Stakeholder Comments Template

Flexible Resource Adequacy Criteria and Must-Offer Obligation Third Revised Straw Proposal, Posted October 3, 2013

Submitted by	Company	Date Submitted
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This template is for submission of stakeholder comments on the topics listed below, covered in the Flexible Resource Adequacy Criteria and Must-Offer Obligation third revised straw proposal on October 3, 2013, and issues discussed during the stakeholder meeting on October 9, 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 October 16, 2013.

1. 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. Specifically, please comment on:

    a. The ISO's proposal to use a LSEs average contribution to historic daily ISO maximum 3-hour load changes to allocate the Δ load component of the flexible capacity requirement.

    CDWR appreciates CAISO for proposing allocation of FCR to Δ load based on historical load. CDWR in the first two rounds of comments advocated for this methodology. While CAISO appreciated CDWR's comments in this regard, it rejected the netting concept CDWR proposed in the proposed allocation methodology[1]. CDWR again emphasizes that:

[1] CAISO's response on CDWR's comments on 2nd revised proposal: "*The ISO greatly appreciates the submission of this allocation proposal. However, the ISO does not believe this approach to netting yields an equitable allocation methodology. Contribution to the maximum*

a) if an LSE's contribution coincident with the ISO largest 3 hour net load ramp results in negative load changes, FCR associated with that negative load change should be netted against LSE's FCR obligation associated with wind and solar generation coincident with the ISO's maximum 3 hour net load ramp. This is an equitable approach to award LSE's load modifying behavior instead of providing compensation for negative load ramps; b) While determining contributing factor for an LSE, the historical load changes (3 hour load ramps based on hourly average load) should be measured coincident with the ISO determined maximum 3 hour net load ramp period. Steps presented below describes in detail.

b. The potential of using historic average daily maximum 3-hour net-load ramps or time of day system maximum 3-hour load ramps (morning vs. evening ramps).

Following steps should be considered:

1. ISO determines the maximum 3 hour net load ramp and the hour when it occurs for a month. Let's say hour 17:00.

2. Forecasted Maximum Ramp Period (MRP): 15:00 through 19:00; can be 2 hours before and after the hour when maximum 3 hour ramp occurs for the month.

3. Determine LSE's average hourly load for the month for last 2 years.

4. Determine LSE's 3 hour average hourly load ramp. For example: Hour 17:00 average load minus Hour 14:00 average load for 3 hour average load ramp at Hour 17:00.

5. Determine LSE's 3 hour average ramp coincident with MRP in bullet 2. Maximum (or average) value out of MRP hours can be taken as the contribution factor for Δ load.

6. Netting: if the LSE's contribution factor for Δ load is negative, the corresponding negative FCR should be netted against the LSE's FCR obligation attributed to wind and solar coincident with MRP. In this manner, netting should not be a concern as described by CAISO because netting in this way is done only at the period coincident with MRP (not

3 hour net load ramp is not based on the average of the morning and afternoon contributions, but the contribution to the maximum."

averaging morning and afternoon contribution). Such netting would incent load modifying DR resources not bid into the ISO market.

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

As described in 1(a) above, CDWR also emphasizes that: a) if an LSE's contribution coincident with the ISO largest 3 hour net load ramp results in negative load changes, FCR associated with that negative load changes should be netted against LSE's FCR obligation associated with wind and solar generation coincident with the ISO's maximum 3 hour net load ramp. This is an equitable approach to award LSE's load modifying behavior instead of providing compensation for negative load ramps; b) while determining contributing factor for an LSE, the historical load changes (3 hour load ramps based on hourly average load) should be measured coincident with the ISO determined maximum 3 hour net load ramp period,

d. Should the ISO consider seasonal allocations for each component? What would these seasonal allocations look like?

Seasonal allocations may not reflect all LSE's contributions truly; their load behavior may differ from each other seasonally. The seasonal approach would consider uniform load behavior of LSEs which may not be true. More granular approach (monthly instead of seasonal) would incent LSEs in managing their load and resources effectively.

2. The ISO believes the proposed methodology reflects causation principles. Specific to allocating flexible capacity requirements, what does "causation" mean to your organization and how would this definition be most accurately reflected in a flexible capacity requirements allocation process?

Causation means the degree of contribution to an affect or impact. The degree of contribution should be robust and should be determined in a practical and measurable way. In this case historical load and what it could represent in future to affect FCR is a practical and reasonable method. Causation also should be accounted for in both directions. If the contribution is causing the FCR need, then the contribution is chargeable. If the contribution is helping in mitigating the FCR need then it should also be counted as credit and should be netted against other obligations. Causation evaluation also needs to focus at the time period when the target or forecast occurs.

