

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

Order Instituting Rulemaking to Oversee the
Resource Adequacy Program, Consider
Program Refinements, and Establish
Forward Resource Adequacy Procurement
Obligations.

Rulemaking 19-11-009
(Filed November 7, 2019)

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION
CONSOLIDATED REPLY COMMENTS ON ALL WORKSHOPS AND PROPOSALS**

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I. Introduction

The California Independent System Operator Corporation (CAISO) submits reply comments on the workshop reports and Track 2 proposals pursuant to the *Assigned Commissioner's Scoping Memo and Ruling* dated January 22, 2020 and the *Administrative Law Judge's Ruling Modifying Track 2 Schedule* dated February 28, 2020.

II. Discussion

In these reply comments, the CAISO addresses the following:

- Maximum cumulative capacity (MCC) categorization issues, specifically regarding how demand response resources will be counted in each category;
- Demand response qualifying capacity issues;
- Requests to revisit the current planning reserve margin (PRM);
- Hydro resource qualifying capacity counting rules;
- Proposed adjustments to local resource adequacy requirements;
- Proposed locational effective load carrying capability (ELCC) for wind and solar resources.

A. Maximum Cumulative Capacity Issues

1. The Commission Should Clarify How Demand Response Resources Will Meet Maximum Cumulative Capacity Category Requirements.

In its comments on Track 2 proposals, Southern California Edison Company (SCE) recommends that demand response resources that meet the maximum cumulative capacity availability requirements for categories other than the demand response category could elect to be included in those other MCC categories.¹ SCE specifically recommends that behind-the-meter demand response and energy storage resources should be eligible to count toward MCC categories. If the Commission were to adopt SCE's recommendation, it must first clarify how demand response resources would meet the availability and dispatch requirements to meet Category 1 and 2 requirements.² Specifically, the Commission would need to expressly adopt availability and dispatch requirements for demand response resources that correspond with the applicable MCC category requirements. Absent such requirements, there would be no requirement for the demand response provider to make its demand response resources available and dispatchable beyond the existing minimum four hour for three consecutive days' requirement. The CAISO is open to considering allowing demand response resources to count toward Category 1 and 2 resource requirements only if the Commission expressly adopts availability and dispatch requirements for demand response resources that match the eligibility criteria in Categories 1 and 2. Otherwise, they would fail to meet a basic requirement for Category 1 and 2 resources, thus defeating the purpose of the categories.

2. The Commission Should Include All Emergency-Triggered Demand Response in the Demand Response MCC Category.

SCE states that

Energy Division's recommendation of a 5.3% cap for the [demand response] MCC category is a factor of the average 2016-2018 load duration curves with the assumption that [demand response] will be dispatched 12 hours per month. This proposal may be overly restrictive as it assumes that all [demand response] will be available only for the minimum to qualify as RA. There may be a need for an additional MCC bucket to account for [demand response] that

¹ SCE, *Southern California Edison Company's (U 338-E) Comments on Workshop on Track 2 Proposals, Track 2 Proposals, and Track 2 Working Group Reports*, R.19-11-009, March 23, 2020, p. 7. (SCE Comments)

² Demand response eligibility for Categories 3 and 4 is improbable given the use- and availability-limitations of demand response resources.

is less restricted than the four hours per day for three consecutive days per month for which the 5.3% restriction appears to have been created.

SCE's Base Interruptible Program ("BIP") has significantly different program requirements, which could afford more use than the four-hour, three-day requirement. SCE's BIP is available up to six hours per day, ten days per month, and 180 hours per year. In any month, this means that the BIP resource could be available for up to five times more hours.³

Pacific Gas & Electric (PG&E) similarly supports exempting RDRR from counting toward the demand response MCC category cap.

The CAISO opposes allowing emergency-triggered demand response resources, such as SCE's Base Interruptible Program (BIP) to count toward any MCC category other than the designated demand response category. SCE notes that its BIP resources are available in more hours than the proposed demand response MCC bucket and, as result, may be eligible as Category 1 resources. However, as the CAISO stressed in its opening comments, the emergency-triggered programs, including SCE's BIP resources, should only count as demand response MCC Category eligible resources due to their significant use-limitations and inability to serve peak demand, except for being available in emergency conditions.

