

Stakeholder Comments Template

**Flexible Resource Adequacy Criteria and Must-Offer Obligation
Straw Proposal, July 25, 2013**

Submitted by	Company	Date Submitted
David Schlosberg dschlosberg@brightsourceenergy.com (510) 250-8816	BrightSource Energy, Inc.	August 15, 2013

This template is for submission of stakeholder comments on the topics listed below, covered in the Flexible Resource Adequacy Criteria and Must-Offer Obligation revised straw proposal on July 25, 2013, and issues discussed during the stakeholder meeting on August 1, 2013.

Please submit your comments below where indicated. Your comments on any aspect of this initiative are welcome. If you provide a preferred approach for a particular topic, your comments will be most useful if you provide the reasons and business case.

Please submit comments (in MS Word) to fcp@caiso.com no later than the close of business on August 15, 2013.

1. The ISO has proposed a process by which an annual flexible capacity requirement assessment would be conducted. Please provide any comments or questions your organization has regarding this proposed process.

No comments on this item at this time.

2. The ISO has outlined a methodology to allocate flexible capacity requirements to LRAs. It is based on one possible measurement of the proportion of the system flexible capacity requirement to each LRA and calculated as the cumulative contribution of the LRA's jurisdictional LSE's contribution to the ISO's largest 3-hour net load ramp each month. Please provide comments regarding the equity and efficiency of the ISO proposed allocation. Please provide specific alternative allocation formulas when possible. The ISO will give greater consideration to specific allocation proposals than conceptual/theoretical ones. Also, please provide information regarding any data the ISO would need to collect to utilize a proposed allocation methodology. Specifically,

- a. Over the course of a day or month, any of the identified contributors to the change in the net load curve may be positive or negative. How should the ISO account for the overall variability of a contributor over the month (i.e. how to account for the fact that some resources reduce the net load ramp at one time, but increase it at others)?

No comments on this item at this time.

- b. What measurement or allocation factor should the ISO use to determine an LRA's contribution to the change in load component of the flexible capacity requirement?

BrightSource supports CAISO's original plan to allocate the portion of the flexible capacity requirement resulting from the monthly maximum three hour net load ramp to LSEs based on each LSE's contribution to the ramp. If flexible capacity requirements are to be allocated only to LRAs, then the allocation of the portion of the requirement resulting from the three hour net load ramp should be based on each LRA's contribution to the ramp. The use of LSE / LRA-specific portfolio characteristics for allocation methodologies is most appropriate, rather a generic load share allocation. This approach to allocation creates the incentive for each LSE to minimize operational impacts within its own renewable portfolio to the extent possible. However, we note that ideally, the CAISO and CPUC will coordinate to ensure that all flexible capacity procurement mechanisms utilize the same allocation methods and that improved allocation approaches could emerge over time based on flexible capacity program experience.

- c. Does your organization have any additional comments or recommendations regarding the allocation of flexible capacity requirements?

As BrightSource has argued in various proceedings at CPUC, CAISO and FERC, not all Variable Energy Resources ("VERs") have the same impact on system operations. In particular, VERs that have some degree of operational flexibility should be removed from the intermittent resource portfolios when calculating the three hour ramp component of the flexible capacity requirements. These resources, or the flexible portion of these resources, will respond to market signals, rather than solely natural resource availability, and should not be considered as contributing to net load ramps. If CAISO does not account for the flexibility of these resources in determining the flexible capacity requirement, LSEs will be required to procure flexible capacity in excess of the true need, and the

incentive to procure RPS-eligible resources with flexible attributes will be diminished.

Specifically, the Solar Thermal component of the allocation formula should include only Solar Thermal facilities without energy storage capabilities. Solar Thermal facilities with energy thermal energy storage capabilities possess varying degrees of dispatchability depending on plant design. Their daily output profiles will be based on, among other factors, energy and ancillary service market optimization results, current and prior operating day solar resource availability (which influences storage system charge status) and Scheduling Coordinator decisions related to contractual obligations. Therefore, output profiles cannot be predicted based on a uniform, geographically-based solar profile forecast. The dispatchable characteristics are more akin to dispatchable thermal or hydro supply resources, which are also not contemplated as components in the allocation formula.

3. The ISO has proposed must-offer obligations for various types of resources. Please provide comments and recommendations regarding the ISO's proposed must-offer obligations for the following resources types:

- a. Resources not identified as use-limited

No comments on this item at this time.

- b. Use-limited resources

1. Please provide specific comments regarding the ISO's four step proposal that would allow resources with start limitations to include the opportunity costs in the resource's start-up cost.

