

**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.    | ) |                          |

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

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The California Independent System Operator Corporation (“CAISO”) respectfully submits these comments on the presentations and proposals for refinements to the resource adequacy program that parties submitted to the California Public Utilities Commission (“CPUC” or “Commission”) on January 16, 2015 or that were discussed at the CPUC workshop on February 9, 2015.<sup>1</sup>

**I. SUMMARY**

In response to questions about the CAISO’s proposal during the workshop, the CAISO’s comments clarify that the proposed cap on a load serving entity’s local capacity requirement at its system requirement applies to the monthly resource adequacy showings, not to the annual resource adequacy plan. The CAISO’s comments also address the other parties’ proposals related to unbundling local and system resource adequacy capacity from flexible resource adequacy capacity and determining the qualifying capacity for various resource types:

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<sup>1</sup> 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)

- 1) The CAISO supports unbundling system and local resource adequacy capacity from the flexible capacity attribute, as proposed by San Diego Gas & Electric Company (“SDG&E”)<sup>2</sup> and CESA,<sup>3</sup> but recommends that the Commission defer considering Southern California Edison’s (“SCE”) proposal to unbundle the determination of a resource’s qualifying capacity (“QC”) and effective flexible capacity (“EFC”) values<sup>4</sup> until the CAISO can assess the impact that change would have on resource deliverability and system reliability.
- 2) The Commission should defer considering SCE’s proposal to create a new maximum cumulative capacity (“MCC”) bucket for resources capable of providing energy to the grid for two consecutive hours<sup>5</sup> until the CAISO can more fully assess the reliability benefits and impacts of those resources as part of its energy storage roadmap efforts.
- 3) Pacific Gas and Electric Company’s (“PG&E”) proposal to allow a 45-minute transition time between charging and discharging for energy storage resources<sup>6</sup> cannot be implemented under the CAISO’s existing modeling design, and the CPUC should defer considering the issue until the CAISO has the necessary market product and software in place to

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<sup>2</sup> Comments of SDG&E on Administrative Law Judge’s Ruling Seeking Party Comments and Proposals, pp. 4-12.

<sup>3</sup> Comments of CESA on Administrative Law Judge’s Ruling Seeking Party Comments and Proposals, p. 3.

<sup>4</sup> Response of SCE to Administrative Law Judge’s Ruling Seeking Party Comments and Proposals, pp. 1-2.

<sup>5</sup> Id. at 3.

<sup>6</sup> Proposals and Comments of PG&E in Response to the December 12, 2014 Administrative Law Judge’s Ruling, pp. 2-11.

optimize energy storage resources with non-zero transition times that are providing flexible capacity. The CAISO could address this issue in a review of the non-generation resource (“NGR”) model the CAISO is considering this year as part of a broader effort to enhance the participation of energy storage resources in the CAISO markets.

- 4) The CPUC should continue to assess qualifying facilities (“QF”) resources that are pre-dispatched prior to the CAISO’s day-ahead market based on historic output; however, if the Commission elects to change the resource adequacy counting rules for QF resources that can be scheduled into the CAISO’s day-ahead market, but cannot respond to real-time dispatch instructions, using a three-year rolling average of historic availability data to calculate their QC values would be more representative than using each resource’s PMax as PG&E proposes.<sup>7</sup>
- 5) The CAISO agrees with Calpine Corporation (“Calpine”)<sup>8</sup> that supply-side demand response resources that count as local resource adequacy capacity, should be capable of being dispatched and fully curtailed within 20 minutes.
- 6) The CAISO does not agree with Calpine<sup>9</sup> that the resource adequacy counting rules should be modified to equate load modifying demand response characteristics with supply-side demand response resources as these two resource types are distinct and have different load impact

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<sup>7</sup> Id. at 12-16.

<sup>8</sup> Comments and Proposals of Calpine Corporation on the Administrative Law Judge’s Ruling Seeking Party Comments and Proposals, p. 2.

<sup>9</sup> Id. at 4-5.

objectives.