The Commission should not create a new MCC bucket for emergency-triggered demand response programs like BIP because the CAISO must first declare a warning or emergency to even access these programs. Emergency-triggered demand response programs are the most restricted resource adequacy capacity on the system and are not available to help serve peak load during 1-in-2 year load conditions, which is the basis for setting system resource adequacy requirements. Rather than expanding the MCC categories to accommodate such extremely use-limited emergency resources, the Commission should specify that emergency-triggered demand response programs are only eligible as demand response MCC bucket resources. These programs will not be available to serve that last increment of peak demand on a 1-in-2 year load under day-to-day operations, which is the basis of the MCC buckets design. Additionally, emergency-triggered demand response program capacity is not additional or "insurance" resource adequacy (RA) capacity; it is part of the 15 percent planning reserve margin and it displaces other viable RA capacity that could be used to serve load even during stressed

³ SCE Comments, pp. 7-8, footnotes omitted.

conditions without declaring an emergency. For these reasons, the Commission should reject requests to create a new MCC bucket to accommodate emergency-triggered demand response programs or to exempt emergency-triggered demand response from counting toward the demand response MCC Category cap.

B. Demand Response Qualifying Capacity Issues

1. The Commission Should Discontinue Crediting Demand Response Programs Against Resource Adequacy Requirements.

In Track 2 of this proceeding, the CAISO proposed a technical solution that will enable slow demand response resource dispatch that effectively meets local capacity needs. This technical solution will allow the CAISO to dispatch slow responding proxy demand response resources after the completion of the CAISO's day-ahead market run as a preventive measure to maintain local capacity area requirements in the event of a potential contingency. In its 2016 Business Practice Manual (BPM) appeals decision regarding 20-minute response requirements for demand response resources, the CAISO committed to a stakeholder process to implement a pre-contingency dispatch process for demand response resources to meet local capacity needs.⁴ By implementing the slow demand response technical solution described in this proceeding, the CAISO met this commitment. During the BPM appeals committee process, the CAISO agreed not to exercise its backstop authority in the annual timeframe due to differences in local counting for demand response. With the implementation of the pre-contingency dispatch solution and the associated explicit accounting of such slow demand response, the CAISO may need to use its backstop authority in the annual timeframe if a deficiency occurs due to resource adequacy counting differences between the Commission and the CAISO. To mitigate the potential for this type of procurement, the Commission should direct that all resources that are currently being counted to meet local resource adequacy requirements—including utility demand response that is currently credited against resource adequacy requirement—must be shown on supply plans to allow the CAISO to use them for local reliability needs.

Resources must be shown on a supply plan for the CAISO to technically implement its new pre-contingency dispatch methodology. Without the resources being shown on the supply

⁴ See <http://www.caiso.com/Documents/BPMChangeManagementAppealsCommitteeDecision-PRR854.pdf#search=pr%20854>

plan, the CAISO has no visibility into which specific resources IDs are being used to meet the local requirement, and therefore, are eligible to be dispatched by the operator using the new pre-contingency dispatch methodology. CAISO systems must be able to identify which specific resource IDs are available to be exceptionally dispatched as an RA resource. If a demand response is not shown on RA supply plans, the CAISO has no visibility into which individual resource IDs are resource adequacy capacity eligible for exceptional dispatch. This is a necessary requirement.

2. Investor-Owned Utility Demand Response Resources Should not be Exempt Resource Adequacy Supply Plans Showings Based on Historic Performance or Variable-Output Nature.

Currently, investor-owned utility demand response programs are not listed on resource adequacy supply plans. Instead, the Commission “credits” these resources against the investor-owned utility’s resource adequacy requirements. SCE urges the Commission not to require it to show its demand response programs on resource adequacy supply plans because its programs have a better track record in terms of bidding behavior and performance than resources in supply plans. SCE also argues that the Commission should not require it to show demand response resources on its supply plans because its demand response programs are subject to least-cost dispatch rules and oversight. These arguments are not compelling. Past performance does not exempt resources from RA showing requirements, and least cost dispatch rules and oversight broadly apply across the utility’s RA portfolio and do not serve as a substitute for resource adequacy showing requirements.

To support its proposal to exempt its demand response resources from supply plan showing requirements, SCE notes that “[t]he main issue is that inclusion of [demand response] resources on CAISO supply plans would require bidding resources’ MOO⁵ in the CAISO markets at their net qualifying capacity (‘NQC’), which is static for the entire month, or be subject to RAIM charges.”⁶

⁵ Capitalized terms not otherwise defined in this filing have the meanings set forth in Appendix A to the CAISO tariff.

