

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

Order Instituting Rulemaking to Oversee)	
the Resource Adequacy Program, Consider)	
Program Refinements, and Establish Annual)	Rulemaking 14-10-010
Local and Flexible Procurement Obligations)	(Filed October 16, 2014)
for the 2016 and 2017 Compliance Years.)	

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION
REPLY COMMENTS ON FEBRUARY 9, 2015 WORKSHOP
PRESENTATIONS AND PROPOSALS**

The California Independent System Operator Corporation (“CAISO”) respectfully submits these reply comments in response to comments other parties’ submitted to the California Public Utilities Commission (“CPUC” or “Commission”) on February 27, 2015 regarding the proposals made in this proceeding for refinements to the resource adequacy program.¹

I. SUMMARY

The other parties’ initial comments raised several questions and concerns about the CAISO’s proposal to cap a load serving entity’s (“LSE”) monthly local resource adequacy (“RA”) capacity requirement at that LSE’s monthly system RA capacity requirement. In response, these reply comments provide an example and explanation of how the mechanics of the proposed cap will work. The proposed cap will apply equally to all LSEs. If any LSE’s local requirement in a transmission access charge

¹ The CAISO submits these comments in accordance with the Scoping Memo and Ruling of Assigned Commissioner and Administrative Law Judge, R14-10-010 (January 6, 2015) and the Administrative Law Judge’s Ruling Adding Workshop Documents to the Record and Modifying Reply Comment Date (February 23, 2015).

(“TAC”) area exceeds the sum of its peak demand plus planning reserve margin, that LSE’s local requirement will be capped at that MW sum in that TAC area.

These reply comments additionally address other parties’ comments related to unbundling the flexible capacity attribute from local and system RA capacity and determining the qualifying capacity (“QC”) for various resource types:

- 1) The other parties’ initial comments generally support SDG&E’s proposal to unbundle the flexible capacity attribute from the system/local RA capacity attributes.² The administrative burdens and contract disputes PG&E postulates in opposition to the proposal should not cause the Commission to reject the proposal and lose the significant benefits it would produce.
- 2) The CAISO encourages the Commission to defer considering SCE’s proposal that an RA resource not be required to have a net qualifying capacity (“NQC”) value in order to receive an effective flexible capacity (“EFC”) value. Deferral of the issue will allow the CAISO and stakeholders time to collaborate and study the implications of the proposal.
- 3) The Commission should not at this time decide on the feasibility or practicality of establishing an MCC bucket for a two-hour RA resource product. Additional research is needed to better understand the reliability impacts of RA products that provide less than the current minimum of four hours of energy and assess the amount of capacity that can be reliably

² See e.g., Comments of the Office of Ratepayer Advocates on February 9, 2015 Resource Adequacy Workshop (February 27, 2015), pp. 12-13; Comments of the Independent Energy Producers Association on the Workshop and Party Proposals (February 27, 2015), p.3; NRG Energy, Inc. Comments on Proposals (February 27, 2015), pp 12-13; Post-Workshop Comments of Shell Energy North America (US), L.P. (February 27, 2015), pp. 8-9..

accommodated for RA purposes from two-hour resources.

- 4) The Commission should defer the issue of how to count storage resources with transition times until the CAISO can study the issues and design the market tools to optimize these resources for flexible capacity.
- 5) The Commission should require that all use-limited local capacity supply demand response can be fully deployed post-contingency within 20 minutes of dispatch by the CAISO. The importance of ensuring that demand response resources can be responsive and effective post-contingency in order for the CAISO to restore the system and meet North American Electric Reliability Corporation (“NERC”) standards far outweighs the procedural reason PG&E has offered for deferring this issue to a later phase in this proceeding
- 6) The CAISO’s suggestion that the CPUC should calculate the QC value for qualifying facilities (“QF”) resources using a three-year rolling average of historic availability data would base a resource’s availability on its submission of economic bids and self-schedules in the CAISO’s day-ahead market.

