISO’s registration processes related to identification of participating customers is only required by the Demand Responses Provider or its Scheduling Coordinator and does not require action to be taken by individual customers. It is unclear from Sunrun’s comment if its concern with customers needing to input data is limited to utility Rule 24 and Rule 32 data exchange processes or if its concern applies to the CAISO supply side resource registration processes. Sunrun should clarify its proposal.

I. The Commission Should Reject SCE and PG&E’s Proposals to Compensate BIP/RDRR Resources for Participation in ELRP Events That Do Not Overlap with RDRR Dispatches.

Current ELRP guidelines restrict ELRP compensation for BIP resources dual-enrolled in ELRP to overlapping BIP and ELRP events.³⁸ SCE and PG&E propose to expand ELRP compensation for these dual-enrolled resources to all ELRP events regardless of overlap with a BIP event.³⁹ The CAISO dispatches BIP resources through the RDRR model which CAISO operators call only after the CAISO has declared a Warning.⁴⁰ RDRR is a key tool that operators rely on during times of extreme grid stress and the reliability of BIP resources' responsiveness is paramount to the effectiveness of this emergency reliability tool. Incentivizing BIP resources to

³⁷ Opening Testimony of Sunrun, p. 14.

³⁸ *Order Instituting Rulemaking to Establish Policies, Processes, and Rules to Ensure Reliable Electric Service in California in the Event of an Extreme Weather Event in 2021*, D.21-03-056, Attachment 1, p.10, March 25, 2021.

³⁹ Opening testimony of SCE, p. 35; Opening Testimony of PG&E, p. 2-4.

⁴⁰ For more information on CAISO emergency declarations, see:

<http://www.caiso.com/Documents/SystemAlertsWarningsandEmergenciesFactSheet.pdf>.

drop load prior to RDRR dispatch diminishes the amount of load drop available to the CAISO and therefore degrades the usefulness of these resources as resources of last resort and undermines the resource adequacy program.

III. Conclusion

The CAISO looks forward to working with the Commission and parties to ensure reliability during this clean energy transition.

Respectfully submitted

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