

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
Local Procurement Obligations.

Rulemaking 11-10-023
(Filed October 20, 2011)

**COMMENTS OF THE
CENTER FOR ENERGY EFFICIENCY AND RENEWABLE TECHNOLOGIES
ON RESOURCE ADEQUACY AND FLEXIBLE CAPACITY
PROCUREMENT JOINT PARTIES' PROPOSAL**

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The Center for Energy Efficiency and Renewable Technologies (CEERT) respectfully submits these Comments on the Resource Adequacy (RA) Flexible Capacity Procurement Joint Parties' Proposal ("Joint Parties Proposal"), included as Attachment A to the Phase 2 Scoping Memo and Ruling of Assigned Commissioner and Administrative Law Judge (ALJ) ("Phase 2 Scoping Memo") issued in this RA rulemaking on December 6, 2012. These Comments are timely filed and served pursuant to the Commission's Rules of Practice and Procedure, the Phase 2 Scoping Memo, and the ALJ's Ruling sent to parties by electronic mail on December 19, 2012, extending the due date for these comments to December 26, 2012.

**I.
INTRODUCTION**

On the issues of "flexibility" for RA purposes and flexible capacity procurement, CEERT has actively participated in this proceeding through workshops and submission of comments on proposals made by the California Independent System Operator (CAISO) and the Energy Division to address flexible capacity needs with regard to local capacity requirements over the next several years. CEERT continued this participation by filing comments on the Proposed Decision in May 2012, issued by the Commission as Decision (D.) 12-06-025 on June 21, 2012.

While the Commission concluded in D.12-06-025 that there “are good reasons to define ‘flexibility’ for Resource Adequacy purposes and identify the types of flexible resources needed to maintain reliability,” the Commission determined that record at that time was not sufficient to adopt either proposal.¹ Instead, the Commission committed to “study flexible capacity proposals further in this proceeding,” with the intent “to issue a decision by or near the end of 2012 on this topic.”²

To that end, the Energy Division held a workshop on August 13, 2012, to examine “developing methodologies to define flexibility, determine flexibility needs, and determine generator capability to fulfill those needs.”³ CEERT also participated in this August 13 Workshop. On October 29, 2012, as indicated in the Phase 2 Scoping Memo, the CAISO, Southern California Edison Company (SCE), and San Diego Gas and Electric Company (SDG&&E) “submitted a joint proposal” that “explores various topic areas including how to establish a flexibility requirement and the developing of counting rules for various resources to count towards flexible capacity procurement obligations.”⁴

In response to this Joint Parties Proposal, the Phase 2 Scoping Memo “poses” multiple questions in Attachment B of that ruling on which parties can file comments today. While CEERT responds to certain of those questions herein, CEERT believes it is imperative for the Commission to first examine the proposal on an overall basis, as described below.

Most significantly, on December 20, 2012, just prior to the due date for these comments , the CAISO held a Workshop on the Joint Parties Proposal. At that Workshop, the Joint Parties stated that the primary reason for developing this Proposal is to ensure that Variable Generation

¹ D.12-06-025, at p. 2.

² Id.

³ Phase 2 Scoping Memo, at p. 3.

⁴ Id., at pp. 3-4.

(VG) and other non-gas resources (for example, Demand Response or the judicious curtailment of VG resources) should not be allowed to “crowd out” the ability of dispatchable resources from meeting LSE RA showings.

By doing so, these very rules proposed by the Joint Parties will inappropriately ensure that the only resources available for meeting LSE RA showings are in fact conventional thermal generation. This result will have the perverse effect of incentivizing development of new gas resources to meet these flexible capacity needs, thereby completely “crowding out” the ability of non-thermal resources from being able to compete with the conventional resources procured to satisfy these new flexible capacity rules. Such an outcome will increase reliance in California on gas resources, *instead of following* this Commission’s “loading order” preferred resources, such as demand response, to meet energy needs. To avoid this outcome, CEERT recommends, among other things below, that the Commission authorize a “pilot” aimed at procurement of a defined amount of non-traditional loading order preferred resources to determine how they can be used to satisfy the needs of the grid for dispatchable, flexible resources.