II. COMMENTS

A. Clarification of the CAISO’s Proposal

In its Reliability Services stakeholder initiative, the CAISO proposed that, in instances where an LSE’s monthly local RA capacity requirement is higher than the monthly system RA capacity requirement, the local requirement should be capped at the system requirement level, which represents that LSE’s peak demand and reserve

margin requirements. There would be limited additional local reliability benefits derived from requiring additional local capacity beyond the peak demand and reserve margin requirements. Applying the cap at the system requirement level will ensure that neither an LSE nor a resource, under the applicable replacement provisions in the CAISO's tariff, will be required to replace capacity beyond what is needed for grid reliability.³

In this proceeding, the CAISO has proposed that the CPUC adopt the same cap in order to maintain consistency in the monthly showings for CPUC jurisdictional LSEs. The comments submitted by other parties show that there may be some confusion about the mechanics of proposal. For example, Pacific Gas and Electric Company ("PG&E") claims that it is not clear whether the CAISO's proposal will cap the local RA requirement at the LSE level or the TAC level.⁴ The Independent Energy Producers indicate that they are unclear about the details and practical implications of the proposal.⁵ The Office of Ratepayer Advocates claim that the proposal would allow unequal treatment of LSEs.⁶

In response to the parties' comments, and in an effort to clarify the proposal, the CAISO prepared the following example to explain how capping LSEs' local area RA capacity requirements at their system RA capacity requirements will work. The cap should apply equally to all LSEs. If any LSE's local requirement in a TAC area exceeds the sum of its peak demand plus the planning reserve margin, that LSE's local requirement will be capped at that MW sum in that TAC area.

³ CAISO Reliability Services Draft Final Proposal (January 22, 2015), pp. 78-79, and Draft Final Proposal Addendum (February 27, 2015), p. 72.

⁴ Comments of Pacific Gas and Electric Company on Resource Adequacy Proposals Made by Parties (February 27, 2015), p. 5.

⁵ Comments of the Independent Energy Producers Association, cited *supra*, p. 2.

⁶ Comments of the Office of Ratepayer Advocates, cited *supra*, pp. 12-13.

LOCAL RA CAPACITY REQUIREMENT CAP EXAMPLE

Peak Demand Requirement

This example uses two LSEs that serve load in multiple TAC areas. To determine each LSE's peak demand requirement,⁷ the CAISO sums the monthly peak load forecasts for all TAC areas in which the LSE serves load, as provided by the California Energy Commission.

LSE1 has peak demand of 100 MW and LSE2 has peak demand of 120 MW.

LSE	PGE TAC Load (MW)	SCE TAC Load (MW)	SDGE TAC Load (MW)	Peak Demand (MW)
LSE1	30	70	0	100
LSE2	100	0	20	120

Local Requirement

The CAISO determines the requirement for each local area in its annual study that identifies the amount of capacity needed in the local area to manage an N-1-1 contingency event.

LSE1's local requirements are 20 MW in PGE TAC area and 70 MW in SCE TAC area.

LSE2's local requirements are 120 MW in PGE TAC area and 20 MW in SDGE TAC area.

LSE	PGE TAC Requirement (MW)	SCE TAC Requirement (MW)	SDGE TAC Requirement (MW)
LSE1	20	70	0
LSE2	120	0	20

Proposal

The CAISO proposes to cap the local requirement at the system requirement. If an LSE's local RA capacity requirement in a TAC area is greater than its system requirement in the same TAC area, the CAISO will cap the local requirement at the system requirement. The system requirement is equal to the peak demand multiplied by 1.15 (15% planning reserve margin).

The LSE local requirement would be as follows:

LSE 1	PGE TAC	SCE TAC	SDGE TAC	Peak Demand
Load	30	70	0	100
Load x 1.15	34.5	80.5	0	115
Local Requirement	20	70	0	-
LSE1 Final Local Requirement	20	70	0	-

LSE 2	PGE TAC	SCE TAC	SDGE TAC	Peak Demand
Load	100	0	20	120
Load x 1.15	115	0	23	138
Local Requirement	120	0	20	-
LSE1 Final Local Requirement	115	0	20	-

⁷ The peak demand requirement is based solely on peak load and does not include a planning reserve margin.

As shown in the example, the final local requirements for LSE 1 in each TAC area remain unchanged because the peak load requirement plus the 15 percent planning reserve margin in each TAC area is greater than the local requirement in each TAC area in which it serves load. However, for LSE 2, the peak load requirement plus the 15 percent planning reserve margin in the PGE TAC is less than the local requirement. The same does not hold for the SDGE TAC. Under the CAISO's proposal only the local requirement in the PGE TAC would be capped for LSE 2; the local requirement for the SDGE TAC would remain unchanged.