3. What are the appropriate bounds for the maximum and minimum for the error term as well as how to address year-to-year variability? What are the appropriate actions if such bounds are reached?

4. 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

    b. Dispatchable gas-fired use-limited resources

        1. 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.

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

    c. Hydro Resources

    CDWR appreciates CAISO making changes for the eligibility for hydro resources counting for flexible capacity[2]. The proposal considers must offer hours of 5 am through 10 pm. Alternatively, Flexible Standard Capacity Product (FSCP) availability assessment hours could be targeted during morning ramp hours (5 am -9 am) and evening ramp hours (4 pm through 8 pm) only even though must offer hours are 5am through 10 pm. This will distinguish between a non-use limited thermal resource and a hydro generation resource.

    Apparently, managing use limitation through proposed default energy bid opportunity cost procedure is not designed for hydro resources. Does this mean that there is no change to the use limitation consideration today for hydro resources under the FSCP?

    Threshold test for Effective Flexible Capacity (EFC): the proposal mentions that CAISO will run a threshold test for EFC. To the extent the

[2] CDWR suggested in its comments on previous straw proposal that any capacity (not Pmax only) that can be made available for 6 hours for any month should be the criteria for flex RA eligibility. CDWR reiterates that this point is important, since it makes no sense to exclude any flexible capacity that might be made available.
ISO response: The ISO has made modifications consistent with this recommendation.

resource did not have an economic bid at a certain level it would not qualify as an EFC resource. Then the owner would have to request ISO for including the resource in the EFC list. ISO could reject the request. What are the conditions that such resource request could be rejected or accepted by CAISO?

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

1. Demand response resources.

CDWR supports scheduling coordinators to choose between mornings (7 am –noon) or evening (3 pm-8 pm) must offer hours. This is a targeted approach in utilizing DR resources to meet reliability when the system is in stressed condition.

CDWR raised two significant issues in its comments on 2nd revised proposal. Following are the issues and comments:

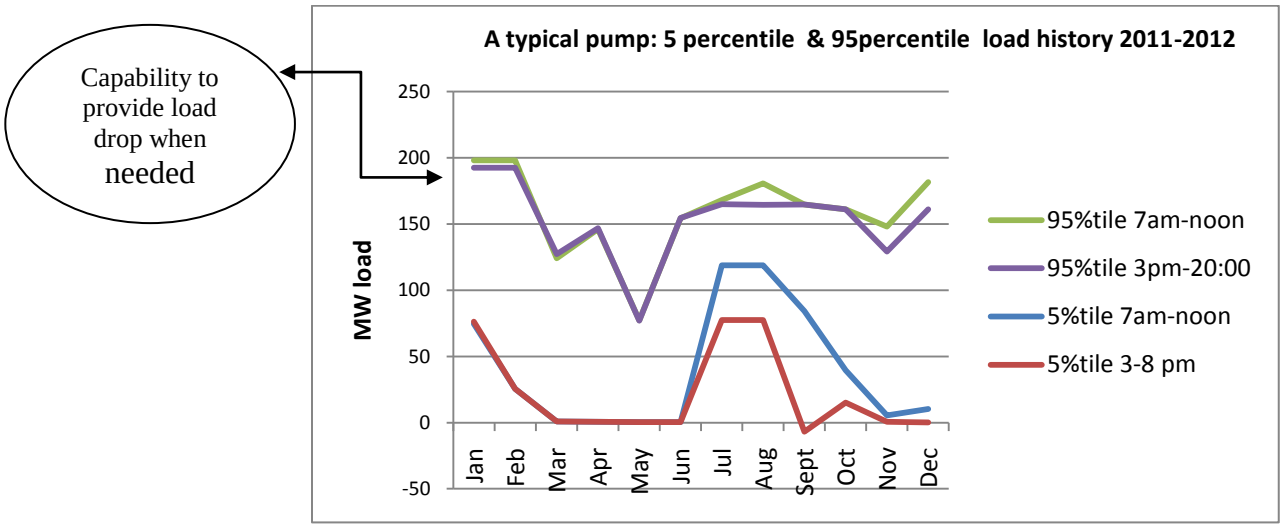
a) The first was whether the ancillary service bid that a participating load can provide in the Day Ahead Market (DAM) will suffice for FSCP measurement or not, as energy bid cannot be provided in the DAM with the current ISO Model. CDWR believes that the contingency portion of FCR should be allowed with contingency flag (contingent upon reduction of system operating reserve for which contingent FCR is needed). CDWR appreciates CAISO's response that CAISO will review the implementation challenges[3]. CDWR would like to see some progress on the CAISO determination. It is apparent that CDWR is the only entity that has significant amount of participating load. CAISO's effort in reviewing implementation could be more productive with a discussion with CDWR.

b) The second issue: "In the case of demand response (DR) resources, if, for some reason, the load associated with the DR resource is not consuming or pumping during some days or hours of the compliance month, there will be no load to drop and hence DR cannot be offered to further reduce load during the proposed must offer hours. If the load has already done

[3] CAISO response: *The ISO is still reviewing the implementation challenges associated with participating load and will attempt to address this matter in the next draft of the proposal*.