II.
**IT IS IMPERATIVE FOR THE COMMISSION TO FIRST EXAMINE
AND CONSIDER THE JOINT PROPOSAL ON AN OVERALL BASIS.**

Before answering the questions posed by the Phase 2 Scoping Memo, CEERT would like to step back and examine the Joint Parties Proposal itself. To begin with, the Joint Parties Proposal has three essential components, as follows:

- Establishes a definition of “flexible capacity” requiring the resource to have the capability to respond to CAISO dispatch instructions and sustain output over a continuous three-hour period;

- Establishes an obligation by load-serving entities (LSEs) to procure “flexible capacity” equal to a CAISO determined 1 in 2 year maximum monthly 3 hour ramp plus one half of required operating reserves; and
- Requires that the procured flexible capacity resources must offer economic bids in the CAISO markets.

CEERT has several overarching concerns with the Joint Parties Proposal.

First, while the proposal is self-described as an “interim proposal,”⁵ there is no explanation as to why the proposal is interim in nature and no mechanism is described or provided to evaluate this interim proposal before establishing a “permanent” Flexible Capacity Procurement process. The only concrete reference is to “the interim 2014-2017 period.”⁶

CEERT is left to assume that the Joint Parties intend for their proposal to operate as written for four years. At the same time, it is widely acknowledged that the existing California generation fleet has enough inherent flexibility to meet ramping needs through 2017 when Once Through Cooling (OTC) retirements begin and a large tranche of photovoltaic (PV) capacity becomes operational. No new “flexible” resources are required during this interim period, and no new resources can be built on the strength of a one-year forward obligation. To the extent that there is some “need” for additional resources, it would only arise to correct deficiencies in CAISO markets and would *not* be due to a lack of flexibility in the generation fleet.

Therefore, the *only* reliability benefit offered by Joint Parties Proposal is through the operation of the must- offer obligation. The remainder of the proposal is simply window dressing for practice.

Second, the definition of “flexibility” significantly understates the ability of existing resources to respond to either contingency reserve needs or ramping requirements. Neither

⁵ Phase 2 Scoping Memo, Attachment A, at p. 3.

⁶ *Id.*, at p. 4.

distributed generation nor any type of demand response nor a significant fraction of existing conventional generation resources are willing or even capable of submitting economic bids into CAISO markets over a continuous three-hour period. However, many of these resources are perfectly capable of making a dispatchable step change in output or submitting economic bids for less than three continuous hours.

By conflating operating reserves and ramping requirements, the Joint Parties Proposal inflates the defined need for flexibility but restricts the supply. Thus, the price of “flexibility” is by definition higher than it could be for any conceivable fleet of resources. As a result, this “interim” proposal offers little if any reliability benefit for an undetermined but clearly inflated price. This conclusion is inevitable and fundamental to the proposal

Even more troubling is the Joint Parties assertion at the December 20 CAISO Workshop that VG and other non conventional resources may “crowd out” the ability of dispatchable resources from meeting flexibility needs. The Joint Parties are really co-opting the meaning of this term. The Joint Parties are using this term to refer to the fact that, using the current Commission approach of calculating RA from the 70% exceedance methodology, which only looks at availability of generation to meet load during peak summer hours, solar and wind RA will satisfy LSE RA showings without necessarily being able to provide dispatchable resources to the CAISO. In turn, apparently from the Joint Parties’ perspective, this outcome would therefore “crowd out” the ability of conventional resources to provide dispatchable RA to the CAISO. So, the Joint Parties are foreseeing a situation where the CAISO is short dispatchable resources to meet increasing system flexibility needs.

Of course this entire problem would be minimized if RA were calculated using an Effective Load Carrying Capability (ELCC) type calculation, which looks at the ability of new

generation to meet net load across all hours of the day using net load shapes that are reflective of the actual fleet makeup and performance. Note that in this case, solar resources would receive very low RA values since adding PV resources to the system would simply be adding incremental generation during times (mid day) where there is low system net load, and also the new peak of net load would be occurring later in the day, after the sun sets, where the addition of incremental PV resources cannot carry load. But this is exactly right: PV should in fact receive low RA values under these circumstances, which would provide room for other resources (conventional as well as DR) to meet load. So instead of directly addressing the deficiencies of the current RA accounting practice, which admittedly may compromise the ability of the CAISO to reliably meet load, the Joint Parties are instead proposing a restriction of flexible RA capacity procurement to generation that can meet a continuous 3 hour ramp.