B. Unbundling

1. Unbundling For Purposes Of Buying/Selling Capacity

At the February 9 workshop, San Diego Gas & Electric Company ("SDG&E") discussed the potential benefits of unbundling flexible capacity from the system/local capacity attributes. The parties' initial comments generally support SDG&E's proposal.⁸ PG&E, however, opposes the proposal on the grounds that it would cause increased administrative burden and potential contract disputes.⁹

The CAISO submits that the administrative burdens and contract disputes PG&E postulates should not cause the Commission to reject the proposal and lose the significant benefits it would produce. As discussed in SDG&E's January 16, 2015 comments, the proposal will improve market efficiency and facilitate transactions by individual LSEs to address deficiencies and surpluses of flexible capacity, as well as decrease procurement costs.¹⁰ These clearly identified expected benefits and the

⁸ See fn 2.

⁹ Comments of PG&E, cited *supra*, p. 8.

¹⁰ Comments of San Diego Gas & Electric Company on Administrative Law Judge's Ruling Seeking Party Comments and Proposals (January 16, 2015), pp. 5-12.

broad support in parties' comments provide a solid basis for the CPUC to approve the SDG&E proposal.

2. Unbundling For Purposes Of Determining The Effective Flexible Capacity Of A Resource

As discussed in initial comments, the CAISO supports the conceptual underpinnings of Southern California Edison Company's ("SCE") proposal that an RA resource not be required to have an NQC value in order to receive an EFC value. Further, the CAISO appreciates the implications a three-hour duration for EFC versus a four-hour duration for NQC may have for some resources. Separating NQC and EFC may also have implications for demand response resources, as noted by the Joint DR Parties.¹¹ Even SCE notes in both its proposal and initial comments that unanswered testing questions remain regarding the "deliverability" of the RA capacity when EFC is not connected to NQC.¹²

Accordingly, the CAISO encourages SCE, the Joint DR Parties, the California Energy Storage Alliance, Calpine Corporation, and other stakeholders to collaborate with the CAISO to help determine the implications and to answer the unresolved questions so the CAISO's interconnection process can consider how to study resources that seek only flexible capacity values.

C. Creation Of An MCC Bucket For Resources With Two-Hour Capability

The CAISO believes additional research is needed to better understand the reliability impacts of RA products that provide less than the current minimum of four

¹¹ Joint Comments of EnerNOC, Inc., Johnson Controls Inc., and Comverge, Inc. ("Joint DR Parties") on February 9 Workshop and Proposals, pp.3-4.

¹² Southern California Edison Company's Comments on Part Proposals Presented in the February 9, 2015 Workshop on the Resource Adequacy Program (February 27, 2015), 2-3.

hours of energy. SCE's proposal suggests that the Commission could use a load-duration curve to determine how much capacity from two-hour resources is acceptable.¹³ The CAISO disagrees. The rationale for the existing minimum four-hour availability requirement for RA resources is to ensure that there is sufficient time and energy for the CAISO to cover forecast errors given a level of uncertainty around the timing and duration of peak load events. Before assessing the amount of capacity that can be accommodated for RA purposes from resources that can provide energy to the grid for two consecutive hours, the CAISO would, at a minimum, need to assess the accuracy of the forecast in predicting the peaks within a narrower time period. For example, the CAISO would have to examine the accuracy of day-ahead and real-time forecasts in predicting the hour in which peak loads occur so that the CAISO has a high degree of confidence that two-hour RA resources could be dispatched and provide sufficient energy to allow the balancing area to successfully deal with the highest peak demand events. Without further study, a decision cannot be made at this time on the feasibility or practicality of a two-hour RA resource product.

D. Transition Times For Energy Storage Resources

PG&E proposes to allow storage resources to count the charging portion of the resource as flexible capacity if the resources have less than a 45-minute transition time between charge and discharge. While many parties support PG&E's proposal, the proposal raises two concerns for the CAISO – (1) the ability for the CAISO to effectively manage storage resources consistent with flexible capacity needs and (2) the ability of a resource to provide the full amount of the charging capability at the appropriate time,

¹³ SCE Comments, cited *supra*,

particularly for large resources such as Helms.