⁶ SCE Comments, p. 13

SCE admits that

[t]he output of [demand response] resources is largely variable throughout the month (potentially daily) and could range from zero MW to above PMAX during those timeframes. The CAISO's MOO, however, does not recognize the Commission's allowance for resources to be available at differing amounts provided the resource is available at its peak value for four consecutive hours and three consecutive days.⁷

SCE mischaracterizes the applicable regulatory framework. The Commission's resource adequacy program—which does not recognize demand response resource variability—establishes the qualifying capacity for demand response resources. The CAISO uses the Commission-provided qualifying capacity values to establish its MOO. Consistent with this framework, third-party DRAM resources currently have MOOs based on the fixed qualifying capacity, regardless of whether the underlying resources are variability and/or weather sensitive. There is no reason for different resource adequacy treatment for investor-owned utility demand response programs versus third-party demand response as the resources serve the same operational and reliability purposes. Indeed, such treatment would be unduly discriminatory. The CAISO agrees the Commission's qualifying capacity counting rules should address variable-output demand response resources, but this important issue is independent of how resource adequacy demand response resources should participate in a non-discriminatory way under current Commission sanctioned resource adequacy rules.

The CAISO expressly noted its concerns with treating variable-output demand response as a fixed capacity resource. In its Track 2 proposals, the CAISO recommended that the Commission consider adopting an effective load carrying capability methodology to establish qualifying capacity values for variable-output demand response⁸ In a similar vein, SCE's comments acknowledge that demand response capacity should not be assessed as if it can deliver a fixed megawatt quantity when dispatched. However, the Commission's qualifying capacity rules currently treat investor-owned utility demand response programs as fixed capacity resources, thereby resulting in assessment as fixed capacity resources. This treatment creates an inherent problem because under the Commission's existing resource adequacy rules, the capacity

⁷ *Ibid.*, p. 13

⁸ See *California Independent System Operator Corporation Track 2 Proposals*, R.19-11-009, February 21, 2020.

provided by a variable-output demand response resource incorrectly provides the resource adequacy value as a fixed capacity resource. Unlike variable-output demand response, the Commission assesses the capacity value of other variable resources using an ELCC methodology, which compares the capability of these variable resources to a perfectly dispatchable and available “fixed” capacity resource.

The CAISO is proactively addressing how to value variable-output demand response in its Energy Storage and Distributed Energy Resource (ESDER) 4 stakeholder initiative under an ELCC methodology. The CAISO seeks the Commission’s collaboration to help further develop what the CAISO has begun in its ESDER 4 initiative and how to properly assess variable-output demand response capacity values. Because not all demand response is available or dependably dispatchable at a fixed capacity quantity, the Commission should establish an ELCC-based qualifying capacity methodology for variable-output demand response. In this way, demand response resources would have the option to be treated either as a fixed MW RA resource, as they are today, or as a variable-output RA resource with the attendant must offer obligation and capacity valuation method based on the resource election made by the demand response provider.

3. Reliability Demand Response Resources Capable of Partial Fast Response Do Not Meet Local Capacity Needs.

As the CAISO explained in its slow demand response proposal, the CAISO’s technical solution will not enable pre-contingency dispatch for slow Reliability Demand Response Resources (RDRRs) because these resources can only be dispatched once the CAISO has declared an emergency or warning event. As a result, the CAISO can only rely on fully “fast” RDRR to effectively meet local capacity contingency needs. “Fast” demand response resources are those that can fully respond within 20 minutes of a contingency event. SCE and the California Large Energy Consumers Association (CLECA) assert that some slow RDRRs can partially respond within the 20-minute window and therefore should partially count toward local capacity needs. For example, SCE contends that its BIP-30 program provides

an increasing load drop from the moment of dispatch, through the 30-minute mark when full performance is expected. Such programs should get credit for the significant number of MW they can contribute within the 20-minute timeframe. The 20-minute response

MW amount could be estimated based on the resource's historical test and dispatch performance.⁹

The CAISO has previously detailed the shortcomings of this partial counting approach on numerous occasions.¹⁰ In summary, the partial counting approach proposed by SCE and CLECA (1) is inconsistent with the current resource adequacy construct, and (2) does not ensure a firm response within the 20-minute timeframe.

