

Flexible Resource Adequacy Criteria and Must-Offer Obligation Fourth Revised Straw Proposal, Posted November 7, 2013

Submitted by	Company	Date Submitted
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CESA continues to applaud the CAISO’s collaborative work with the CPUC and stakeholders reflected in the Fourth Revised Straw Proposal (“Proposal”) to ensure that flexible capacity energy storage resources are available in the very near future to reliably operate the grid while fulfilling state energy and environmental goals. CESA will continue to work closely with the CAISO and the CPUC in developing the CAISO tariff changes necessary for the CAISO to adopt flexible resource adequacy (“RA”) capacity requirements that specifically include energy storage for inter-hour, load following, and ramping needs. CESA provides the following responses to the specific question posed by the CAISO:

1. The ISO has outlined a methodology to allocate flexible capacity requirements to LRAs. As detailed in the fourth revised straw proposal and at the 11/13 stakeholder meeting PG&E has put forward an alternative allocation methodology. Please provide comments for each of these proposals, particularly as they relate to cost causation. If your organization has a preference for one over the other, please state your preference and why.

CESA’s Response: CESA takes no position here on PG&E’s proposed alternative methodology

2. The ISO believes that demand response resources should have the opportunity to provide flexible capacity. The ISO has proposed how demand response resources could do so. Please provide comments on the ISO’s proposal. Specifically, please identify concerns with the ISO’s proposal and offer potential solutions to these concerns. Additionally, please comment on the proper forum (ISO, CPUC, etc.) where these concerns should be addressed.

CESA’s Response: The proposal should expressly take full account of the fact that demand response can be provided by energy storage, both *per se* and as an enabling technology for demand response. The CAISO and the CPUC should continue to collaborate as closely as possible and endeavor to coordinate policy positions at the FERC.

3. Please provide comments and recommendations (including requested clarifications) regarding the ISO’s proposed must-offer obligations for the following resources types:

a. Dispatchable gas-fired use-limited resources

i. Please provide comments regarding the ISO’s proposal that would allow resources with use- limitations to include the opportunity costs in the resource’s default energy bid, start-up cost, and minimum load cost.

CESA’s Response: CESA generally supports full accounting of opportunity cost on a comparable basis for all resources.

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

CESA’s Response: CESA takes no position here on how the CAISO accounts for opportunity cost as specifically related to gas-fired resources.

b. Specialized must-offer obligations:

i. Demand response resources

CESA’s Response: CESA takes no position here as to specialized must-offer obligations other than those applicable to energy storage.

ii. Storage resources

CESA’s Response: CESA supports the proposed flexible capacity Must Offer Obligation window of 5:00 am – 10:00 pm for energy storage. CESA also applauds the CAISO’s effort to harmonize the Proposal’s requirements with the RA proceeding at the CPUC. However, in the case of energy storage, flexible capacity should not be intrinsically coupled with generic capacity. Energy storage resources can provide highly controllable upward and downward flexibility, typically with extremely high ramp rates. They rarely have daily, monthly, or annual use limitations. However, many of the highest value energy storage resources will provide flexible capacity well in excess of standard capacity. Separating flexible capacity from standard capacity will provide several benefits to the grid going forward:

- In cases where a utility obligation for flexible capacity exceeds its obligation for standard, or generic, capacity, a utility should not be obligated to procure generic capacity simply to meet the flexibility need. Maintaining the bundling of flexible and generic capacity is likely to result in over-procurement of generic capacity.

- During periods of over-generation, energy storage and variable energy resources (“VERs”) can provide downward ramping to the grid without injecting additional energy into the system. As has been shown in recent modeling in LTPP Track 4, over-generation of renewables during mid-day periods is likely by 2020. Rules should value resources that can supply downward regulation without necessarily also supplying generic capacity.

The bundling of flexible and inflexible resources called for in the Proposal will also cause several operational and practical issues:

- If an existing resource has already been contracted to provide standard capacity, then it is unable to contract for additional incremental flexible capacity. The value of the incremental flexible capacity is unclear, as is the rating of the combined resource. This contractual impediment and lack of certainty as to the parameters of any must offer obligation prevents procurement of energy storage resource in combination with VERs and conventional generating resources.
- In the bundled standard/flexible capacity scenario described in the Proposal, the value of the flexible capacity resource only exists when combined with a generic capacity commitment. For example, if a resource that is committed to provide generic capacity has an outage - or has different outage characteristics that are not identical to a paired flexible capacity commitment - then the flexibility would appear to lose its value.