No comments on this item at this time.

2. Please provide information on any use-limitations that have not been addressed and how the ISO could account for them.

No comments on this item at this time.

- c. Hydro Resources

No comments on this item at this time.

- d. Specialized must-offer obligations (please also include any recommended changes for the duration or timing of the proposed must-offer obligation):

BrightSource supports the development of must-offer obligations (“MOOs”) for the following resources. The MOO for each resource should ensure that the resource can adequately address the CAISO defined system need. The implementation of these MOOs should not detract from sufficient flexible capacity availability at the time of system need, particularly the morning and afternoon ramps.

1. Demand response resources

No comments on this item at this time.

2. Storage resources

The second Straw Proposal proposes that storage resources that provide regulation bids for 17 hours would be eligible flexible capacity resources, but as written this could be construed to be lieu of the three hour ramp requirement. The CAISO should clarify its intent here.

3. Variable energy resources

The current proposal prescribes different hours of must-offer obligations for Solar PV, Solar Thermal and Wind. The first principle in establishing these hours of obligation should be system need. As long as this first principle is met, then the must-offer obligation hours could potentially be reduced based on natural resource availability, as proposed for solar resources.

In the case of solar resources, all participating generation capacity should be held to the same must-offer obligation hours, regardless of the expectation for storage incorporation. The Solar Thermal hours should be reduced to reflect the natural resource availability – if the first principle of system need is met – or the Solar PV hours should be increased to match the expectation of storage capabilities.

4. The ISO has proposed to include a backstop procurement provision that would allow the ISO to procure flexible capacity resources to cure deficiencies in LSE SC flexible capacity showings. Please provide comments regarding the ISO’s flexible capacity backstop procurement proposal.

No comments on this item at this time.

5. The ISO is not proposing to use bid validation rules to enforce must-offer obligations. Instead, the ISO is proposing a flexible capacity availability incentive mechanism. Please provide comments on the following aspects of the flexible capacity availability incentive mechanism:

The Availability Incentive Mechanism proposal does not mention natural resource availability related to flexible variable energy resources. Certain resources (hydroelectric and long-start resources) are proposed to be relieved of their must-offer obligation in certain scenarios and therefore presumably would not be penalized for the inability to submit economic bids. BrightSource encourages the CAISO to consider how the incentive mechanism would be applied to flexible VERs and its effects on program participation and system reliability.

- a. The proposed evaluation mechanism/formula
 1. The formula used to calculate compliance
 2. How to account for the potential interaction between the flexible capacity availability incentive mechanism and the existing availability incentive mechanism (Standard Capacity Product)
 - b. The use of a monthly target flexible capacity availability value
 1. Is the 2.5% dead band appropriate?
 2. Is the prevailing flexible capacity backstop price the appropriate charge for those resource that fall below 2.5% of monthly target flexible capacity availability value? If not, what is the appropriate charge? Why?
 - c. Please also include comments regarding issues the ISO must consider as part of the evaluation mechanism that are not discussed in this proposal.
6. Are there any additional comments your organization wishes to make at this time?
 1. *The generic Effective Flexible Capacity (“EFC”) calculation based on the three hour ramping capability was developed with conventional resources in mind, and it is ill-suited for energy storage resources with great flexibility in*

ramp rates and less than three hours of absolute storage capacity at a maximum ramp rate. The formula actually incentivizes slow ramping storage resources. A fast ramping storage resource will use up its stored energy in less than three hours, therefore will not be eligible based on the 3 hour ramp, unless CAISO uses the 3 hour capability as a basis for counting rather than eligibility. The EFC quantity should be based on a CAISO-defined benchmark¹. The EFC will reflect some fraction of the resource's nominal capacity. The CAISO may need to continue its discussions with firms providing these technologies to refine these rules.

- 2. Based on PG&E's comments at the August 1st meeting, the CAISO should clarify that the minimum requirement for hydroelectric resources is not a capability of PMax for 6 hours, but rather that 6 hours would be the basis for the maximum credit for a hydro resource. The EFC for a given resource will be based on the maximum output (if less than PMax) that can be sustained for 6 hours. [Note: Elsewhere, CAISO has been inconsistent regarding a sustained output versus ramping requirement for other resources. The sustained output requirement for hydroelectric resources should not necessarily apply to other resources, for which the requirement is based upon ramping capabilities.]*

¹ See comments of the Concentrating Solar Power Alliance regarding Effective Flexible Capacity for storage resources: <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M068/K703/68703724.PDF> (pg 6).