

California Independent System Operator
Flexible Resource Adequacy Criteria and Must-Offer Obligation

**Comments of the California Wind Energy Association
on the July 25, 2013 CAISO Second Revised Straw Proposal on
Flexible Resource Adequacy Criteria and Must-Offer Obligation**

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Introduction

The California Wind Energy Association (CalWEA) appreciates the opportunity to comment on the CAISO's second revised straw proposal on Flexible Resource Adequacy Criteria and Must-Offer Obligation (FRACMOO). CalWEA was not able to submit comments on the CAISO's June revised straw proposal.¹ Hence, these comments address topics that were more heavily emphasized in the first revised straw proposal.

The fundamental premise of the CAISO FRACMOO proposal is clear. FRACMOO is principally intended to make annual and monthly capacity payments to existing flexible resources, mainly gas-fired generators, for a capability they already have and have been providing to the grid without such long-term capacity compensation in the past. CalWEA understands this premise and supports it. CalWEA understands that a major shift in services from flexible resources is taking place as net load variations are increasing. This shift in services is moving away from providing basic Resource Adequacy (RA) capacity to providing ramping services (flexibility capacity) during certain parts of the day. Hence, even though flexible capacity resources have been providing ramping services without long-term capacity compensation in the past, the RA payment has allowed these resources to operate in a financially viable fashion. However, in an environment where basic RA capacity (as well as

¹ CalWEA did, however, submit relevant comments in the parallel CPUC proceeding in the same time frame. See CPUC Docket R. 11-10-023 (addressing flexible RA procurement), available at: http://delaps1.cpuc.ca.gov/CPUCProceedingLookup/?p=401:56:2944035318175401::NO:RP,57,RIR:P5_PROCEEDING_SELECT:R1110023.

energy) needs are increasingly met by renewable resources, the resources needed to meet ramping requirements (caused in part by renewables) are expected to experience significantly reduced RA capacity and energy revenues. At the same time, these same resources will be required to provide more start-and-stop operation as well as ramping services, incurring more costs due to operation in less efficient zones as well as the added wear and tear. Under these new circumstances, compensating flexible resources for their flexible capacity is not only fair but also necessary to ensure that these resources remain available to provide needed services. Absent this new payment stream, existing resources could potentially cease to operate, leading to a need for new flexible resources likely at a much higher cost to ratepayers. At the same time, under the CAISO FRACMOO proposal, the proper tradeoff for receiving capacity payments would be for these flexible resources to be obligated to offer that flexible capacity as economic bids in the CAISO Day-Ahead (DA) and Real-Time (RT) markets.

While CalWEA broadly supports CAISO's second revised straw proposal, we strongly believe that several critical changes, discussed in detail below, must be made to the FRACMOO proposal:

1. Contingency reserve capacity should not be reserved as part of flexible capacity procurement;
2. The eligibility criteria for hydro resources to provide flexible capacity should be corrected to properly reflect their capability to provide flexible capacity;
3. Imports, especially in light of FERC Order 764 reform, should be allowed to participate in offering flexible capacity;
4. The flexibility of renewable resources built into most power purchase agreements for these resources should be accounted for in the calculation of flexible capacity requirement;
5. The likelihood that some flexible resources, renewable or otherwise, would participate in the DA and RT markets due to existing economic incentives should be accounted for in the calculation of flexible capacity requirement;
6. The allocation of flexible capacity costs to LSEs can and should be modified to correspond to costs caused by such LSEs as a result of their procurement decisions; and
7. CAISO should strictly enforce the obligation of flexible capacity resources to provide economic bids in the DA and RT markets.

1. Contingency reserve capacity should not be reserved as part of flexible capacity procurement

CAISO proposes to calculate the flexible capacity requirement for any month of the year by adding two system capacity needs:

- i) Largest three-hour contiguous ramp during the month; and
- ii) Maximum contingency reserve for that month.

However, the latter term corresponds to capacity that has already been procured and reserved when CAISO ensured that sufficient RA resources (equal to 115% to 117% of maximum monthly load) was procured - that 15% to 17% additional RA capacity beyond maximum load is precisely intended to ensure that there is sufficient capacity available to deal with system contingencies. So, rather than re-procuring the contingency reserve capacity as part of flexible capacity procurement, CAISO should simply introduce an obligation for RA capacity resources that are eligible to provide contingency reserves, e.g., gas resources, to either schedule their RA capacity in the DA and RT market or to offer that capacity through an economic bid as well as providing contingency reserves in these same markets. Under this circumstance, the calculation of the flexible capacity should be modified to remove the contingency reserve term.