The purpose of RA is not a simple accounting exercise to show that LSEs have procured adequate capacity -- system, local, flexible, or otherwise. It is to provide the CAISO with resources it can use to address reliability needs when and where needed. This means that the CAISO must be able to use the resource consistent with the reliability need for which it has been procured. The CAISO's existing pumped storage model for resources with transition times is not designed to optimally address flexible capacity needs. For example, this model treats the pump and the generation as two separate resources and relies on numerous constraints within the model to avoid infeasible dispatches. Further, the CAISO must still rely on operator judgment to determine if a dispatch is ultimately feasible. The CAISO has committed to reviewing this model to determine if it is possible to make the necessary revision to allow the resource to be optimized for providing flexible capacity.

The second issue relates to the concern for feasible dispatch for the pumping load. This is a particular issue with large pumping loads such as Helms. Specifically, even if the CAISO were able to optimize a resource with transition times as outlined above, it may not be feasible to dispatch all of the capacity, pumping or generation. Large load resources may cause localized congestion and may not be able to utilize the full load to "lift the belly of the duck." For example, if the LA basin is congested, but system-wide over-generation is occurring, it may not be possible to increase load in the LA basin to effectively address the over-generation condition. Again, the proposal raises important unresolved study questions regarding the ability for the CAISO to effectively utilize all of the available flexible capacity of a resource.

The RA program is not simply an accounting program. The CAISO relies on the resources provided to ensure reliability. The Commission should defer the issue of how to count storage resources with transition times until the CAISO can study the issues and design the market tools to optimize these resources for flexible capacity.

E. Demand Response Characteristics To Provide Local Capacity

PG&E suggests that the Commission defer Calpine's proposal to modify the eligibility criteria for demand response to require that demand response resources be dispatchable within 20 minutes in order to count as local resource adequacy capacity. PG&E opposes considering Calpine's proposal at this time because the scoping memo indicates that demand response issues will be addressed in Phase 3 of this proceeding.¹⁴

The CAISO believes it is both appropriate and timely for the Commission to affirmatively decide the substantive issue raised by Calpine. Delaying consideration of this issue would not alter the need to set this response time requirement for use-limited supply demand response resources to qualify as local capacity resources. The Commission should act now because the CAISO must follow NERC reliability standards, in particular TOP-004-2 -- Transmission Operations, which requires that the CAISO reposition the system after a contingency has occurred to its pre-contingency state within 30 minutes.¹⁵ This means that when a contingency occurs, CAISO operators will require time to assess the type of contingency and its impact on grid, and

¹⁴ Comments of PG&E, cited supra, pp. 5-6.

¹⁵ NERC Standard TOP-004-2 -- Transmission Operations is available on NERC's website at: <http://www.nerc.com/layers/PrintStandard.aspx?standardnumber=TOP-004-2&title=Transmission%20Operations&jurisdiction=United%20States>

then re-dispatch and reposition the system, all within 30-minutes. Given this requirement, a 20-minute resource response time is generous and reasonable for a local capacity use-limited resource configured to respond post-contingency to assist in stabilizing the system. The CAISO cannot rely on use-limited local capacity resources that have response times to reach their full output longer than 20 minutes since this would not provide the CAISO sufficient time to restore the system to its pre-contingency state within the prescribed 30-minutes. Failing to meet this standard is not an option and can result in monetary sanctions to the CAISO by NERC if a violation occurs.

The importance of ensuring that demand response resources can be responsive and effective post-contingency far outweighs the procedural reason PG&E has offered for deferring this issue to a later phase in this proceeding. The Commission can and should move forward with this decision at this time and require that all use-limited local capacity supply demand response can be fully deployed post-contingency within 20 minutes of dispatch by the CAISO.

F. QF RA Counting Rule Changes

In initial comments, the CAISO disagreed with PG&E's proposal to allow QF resources that are only capable of dispatch in the CAISO's day-ahead market to receive QC values equal to each resource's PMax. The CAISO suggested instead that the CPUC should calculate the QC value using a three-year rolling average of historic availability data, based on the resource's bids into the day-ahead market, as that data becomes available. The CAISO clarifies that, under this approach, a resource's availability would be based on the submission of economic bids and self-schedules into the CAISO's day-market.

III. CONCLUSION

For the foregoing reasons, the CAISO respectfully requests that the Commission issue an order consistent with the CAISO's comments.

Respectfully submitted,

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