First, the partial counting approach is inconsistent with the current resource adequacy program because it would require a single resource to have different local and system qualifying capacity values. The portion of the resources that could respond within 20 minutes would represent the local qualifying value, while the remaining portion of the resources would represent the system qualifying capacity value. Neither the Commission nor the CAISO resource adequacy programs are designed to decouple system and local qualifying capacity values and there is insufficient record regarding how the potential procurement and compliance impacts.

Second, there are no safeguards in place to ensure 20-minute response from a portion of a demand response program. SCE and CLECA claim that certain portions will reliably respond within 20 minutes due to the nature of underlying loads, but there is no contractual requirement or performance incentive to ensure the "fast" portion of the demand response resource will perform as needed. Instead, SCE specifically states that the fast responding portion can be "estimated" based on historical test and dispatch performance, which, in reality, would draw from an extremely limited data set, likely a single pre-arranged "test" event. SCE and CLECA fail to demonstrate that estimated performance levels from such extremely limited results are sufficiently robust to ensure that local capacity reliability needs will be met during a contingency event.

Although the CAISO cannot utilize slow RDRR to meet local capacity needs, it continues to recommend that demand response providers create separate resources that distinguish between fast and slow responding resources. CLECA explains that BIP resources "will begin almost

⁹ SCE Comments, p. 9

¹⁰ See, for example *Comments of the California Independent System Operator Corporation*, R.14-10-010, January 29, 2016, p. 7.

http://www.caiso.com/Documents/Jan29_2016_Comments_2017Track1Proposals_ResourceAdequacyProgram_R14-10-010.pdf.

immediately the process of shutting down their operations to get to their firm service levels within the program requirements. Therefore, some response will occur relatively quickly.”¹¹ If this is accurate, the BIP provider and the relevant investor-owned utility should work together to identify the processes that can be shut down within the 20-minute response period and segregate those processes as “fast” response resources. The BIP provider should then identify those processes that cannot be shut down within 20 minutes and classify those resources as slow responding.

In any event, SCE and CLECA’s partial counting proposals should not prevent the Commission from recognizing that the CAISO’s slow demand response dispatch solution represents a significant and accommodating step toward meeting local capacity requirements with demand response resources. Accordingly, the Commission should discontinue the practice of crediting demand response programs against load-serving entity resource adequacy requirements and, instead, should require load-serving entities to show all demand response resources on resource adequacy supply plans.

4. Demand Response Buyers Should Validate Contract Capacity-Based Qualifying Capacity Values through Unannounced Testing.

For demand response resources with fixed (as opposed to variable) capacity values, the CAISO recommends that the Commission set qualifying capacity values based on the defined contract capacity. However, the CAISO supports parties who recommend testing and validation requirements for such resources. For example, SCE states that it “supports using the contract capacity as the [qualifying capacity] value for third-party [demand response] contracts if the contract terms and conditions necessary to ensure reliability are similar to those in SCE’s Technology Neutral Pro Forma Contract (‘TNPFC’).”¹² SCE adds that third-party demand response contracts must include certain key provisions to ensure reliability. Specifically, SCE recommends that third-party demand response contracts include the following:

¹¹ CLECA, *Opening Comments of the California Large Energy Consumers Association on Party Proposals on Track 2*, R.19-11-009, March 23, 2020, p. 4.

¹² SCE Comments, p. 11

- Buyers shall have the ability to dispatch test events within the contract event parameters (e.g., duration of dispatches, number of dispatches per day, per month, per year) and the notice of dispatch will be per the contract terms.
- Sellers shall have the ability to request a seller dispatch by providing notice to the buyer with a date range for the request. The buyer will then determine the date, time, and duration of the seller dispatch within the overall contract event parameters and the notice of dispatch will be per the contract terms.”¹³

For fixed (*i.e.*, non-variable) demand response resources, the CAISO can support using contract capacity to establish qualifying capacity values. However, for this to occur, the Commission must ensure that the buyer can validate qualifying capacity values through market dispatches or *unannounced* tests. For variable-output demand response resources (*i.e.*, non-fixed capacity), if the Commission allows RA demand response resources to elect a fixed or variable qualifying capacity valuation methodology (as the CAISO described in section B.2 above), the CAISO could also support unannounced testing to validate forecasts and bids.

Most importantly, the Commission should not allow the demand response seller to design and prepare the capacity or forecasting validation testing. Instead, the Commission should require random, unannounced testing that reflects actual dispatch and demonstrates the capability of the demand response resource relative to its claimed capacity value and bidding behavior. Thus, the CAISO’s strong preference is for the capacity buyer to perform the unannounced capacity testing, which will best ensure that buyers obtain the capacity paid for and gives the CAISO assurance of the demand response resource’s capability.