## **II. COMMENTS**

### **A. Clarification of the CAISO's Proposal**

In its January 16, 2015 comments, the CAISO proposed, in the annual and monthly resource adequacy process, to cap a load serving entity's local capacity requirement at that load serving entity's system requirement. Based on questions and feedback provided by parties at the February 9, 2015 workshop, the CAISO is modifying its proposal to clarify that it is only the load serving entity's month-ahead local requirement that should be capped at its system requirement.

The cap should not apply to the annual showings for two reasons. First, the system requirement is always greater than the load serving entity's local requirement for summer months. Second, because there is no annual system showing requirement for non-summer months, there would be no system requirement against which to compare the local requirement in those months.

This approach is consistent with the CAISO's proposal in the Reliability Service initiative to facilitate new substitution and replacement rules.<sup>10</sup> Finally, as noted in the CAISO's initial proposal, this approach does not require any changes to the local capacity study conducted by the CAISO.

### **B. Unbundling**

#### **1. Unbundling Local and System RA Capacity From Flexible RA Capacity**

SDG&E proposes, and CESA supports, allowing load serving entities and resources to buy and sell system/local capacity independently from the flexible capacity

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<sup>10</sup> CAISO Reliability Services, Draft Final Proposal Addendum (February 27, 2015), p. 72

attribute. Allowing load serving entities and resources to buy and sell only the type of capacity they need, or have in excess, will improve the efficiency of the bilateral capacity market, and should result in savings to ratepayers.

The CAISO supports unbundling system and local resource adequacy capacity from the flexible capacity attribute as proposed by SDG&E and CESA. This unbundling proposal would not impact the adequacy of system/local or flexible capacity in meeting the reliability needs of the CAISO. Under this unbundling proposal, a resource could be shown as a flexible capacity resource by one load serving entity and as a system resource by another load serving entity, and both the overall flexible and system requirements could be fulfilled. Further, under the CAISO's tariff provisions on flexible resource adequacy capacity, there are separate showing requirements and plans for system/local resource adequacy capacity and flexible resource adequacy capacity, which would accommodate unbundling these capacity attributes.

At the workshop, parties asked questions about how unbundling flexible capacity would work for cost allocation mechanism ("CAM") resources. The CAISO understands that, under the current resource adequacy framework, the capacity attributes of CAM resources cannot be unbundled. An energy service provider's ("ESP") resource adequacy requirements are credited for its proportionate share of the CAM capacity and the investor owned utility is required to show the CAM resource on its resource adequacy plans. Accordingly, an ESP does not have property rights for the CAM capacity (system/local or flexible), but an investor owned utility would not be permitted to sell the system/local or flexible capacity because the ESP has paid for the capacity.

Modifications to the CAM construct may be required to allow the separation of

system/local and flexible capacity for CAM resources. The CAISO encourages the CPUC to make those changes so that load serving entities, and both non-CAM and CAM resources, can capture the benefits that would come from buying/selling flexible capacity independently from local/system resource adequacy capacity. However, the Commission should allow unbundling for non-CAM resources in this proceeding.

## **2. Unbundling EFC And NQC Values**

Currently, a resource must first have an NQC for local and system resource adequacy capacity in order to have an EFC for flexible resource adequacy capacity. SCE proposes that a resource be eligible to have an EFC without having an NQC. CESA<sup>11</sup> and the Joint DR Parties also support similar proposals.<sup>12</sup>

SCE's unbundling proposal differs in an important way from the SDG&E proposal discussed above. Specifically, SCE's proposal would allow a resource to be a flexible-only capacity resource. This implies that the resource would not be subject to the CAISO's deliverability study that is required to obtain an NQC value, and the resource would not be required to deliverable during peak hours.

The CAISO does not oppose consideration of the SCE, CESA, or the Joint DR Parties proposals – at a later time. The proposals are not ripe for consideration at this time; their impacts are uncertain, and they require further study. SCE notes its proposal would require “modifying the EFC process to require a resource to be deliverable in order to qualify for an EFC.”<sup>13</sup> The CAISO agrees that there is a need to ensure

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<sup>11</sup> Comments of CESA on Administrative Law Judge's Ruling Seeking Party Comments and Proposals, pp. 2-3

<sup>12</sup> Joint Comments Of EnerNOC, Inc., Johnson Controls, Inc., And Converge, Inc. (“Joint DR Parties”) Pursuant To ALJ's Ruling Of December 12, 2014, pp. 2-3

<sup>13</sup> Response of SCE to Administrative Law Judge's Ruling Seeking Party Comments and Proposals, p. 2.

flexible-only resources are deliverable during periods when flexible capacity is needed. However, resource deliverability is a matter for the CAISO transmission interconnection study process, and the details of implementing the SCE proposal must be dealt with in the CAISO annual cluster study process. Accordingly, the CAISO recommends that the Commission defer considering SCE's proposal to unbundle resource adequacy resources' NQC and EFC values until the CAISO can, through its deliverability study process, assess the impact that the change would have on resource deliverability and system reliability.