However, if only 3 hour ramping resources are procured in order to provide flexible RA capacity to the system, then since only conventional generation can satisfy this constraint, conventional resources will therefore be built to satisfy these ramping needs. These conventional resources will, therefore, “crowd out” (defined in contrast to the Joint Parties meaning) the ability of other resources, most notably DR, but also judicious use of VG curtailment, from providing flexible ramping to the CAISO.

If the Commission, CAISO, or State is to “pilot” the concept of procurement of flexible capacity as part of the annual RA process, clearly, a pilot should be adopted to explore the role that can be played by non-traditional, but preferred, resources in the procurement process. The Joint Parties proposal clearly thwarts any such efforts. Thus, if LSEs are to be required to procure conventional fossil resources that meet the overly restrictive “flexibility” definition in the Joint Parties Proposal, they should also be required to procure a defined amount of non-

traditional loading order preferred resources that would then participate in a pilot to determine how they can be used to satisfy the needs of the grid for dispatchable, flexible resources. As part of this process, the commission should also take a close look at how the standard method for calculating RA is creating an artificial shortage of resources able to provide dispatchable resources to the CAISO.

CEERT would note that the question is not *if* these resources can provide grid flexibility, but *how*. Further, the “*if*” question has already been answered by the 2009 Participating Load Pilot Project. The CAISO Final Report of that pilot states:

“The ISO can confidently state that the PLP [Participating Load Pilot] projects have demonstrated and affirmed that smaller demand response resources can successfully participate in and enhance ISO markets and reliably provide ancillary services, on a basis closely comparable to supply-side resources.”⁷

All that remains to be considered, therefore, is *how* these resources can and will provide grid flexibility. A pilot to do so should be a required priority before any pilot that results from the Joint Parties Proposal.

III. CEERT RESPONSES TO QUESTIONS (ATTACHMENT B)

CEERT provides its initial responses to the questions posed in Attachment B of the Phase 2 Scoping Memo. CEERT does not respond to all of the questions at this time, especially with information regarding the Joint Parties Proposal in an ongoing, evolutionary state. CEERT reserves the right to respond further to those questions not specifically identified here in further Workshops or comments on the Joint Parties Proposal.

⁷ CAISO 2009 Participating Load Pilot Project Report, February 18, 2010 p.4

A. Reliability Risk

2. *This proposal attempts to address reliability risk by recommending that the CPUC establish a monthly interim flexible capacity obligation that is based on the ISO's identified flexible capacity needs.*

It is CEERT's position that the Commission should use the "interim" period until 2017 to qualify as broad a range of resources as possible to provide "flexibility" to the grid. To this end, each RA year prior to 2017 should include a robust set of "pilot programs" accompanied by a rigorous post-mortem evaluation to set next year's priority tasks. This approach is necessary to meet and adapt to changing energy sources and profiles expected through the end of the decade.

C. Development of Eligibility and Needs Methodology (Joint Parties Proposal Section 3.1 And Section 3.2)

5. *According to the proposal, "flexible capacity need" is defined as the need of the ISO to meet ramping and contingency reserves. (Section 3.1)*
 - a. *Is this an appropriate definition of flexibility? If not, please explain what might be an appropriate definition and why.*
 - b. *Should flexible capacity needs encompass all of the contingency reserves (E.G. Spin, Non-spin, Regulation up/down)?*

It is CEERT's position that the answers to these questions are "no." There is absolutely no need for resources to submit economic bids in the energy markets in order to supply operating reserves. Conflating these needs only serves to inflate the apparent requirement for resources that respond to normal CAISO dispatch instructions.

6. a. *Is the above [provided] formula an appropriate measure to calculate flexibility needs and why?*

It is CEERT's position that the answer to this question is "no" for the reasons stated in answer to Question 5 above.

- b. *According to the proposal, flexible capacity need is based on how much ramp capability a resource can offer and sustain over a continuous three hour period. Is*

three hours an appropriate duration in which to measure ramping? Support your answer with empirical data when possible.