Additionally, the Commission should require that any testing to validate a demand response resource’s capability should be for the minimum dispatch duration required. For demand response resources, this would be for four consecutive hours under current rules. Any lesser testing would be insufficient to prove that the resource’s output is sustainable and able to meet the minimum duration requirement.

¹³ *Ibid*, p. 11

5. The Commission Should Consider an ELCC Methodology to Establish Qualifying Capacity Values for Variable-Output Demand Response Resources.

The CAISO has proposed that the Commission consider an ELCC methodology to establish qualifying capacity values for demand response resources. The CAISO notes that party comments illustrate the problems with the current “fixed” quantity approach to establishing qualifying capacity values for demand response resources that are by nature variable based on weather and demand conditions. For example, PG&E states the CAISO and Commission should consider “[a]llowing for partial de-rates to account for weather sensitivity. While traditional resources are able to submit partial de-rate outages to the CAISO to indicate that a portion of capacity is unavailable, [demand response] is not able to do this due to CAISO implementation challenges and possible gaming of baselines. Allowing for a partial de-rate outage would allow [demand response] to continue to bid in all hours with the available load available.”¹⁴ This recommendation is based in large part on the fact that most demand response resources have a variable nature, but their qualifying capacity value is fixed under the Commission’s existing RA rules.

PG&E’s solution to address demand response resource variability would be to require such resources to continually submit partial outages to the CAISO to indicate the capability of their demand response resources hour-by-hour. This proposal is an unworkable and an inappropriate use of the CAISO’s outage management system. Such actions would unduly tax the CAISO’s outage management system and CAISO operations staff, especially given the large number of demand response resources in the CAISO’s system and the fact that demand response resources’ output can vary hour by hour. PG&E rightly notes that such de-rating actions would lend themselves to new gaming opportunities and create a whole set of demand response baseline calculation challenges. On that basis alone, PG&E’s proposal is not viable. It attempts to maintain demand response qualifying capacity as fixed while papering over the fact that in reality and in operation it is a variable energy resource.

¹⁴ PG&E, *Comments of Pacific Gas & Electric Company (U 39 E) on Track 2 Proposals, March 5 Track 2 Workshop, and March 11 Working Group Reports*, R.19-11-009, March 23, 2020, p. 19 (PG&E Comments)

The central tenet of the resource adequacy program is to ensure sufficient energy is available and deliverable when and where needed. If a demand response resource shown as resource adequacy cannot deliver the energy associated with its “fixed” qualifying capacity value because its output is, in reality, variable, then the resource will be assessed CAISO RAAIM charges because it is unable to fulfill its must offer obligation up to its qualifying capacity amount. To address this issue, the CAISO and the Commission must modify demand response qualifying capacity counting and market participation rules to align with the following two principles.

- The qualifying capacity valuation methodology for demand response resources must consider demand response resources’ variable output reliability contribution to system resource adequacy needs; and
- Market participation and MOO must align with variable output demand response resource capabilities.

As the grid decarbonizes and moves away from gas-fired generation, it will rely more heavily on variable, and energy and use-limited resources. Given this transformation, it is imperative that the resource adequacy program considers resource variability and limited nature when assessing the ability of the RA fleet to serve load in all hours.

The CAISO is investigating and seeking to collaborate with the Commission on applying an ELCC methodology to determine the qualifying capacity value for demand response resources that have variable-output based on weather, temperature, production, occupancy, day of week, etc. The ELCC methodology is currently used to determine the qualifying capacity for VERs and is a probabilistic approach used to quantify the reliability contribution of a generator or class of generators. As a first step to determining the ELCC, the CPUC performs a loss of load expectation (LOLE) study to determine the expected average number of events during which system capacity is unable to meet CAISO system load. The ELCC quantifies the contribution of the generator or group of generators to resource adequacy by assessing the resource’s ability to avoid a LOLE event considering inputs such as expected load, forced outage rates, and transmission constraints.