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

SCE proposes that the Commission create a new MCC bucket for resources that are capable of providing energy to the grid for two consecutive hours. SCE asserts that two-hour resources are "capable of increasing reliability during the periods of highest need."<sup>14</sup>

Two-hour resources may contribute to reliability during the highest peak hours in certain instances and in certain areas, as SCE asserts. However, there currently is no data or operational experience to assess what the reliability benefits and impacts of these resources would be under the resource adequacy construct.

Before creating an MCC bucket dedicated to two-hour resources, additional analysis must be conducted to determine how to measure and utilize two-hour resources to enhance reliability and identify what quantity of capacity from these resources can be accommodated without degrading reliability. Accordingly, the Commission should defer considering SCE's proposal to create a new MCC bucket for

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<sup>14</sup> Id. at 3.

resources capable of providing energy to the grid for two consecutive hours until after the CAISO develops the necessary data regarding the reliability benefits of those resources as part of its energy storage roadmap efforts and completes the primary work on developing the durable flexible capacity product. This is necessary to properly assess SCE's proposal

#### **D. Transition Times For Energy Storage Resources**

PG&E proposes to allow a 45-minute transition time between charging and discharging for energy storage resources.<sup>15</sup> As discussed in the CAISO's January 16, 2015 comments, the CAISO does not currently have a resource model that can effectively manage and optimize an energy storage resource with a non-zero transition time consistent with existing flexibility needs, nor does the CAISO tariff allow energy storage resources that are not listed as NGR to count the charging portion of the resource towards flexible capacity needs because the charging portion would not have an EFC. The CAISO is concerned that, if the CPUC allows transition times to count as flexible resource adequacy capacity, it would increase the probability of system level flexible capacity deficiencies, thereby increasing CAISO backstop procurement.

Although PG&E has provided the charge and discharge data for Helms for 2013 through part of 2014 to support the flexibility of that resource,<sup>16</sup> that data offers little support for PG&E's assertion that resources with transition times can be operated in such a way as to ensure the flexible capacity needed by the CAISO. For example, the data does not describe the conditions under which Helms shifted from pumping to

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<sup>15</sup> Proposals and Comments of PG&E in Response to the December 12, 2014 Administrative Law Judge's Ruling, pp. 2-11.

<sup>16</sup> Id. at 5-6.

generation, the frequency of shifting per day, the conditions under which Helms was not able to pump, or the nature of the dispatch instruction. In short, the hypothetical scenarios and data provided by PG&E do not sufficiently capture the nature of the transition time as it pertains to reliable grid operations and cannot reasonably be extrapolated to other resources.

PG&E also asserts that “how much a storage resource counts toward flexible RA should be dependent on the operating capabilities of the resource, not on any limitations of the CAISO’s current software systems.”<sup>17</sup> PG&E ignores that a primary goal of the resource adequacy program is to ensure that the CAISO has adequate capacity to reliably operate the system. The CAISO’s ability to do this is based, in part, on its ability to manage resources through market products and modeling software to meet system needs.

Allowing a 45-minute transition time between charging and discharging for energy storage resources cannot be implemented under the CAISO’s existing modeling design. This issue should therefore be deferred until the CAISO has the necessary market product and software in place to capture the nature of non-zero transition times. Development of that product could begin in a review of the NGR model the CAISO is considering this year as part of a broader effort to enhance the participation of energy storage resources in the CAISO markets.