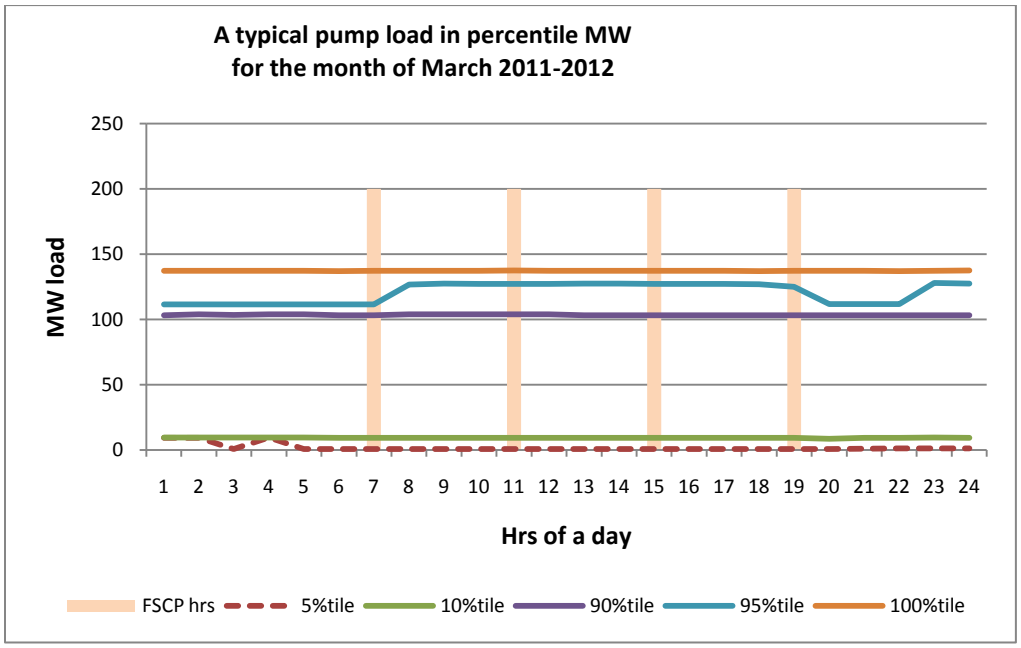
what it was supposed to do ultimately (reduce load) during the must offer hours, there should not be any penalty imposed. In case of a wholesale pump load, it may not pump for a number of reasons, such as lack of water demand, during some days or hours of month overlapping proposed must offer hours. During those hours (overlapping with must offer hours) when water demand is reduced, load drop capacity will be reduced or vanish because of no pumping load. Such circumstance is equivalent to "dispatched RA generation capacity" to generate energy and hence should not be penalized by labeling those hours as non-compliant. There should be a mechanism that exempts such circumstances from being penalized under flexible capacity incentive mechanism". CDWR does not agree with the CAISO response[4] in this regard. CAISO states, "If a demand response resource does not have load to drop than it is unavailable to provide system flexibility."

With ISO's statement, CDWR understands that a pump load that can occur about 95% of times (which is a 5 percentile load) would be eligible to provide flexible capacity because it would be subject to FSCP assuming monthly FSCP availability standard could be around 95%. If the load is not available, it cannot be bid to drop and it will be subject to FSCP charges. This would deter use of participating load providing flexible RA. A chart below demonstrates a typical real example:



[4] CAISO response: *The ISO believes that demand response with no load to drop is more akin to a conventional generator on outage rather than a generator that has been dispatched. If a demand response resource does not have load to drop than it is unavailable to provide system flexibility.*