The CAISO acknowledges that the Commission simply adopting a new qualifying capacity valuation methodology using an ELCC methodology for variable-output demand

response resources, while important, does not fully alleviate challenges demand response faces due to its variable nature. As such, the CAISO is exploring market participation rules similar to those established for VERs, where a variable-output demand response resource is allowed to bid to its forecasted capability rather than its RA capacity value to fulfill its must offer obligation and be exempt from RAIM charges. Under the CAISO proposal, the existing Load Impact Protocols (LIPs) would not be used to determine the qualifying capacity amount of variable-output demand response, but rather, would be used to establish forecasted capability. Demand response resources would bid the forecasted capability to meet their MOO, and these bids would then be used to inform resource output capability for use in the ELCC calculation. These forecasts, which inform the demand response resource's bids, could be subject to testing to validate the accuracy and adherence to the forecast as discussed above in section C.

C. Planning Reserve Margin Review

SDG&E requested that the Commission review the current planning reserve margin (PRM), specifically recommending that the Commission use an LOLE study to reassess the PRM and establish a working group. Several parties support reassessing or reviewing the PRM. The CAISO supports a coordinated review of system operational needs that includes forced outage rates and ancillary service needs in connection with any PRM assessment. In addition, this PRM review should consider all hours across the course of a year rather than only peak hours.

D. Hydro Qualifying Capacity Counting

The Commission should adopt the proposal for hydro counting rules outlined in the Joint Proposal for the 2021 RA year. The proposal includes a counting methodology for hydro resources that uses 10 years of historic availability to determine qualifying capacity for hydro resources. The CAISO urges the Commission to adopt this counting paradigm because it increases visibility into the actual amount of capacity that will be available from hydro resources that are shown in the RA process.

Resources that adopt the proposed counting methodology would have lower qualifying capacity values than with current counting rules. The Alliance for Retail Energy Markets (AReM), the Office of Ratepayer Advocates and Middle River Power asked for additional information on how this alternate counting methodology could impact potential qualifying

capacity availability from the California hydro fleet. Although this analysis may be informative for determining changes to capacity procured and potential shortfalls in capacity, this analysis is not necessary for the Commission to adopt the new counting approach. This proposed methodology is important for hydro resources that currently face RAAIM exposure and for the CAISO to ensure that shown capacity is available during critical periods when resources are needed to reliably operate the grid. Compared to the current counting methodology, the proposed methodology will better reflect the actual available capacity on the system. Under the existing methodology, capacity is not consistently available for dispatch in the energy market. These changes will enhance the CAISO's ability to reliably operate the grid because hydro resources that adopt this counting paradigm will generally be available for shown amount of RA capacity.

AReM requests that the Commission wait until a UCAP counting approach is broadly applied to all resources in the California resource adequacy program. Delay is problematic. The CAISO's proposal should be adopted quickly and should be adopted for the 2021 resource adequacy cycle. As noted above, the concerns with the current counting approach exist today and affect entities operating hydro resources in the California electricity markets. The proposed approach is similar in nature to the UCAP counting approach, but it is not dependent on application of a similar methodology being applied to other resources currently in the fleet. Allowing hydro resources to utilize this counting methodology will provide the CAISO more visibility into actual availability of resources on the system and will promote better, more reliable, operations. This proposed methodology should be adopted quickly so to provide the CAISO with deeper visibility into the hydro fleet.

Calpine suggests that the alternate counting approach should be mandatory for all hydro resources with storage capability. The CAISO encourages the Commission to adopt this as an alternative counting methodology for hydro resources, so that resources are not worse off than they would otherwise be if the Commission did not put this rule in place. Some hydro resources may prefer the current counting approach, and should therefore continue to have access to it, if they elect not to use the proposed methodology.

Middle River Power asked that adopting this proposed counting methodology not limit the must offer obligation for resources to only the availability assessment hours. The CAISO

does not anticipate that this change in counting rules will alter the must offer obligations for hydro resources that are shown in the resource adequacy process. Hydro resources that are unavailable for any reason will still be required to bid all resource adequacy capacity, or submit outage cards for that capacity, so the CAISO is aware of any capacity that is not available for dispatch. This requirement currently exists and will not change if the Commission adopts the proposed counting rules.

E. Local Resource Adequacy Adjustments

PG&E recommends allowing Energy Division to lower local resource adequacy requirements if the final Net Qualifying Capacity values of the existing supply in a local capacity area are lower than what the CAISO studied.¹⁵ This proposal would reduce local capacity area reliability and the Commission should reject it. Based on the resource adequacy schedule developed by the Commission, the CAISO, and the CEC, the CAISO must first establish local capacity requirements and then allocate them to Commission and non-Commission jurisdictional LSEs before it finalizes NQC values for the next resource adequacy year. Due to established qualifying capacity rules, resources have minor increases or decreases in NQC from year-to-year.