It is CEERT's position that the answer to this question is also "no." Resources that cannot or do not wish to submit economic bids into CAISO energy markets or resources that cannot sustain energy output for three hours can easily contribute to either contingency reserves and/or operating reserves. As a simple example, many conventional fossil resources that presumably will be used for load following ramping take as much as 90 minutes to become synchronized to the grid and reach Pmin from which they can then ramp. Many of these resources have Pmin of 40% of maximum output. Resources that can only sustain an energy ramp for 90 minutes could be used to cover this startup period. This would avoid over-generation before the ramp period and effectively allow the conventional resource Pmin to effectively count toward the flexible capacity requirement.

- c. Is adding an annually adjustable error to ramping requirements term to account for uncertainties appropriate?*

If an "error term" is used to account for the uncertainties involved, that must mean that the equation does not adequately represent the complexity of the requirement. At a minimum, that error term should be able to be either positive or negative and definitely should be "interim" until the weakness in the underlying equation can be corrected.

- e. It appears flexible capacity procurement is overlapping with the determination of operating reserves. Is this appropriate? Can some amount of the PRM be offset, and how can the CPUC manage the overall RA obligation if portions are met with more flexible resources?*

It is CEERT's position that the answer to this question is "no" for the reasons stated in answer to the above subparts of Question 6.

E. Flexible Capacity Must-offer Obligations (Section 4)

9. *In addition to the must-offer obligations that currently apply to RA resources, the flexible capacity must-offer obligation for flexible resources would require resources to submit economic bids into the ISO's real-market between a predetermined set of hours (i.e. 5AM to 10PM).*

a.-c.

d. *Can this risk be alleviated partially by incentivizing resources with Must- Offer Obligations to submit economic bids in the ISO market instead of self-scheduling? What changes could be contemplated within regulatory proceedings at the ISO and the CPUC, to make it conducive for resources to submit economic bids instead of self-scheduling their energy?*

It is CEERT's position that the must offer obligation must be in place pending the answer to **subpart d** of this question (9). CEERT believes that a comprehensive analysis of the reasons for self-scheduling and revisions to the CAISO tariff and/or provisions of gas procurement contracts entered into by the Scheduling Coordinator or other entity controlling the dispatch of the self-scheduled resource *must* be undertaken and this problem solved as soon as possible. The CAISO is the only centralized energy market in the country that experiences significant self-scheduling. There is no question that this practice significantly reduces apparent flexibility of the generation fleet and drives up market costs for loads not self scheduled or self scheduled by others. This issue, therefore, is critical and must be addressed immediately.

F. Eligibility (Section 5.1)

10. *According to the proposal, a resource must be able to ramp and sustain energy output for a minimum of three hours to qualify as flexible. Is this a suitable condition to determine eligibility for flexible resource? (Section 5.1) Please explain why or why not.*

It is CEERT's position that the answer to this question is "no," for the reasons offered in its above responses.

G. Flexible Counting Conventions (Section 5.3.2)

16. *In order to increase transparency over RA capacity procurement, what data could be made public within confidentiality restrictions?*

It is CEERT's position that all of the data can and should be made public. There is absolutely no reason to keep any of this data confidential.

17. *Should there be different qualitative and quantitative metrics of flexibility for demand response and storage resources?*

a. *Is so, what characteristics or criteria could be used to quantify flexibility for storage devices and demand response?*

b. *What demand response programs or types are most suitable for flexible resource eligibility?*

As stated in CEERT's comments and responses above, the question is not *if*, but *how*. This needs to be a priority task during the first year of the "interim period." The Commission should require procurement of a defined meaningful amount of demand side resources and then, determine *how* to integrate these resources into the CAISO ancillary services markets and annual RA program. It is not necessary to pre-determine all of the details of this task. Instead, procurement should be limited to a few hundred megawatts initially, with experience from the 2009 Participating Load Pilot and other centralized capacity or "capacity-like" markets around the world to guide any future or further procurement. The next four years should be used to test need and appropriate responses before any "real" need emerges and requires more permanent solutions.

IV. CONCLUSION

CEERT appreciates this opportunity to comment on the Joint Parties Proposal. However, CEERT asks the Commission to take into account CEERT's comments and responses herein and move toward a "pilot" approach for the next four years that includes consideration of non-

traditional, preferred resources any permanent approach is adopted. CEERT looks forward to providing additional input on this proposal and any Energy Division proposal in 2013.

Respectfully submitted,

December 26, 2012

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