#### **E. QF RA Counting Rule Changes**

PG&E proposes new counting rules for QF resources that can be scheduled into the CAISO’s day-ahead market or pre-dispatched, but are not capable of responding to

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<sup>17</sup> Id. at 21.

real-time dispatch instructions. Specifically, PG&E proposes that these resources receive QC values equal to PMax.<sup>18</sup>

The CAISO understands that continued use of historic data for some QF resources will have a negative impact on some QF resources' calculated QC values. As the need for flexible capacity increases and the CAISO dispatches some resources less in the day-ahead market, the QC value of those resources will decrease simply because they were not dispatched as often. However, using PMax will likely over count the QC value of these resources. For example, using PMax as the QC value could result in a load serving entity including a resource on a monthly resource adequacy plan for the resource's full QC at PMax of 100 MW even though that resource only reaches that output once a year. Using PMax as the QC value for QFs fails to recognize that the output of a QF resource is based on the industrial processes and host load of the resource and that the PMax of the resource may be reached only in select operational conditions.

If the Commission elects to change the resource adequacy counting rules for QF resources that can be scheduled in the CAISO's day-ahead market, but cannot respond to real-time dispatch instructions, then it should use a three-year rolling average of historic availability data, as it becomes available, to calculate the QC value. This would be more representative than using the resource's PMax as PG&E proposes. Specifically, resources that bid into the day-ahead market have demonstrated their availability by their bids. Even if all of the available capacity is not dispatched, the resource's QC value can be assessed based on the amount of capacity it bid and could

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<sup>18</sup> Id. at 12-16.

have provided. Once current availability data replaces all of the historic output data, the QC based on that data will better reflect the actual availability of the resource. The Commission should not set the QC values for these resources at artificially high levels that do not reflect actual experience and realistic capabilities.

However, there is a subset of QF resources for which the QC value should continue to be set based on historic data. This subset is comprised of QF resources that must be pre-dispatched outside of the CAISO's day-ahead market because they are responding non-CAISO market instructions. These pre-dispatched resources are being dispatched to the levels that represent a combination of their output capability and their benefit to the system, which is what the QC capacity value of a resource should reflect. Because the resource is dispatched prior to the CAISO's day-ahead market, it is also reasonable to assume its availability is its pre-dispatch output. Thus, it is reasonable to continue to set their QC based on historic output. In short, the historic output is representative of the appropriate QC value for pre-dispatch QF resources.

#### **F. Demand Response Characteristics To Provide Local Capacity**

The CAISO supports the comments made by Calpine concerning demand response characteristics, namely that supply-side demand response resources that count as local capacity must be capable of being dispatched and fully curtailed within 20 minutes. Fast response is a necessary characteristic for an energy-limited supply resource, like supply-side demand response, whose purpose is to help the system fully recover within 30 minutes after a contingency has occurred. This is in contrast to a resource that the CAISO can dispatch more frequently, in anticipation of and to prevent a contingency in the first instance. For example, pre-contingency dispatch of long-start

demand response resources ensures load levels are reduced to within safe limits as a preventative measure or, for a long-start generator, the resource is online and prepared to ramp should a contingency occur. Further, pre-contingency dispatch would require the dispatch of demand response resources more frequently than what historic use-limited demand response operators and customers may find acceptable.

**G. Consistent Treatment Of Supply-Side DR Resources And Load Modifying DR Resources**

In its comments, Calpine states that:

The RA counting rules developed in these working groups for load-modifying DR should be no less stringent than the rules for supply-side DR developed in this proceeding (e.g., if supply-side DR that counts for local RA is required to have a 20-minute notification time, then load-modifying DR that reduces a load-serving entities' local RA obligation should have a notification time no longer than 20 minutes).<sup>19</sup>

Supply-side demand response resources cannot be equated with and or treated as load modifying demand response resources. Supply and load modifying demand response resources have very different load impact objectives. For instance, the purpose of a supply-side demand response resource is to meet the system's day-to-day load serving needs, while the purpose of a load modifying resource is to persistently reduce the load, and thereby the number of supply resources that must be procured to serve that load in the first instance. Accordingly, requiring supply and load modifying resources to have the same or similar characteristics is not necessary given their different load impact objectives.

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<sup>19</sup> Comments and Proposals of Calpine Corporation on the Administrative Law Judge's Ruling Seeking Party Comments and Proposals, p. 5.

### 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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