According to the ISO explanation, 5 percentile load (load that most likely would be present to drop) would be eligible to provide flexible RA as it will be subject to FSCP. In the chart above, the pump can not be used for flexible RA from March through June because its 5 percentile load is about zero. Very negligible amount would be eligible during October through February. Whereas, the pump load at 90-95 percentile is much higher, in the range of 100-200 MW. The load variations (95 percentile= 200 MW in some month to 5 percentile=0 in some month) can be due to various reasons such as no water demand for the day or some other environmental limitations, or responding to ISO stress condition through market price signal none of which undermines ISO reliability. So, the load does not need to be kept on to drop when a dropped load has already achieved its ultimate goal. There is no merit in allowing only load that exist to count for flexible RA because very little to none load would be allowed to count for flexible RA while the load actually can occur at much higher level. For example, for April, 5 percentile load is zero, whereas 95 percentile load is 150 MW. Since the pump can not provide flex RA, it actually poses challenge to ISO relaibility when pumping at 150 MW without having dropping capability from ISO. If it is allowed to provide flex RA at 150 MW, it could drop at the moment when it is needed instead. The chart below shows with eligible 5 percentile load as Flex RA (1 MW in the example), there is a significant 90-100 percentile load (range 100-140 MW) in any hour of a day that could provide RA on an as available basis:



CDWR recognizes that ISO could see an implementation challenge in accomodating this unique situation. CDWR proposes that for participating load resources (pseudo gen) the availabilty measurement for FSCP should be measured matching with underlying demand schedule. If there is no underlying demand bid, FSCP measurement should waive that hour and if underlying demand schedule is there equal to or less than the flex RA capacity, and there is no bid for pseudo gen, it should be counted against availability. An illustrative example is presented below:

Assume, flexible RA capacity from ppseudo gen= 100 MW

FSCP hrs	7:00	8:00	9:00	10:00	11:00	12:00
Demand schedule	100	0	0	180	100	30
Pseudo gen (flex RA bid)	100	0	0	100	50	30
FSCP waiver	no	Yes; no demand and no bid to drop	Yes; no demand and no bid to drop	No; demand schedule is >RA capacity; pseudo gen is bid for a full RA capacity; 100% available.	No; 50 supply MW is not bid when demand schedule is 100 MW; 50 MWh counts against FSCP availability	No; now the demand bid is less than RA capacity; for this hour RA capacity of 100 should be treated as only 30 and measure FSCP based on

						30 MW; results in 100% FSCP for this hour in that way.

Without CDWR's concept (to use participating load on an as available basis), utilization of participating load would be none to very negligible due to FSCP penalties.

2. Storage resources.

3. Variable energy resources.

5. The ISO has proposed a flexible capacity availability incentive mechanism Please provide comments of the following aspects of this mechanism:

   a. The selection of the adder method as the preferred option

      CDWR supports the preferred option.

      1. Should the ISO still consider the bucket method, the "worse-of" method, or some other method not already considered? Why?

   b. The price for the flexibility adder. Specifically, if the ISO proposed price is not correct, what price or data source should the ISO consider and why?

   c. The interaction between the existing SCP and the proposed SFCP

   d. The proposed SFCP evaluation mechanism/formula

      The formula should take into account waivers suggested by CDWR in the example described above for participating load.

      1. The formula used to calculate compliance (including the treatment of long-start and use-limited resources)

      2. The treatment of forced and planned outages

3. The minimum availability thresholds for use-limited resources

e. The proposed substation rules for forced outages

f. Please also include comments regarding issues the ISO must consider as part of the evaluation mechanism that are not discussed in this proposal.

6. 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 following issues of ISO's proposed flexible capacity backstop procurement proposal:

   a. The inclusion of the adder methodology

   b. The opportunity for LSEs to provide a list of uncommitted flexible capacity that can be used to help cure flexible capacity deficiencies

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

   a) An excerpt from CDWR's comment in the 2nd revised proposal:
   CEC Load forecast in the need assessment: ISO mentioned in the August 1 meeting that Flexible Capacity Requirement (FCR) assessment will include the demand forecast from CEC's Integrated Energy Policy Report (IEPR) data. The FCR assessment is intended to be performed each month, so monthly load forecasts will be needed. However, the CEC IEPR data produces one annual number representing each LSE's coincident peak demand for the entire year; it does not have granularity at a monthly level. How will ISO utilize the CEC IEPR data to derive 12 monthly forecasts of load? It appears that the CEC IEPR requires reporting the last 2 years' historical hourly load data. How is an LSE's annual coincident peak demand forecast from IEPR going to be translated to LSE's monthly demand forecast for FCR assessment purposes?

ISO response states, "The ISO has scaled ISO actual system peak in the previous year to match the CEC's IEPR forecast. Additionally, has scaled all loads proportionately. For example, in the results for the 2014 RA scaled 2012 actual load data such that the system peak equaled the forecasted IEPR system peak. All other hours were scaled using the same proportional weighting."

ISO should present a process flow chart and an illustrative example to show how such load data is derived.

b) Inaccuracy of LSEs data and potential impact on FCR with rerun of FCR: The proposal lacks details on how ISO will determine accuracy. For example, what would be measured or compared?

c) Regulation as the must offer requirement for a storage resource: ISO should clarify if it is a regulation ancillary service bid.