The CAISO Tariff does not allow for increases or decreases in local capacity requirement responsibility after the assignment process. This protects both buyers and sellers who are entering into good faith negotiations for resource adequacy contracts. The CAISO Tariff allows Local Regulatory Agencies, including the Commission, to impose *higher* local capacity requirements on their jurisdictional load-serving entities than those established by the CAISO. If an LRA attempts to impose *lower* local capacity requirements than those established by the CAISO, it will only reduce compliance requirements for its jurisdictional LSEs against the LRA program requirements. Per CAISO Tariff section 40.3.2(c), the CAISO would then add local requirements to the same jurisdictional LSEs and would check compliance based on this increased responsibility. Further, to correctly implement PG&E's proposal, Energy Division

¹⁵ AReM, *Comments of the Alliance for Retail Energy Markets on Track 2 Proposals, Proposed Revisions to Maximum Cumulative Capacity Buckets, and Working Group Reports*, R.19-11-009, March 23, 2020, p.15. CalPA, *Comments of the Public Advocates Office on Track 2 Resource Adequacy Proposals*, R.19-11-009, March 23, 2020, p. 33.(CalPA Comments) SCE Comments pp.23-24. PG&E, *Track 2 Proposals of Pacific Gas and Electric Company (U 39 E)*, R.19-11-009. February 21, 2020, p. 7 at <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M328/K860/328860735.PDF>.

would have to increase local resource adequacy requirements anytime NQC values go up in any area and sub-area that used to be deficient, not only down when NQC decreases in already deficient areas and sub-areas.

The Commission should not unilaterally reduce localized capacity requirements simply because there is not enough capacity in the local area. Rather, the Commission should be directing new procurement to ensure reliability needs are met.

F. Locational ELCC Values

Several parties support PG&E's proposal for the Commission to develop locational ELCC values for wind and solar resources.¹⁶ The CAISO does not support developing locational ELCC values at this time because the benefits have not yet been properly assessed, and the cost and complexity associated with locational ELCC values will be significant. From the outset, it is not clear that resource adequacy ELCC values are designed to function as investment signals. Resources and load-serving entities make investment decisions well before the resource adequacy procurement timeframe. Instead, the CAISO recommends that the Commission use the integrated resource planning process to provide LSEs and resource developers with the proper investment signals.

Locational ELCC would only be beneficial as an investment signal if the Commission also adopts marginal or "relative" ELCC.¹⁷ Locational benefits will be significantly muted if the Commission still relies on average ELCCs. Furthermore, locational ELCC will substantially increase complexity in the resource adequacy program by creating additional needs to build and verify different locational wind and solar profiles and determine diversity benefits between the various locations. Currently, the Commission's use of single average solar and wind profiles captures the aggregated location diversity benefit associated with the existing resource fleet, avoiding the need for developing more granular profiles and allocating additional diversity benefits.

¹⁶ PG&E Comments, p. 9; Cal PA Comments, p. 16; AWEA, *Comments of the American Wind Energy Association of California on Track 2 Working Group Proposals*, R.19-11-009, March 23, 2020, p. 5. As an example, Cal PA recommends that the Commission use a locational ELCC to "help incentivize developing new resources in those areas and the use of technologies that provide optimal reliability." Cal PA Comments, p. 16.

¹⁷ Relative ELCC simply means that as ELCC values are updated, older resources are adjusted first and later resources are updated in subsequent iterations.

Before moving forward with locational ELCC values, parties must demonstrate there are real benefits that warrant the additional complexity. CalWEA correctly notes that “with regard to further differentiating locational and technology differences within resource classes...it makes sense first to study the ability of an ELCC model to accurately assess such differences before adding complexity to ELCC calculations.”¹⁸ As a result, the CAISO recommends further study to determine the potential benefits of locational ELCC values prior to moving forward with PG&E’s proposal.

III. Conclusion

The CAISO appreciates the opportunity to comment and looks forward to working with the Commission and parties to continue to refine the resource adequacy program to meet California’s quickly evolving electric capacity and energy needs

Respectfully submitted

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¹⁸ CalWEA, *Comments of the California Wind Energy Association on Track 2 Proposals and Working Group Reports*, R.19-11-009, March 23, 2020, p. 2.