Finally, net qualifying capacity (“NQC”) does not account for several of the flexible benefits provided by energy storage:

- Energy storage resources that can rapidly switch between charging and discharging at any point in the range of their state of charge should be counted for their entire positive and negative flexible range. The flexible range of this kind of energy storage resource is a tangible flexible benefit provided to the grid during regulation energy management (“REM”), ramping, and load following that should be accounted for in the flexible capacity rating.
- A single 1.5-hour duration energy storage resource can provide three hours of downward regulation to its full charging capacity during times of peak renewable generation as well three hours of upward ramping to its full discharge capacity during the evening peak load. This single resource could thus provide the same benefits as a conventional generation resource or a flexible VER as described in the Proposal. Capping the rating of the energy storage resource at the NQC under current rules would effectively cap it at the maximum of the four-hour discharge capacity.

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1 Energy Systems | A123 Energy Solutions | AES Energy Storage | Alton Energy | American Vanadium | AU Optronics Corporation | Beacon Power
 Bright Energy Storage | BrightSource Energy | CALMAC | Chevron Energy Solutions | Christenson Electric, Inc. | Clean Energy Systems | CODA Energy | Deeya Energy
 DN Tanks | Eagle Crest Energy | EaglePicher | East Penn Manufacturing | Energy Cache | EnerSys | EnerVault | FAFCO Thermal Storage Systems | FIAMM Group
 FIAMM Energy Storage Solutions | Flextronics | Foresight Renewable Solutions | GE Energy Storage | GELI - Growing Energy Labs | Green Charge Networks
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 KYOCERA Solar | LightSail Energy | LG Chem Ltd. | NextEra Energy Resources | NRG Energy | OCI Company Ltd. | OutBack Power Technologies | Panasonic
 Paramount Energy West | Parker Hannifin | PDE Total Energy Solutions | Powertree Services | Primus Power | RedFlow | RES Americas | S&C Electric Co.
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 Sumitomo Electric Innovation Core | Sumitomo Corporation of America | TAS Energy | UniEnergy Technologies | Xtreme Power | Wellhead Electric Co.

CESA urges the CAISO join the CPUC in recognizing that the effective flexible capacity (“EFC”) of an energy storage resource should not be capped by its NQC. CESA urges the CAISO to establish the capacity counting methodology for energy storage resources equal to the EFC, rather than the NQC of the resource.

iii. Variable energy resources

CESA’s Response: Except as mentioned in response to question 3(B)(ii) above, CESA takes no position here as to specialized must-offer obligations other than those applicable to energy storage.

4. At the 11/13 stakeholder meeting there a significant amount of discussion regarding the appropriate method for setting the price for the proposed flexible capacity availability incentive mechanism. Please provide comments about how this issue might be resolved.

CESA’s Response: The methodological issues discussed in the Proposal must be addressed before appropriate pricing can be evaluated.

5. The ISO has proposed an SFCP evaluation mechanism/formula that weights compliance with the real-time must offer obligation heavier than the day-ahead must offer obligation. Please comment on:
 - a. The merits of using such a weighting mechanism relative to the “lesser of” proposal from the previous proposal

CESA’s Response: CESA takes no position on the merits of either weighting proposal at this time.

- b. The relative weights between the real-time and day-ahead markets

CESA’s Response: See response to 5(a), above.

6. There were several clarifying questions asked at the 11/13 stakeholder meeting regarding substitution of flexible capacity that is on forced outage. Please provide comments and / or questions (and potential answers) regarding any additional clarifications the ISO should make in the next revision to clarify this aspect of the proposal.

CESA’s Response: CESA takes no position here as to treatment of forced outages.

7. Please provide comments regarding how, or if, the SFCP adder price and the flexible capacity backstop price should be related.

CESA's Response: CESA takes no position here as to treatment of the Standard Flexible Capacity Product.

8. Are there any additional comments your organization wishes to make at this time?

CESA's Response: Significant progress has been made toward development of counting methodologies that assure comparable treatment, and that also take full account of the multiple value streams that energy storage can provide, in the Fourth Revision. CESA urges the CAISO to move toward adoption of the recommendations set forth at 3(B)(ii) above as expeditiously as possible in the next revision of the Straw Proposal by directly acknowledging that energy storage is sui generis and thus merits its own distinct methodology. The next revision should also elaborate on the specific technical studies to determine the optimal deployment of energy storage to meet flexibility needs that are mentioned in the 2013 Special Reliability Assessment produced jointly by the CAISO and NERC.