2. The eligibility criteria for hydro resources to provide flexible capacity should be corrected to properly reflect their capability to provide flexible capacity

Per the CAISO proposal “a hydro resource will qualify as flexible capacity if it has physical storage capacity to provide energy equivalent to output at Pmax for 6 hours.” CalWEA does not understand why a hydro resource should have to provide its Pmax power for 6 continuous hours in order to qualify. Any hydro resource with a reservoir should qualify to offer flexibility capacity equal to the expected daily energy that will be available in its reservoir divided by 6 hours. For example, based on the criteria proposed in the latest FRACMOO proposal, a 100-MW hydro resource (Pmax = 100 MW) would qualify as a flexible capacity resource only for those time periods when its reservoir has 600 MWh worth of energy (Pmax * 6 hours). However, from a physical operation standpoint, if that same 100 MW hydro resource only has 300 MWh of energy in its reservoir, it can readily provide 50 MW of flexible capacity (300 MWh/6 hours). Thus, the eligibility requirement for hydro resources should be modified accordingly to reflect this physical reality.

3. Imports, especially in light of FERC Order 764 reform, should be allowed to participate in offering flexible capacity

At the last stakeholder meeting, CAISO argued that flexible capacity should be similar to 5-minute load-following capacity with the ability to be sustained for 3 hours and, therefore, imports whose levels change every hour (or 15-minutes in the upcoming CAISO FERC Order 764 Market) would not qualify as flexible capacity. However, by examining the daily net load curve, with its “slow rising” net load value, we can readily see that continuously rising imports, even

with an hourly (or better yet, 15-minute) ramp capability, can help meet the net load increases during the morning and late-afternoon hours. Therefore, imports, particularly those scheduled on a 15-minute basis, should be allowed to participate in providing flexible capacity capability to the CAISO.

4. The flexibility of renewable resources built into most power purchase agreements for these resources should be accounted for in calculating the flexible capacity requirement

Virtually all renewable resources that have executed PPAs since 2011, and many in the years prior, are required to offer a certain number of hours of unpaid and paid curtailments to their utility buyer.² Such curtailment hours could be judiciously scheduled/bid by these buyers, who are normally the Scheduling Coordinators (SCs) for these same renewable resources, to reduce the net load ramp, and hence the need for flexible capacity. We encourage the CAISO to work with LSEs to explore the use of such curtailment provisions in the PPAs to mitigate the net load ramps at least during those few time periods during the month for which the largest three-hour contiguous ramps are expected to occur, hence reducing the monthly and annual flexible capacity requirement for the entire system in general and that LSE in particular. By reducing the need for flexible capacity requirements, renewable resources can make a significant contribution to resolving the resource need.

5. The likelihood that some flexible resources, renewable or otherwise, would participate in the DA and RT markets due to existing economic incentives should be accounted for in the calculation of the flexible capacity requirement

A certain portion of supply and demand resources, particularly resources without RA capacity designations, has traditionally participated in the CAISO market by submitting economic bids. If these resources continue to participate in the CAISO market in a similar manner as they do today, they will reduce the need for flexible capacity. Even with the changes in the CAISO market resulting from the FRACMOO initiative, there will always be some resources that will continue to participate in the market even if they are not designated and compensated as a flexible resource. Hence, we recommend that this inevitable fact be taken into consideration and properly modeled when determining the annual and monthly flexible capacity requirements.

² By CalWEA's conservative estimate, in 2020, the three investor-owned utilities will have over 5,000 MW of renewable energy capacity under contracts that specifically provide the buyer with substantial rights to economically curtail deliveries. The IOUs' contracts have long provided for physical curtailment of projects by the utilities in response to grid reliability issues, such as system emergencies and CAISO-declared over-generation conditions. In addition to these physical curtailment rights, all contracts signed in 2011 and beyond can be expected to also have economic curtailment provisions, which were included in all three of the utilities' 2011 pro forma contracts. (For example, PG&E's pro forma contract provides for the right to curtail for any reason up to a negotiated number of hours, with PG&E requesting a minimum of 250 hours per year, per contract.) These rights provide the ability to economically curtail deliveries in amounts that are orders of magnitude larger than the hours of curtailment that have been shown to be needed.

6. The allocation of flexible capacity costs to LSEs can and should be modified to correspond to costs caused by such LSEs as a result of their procurement decisions

The flexible capacity requirement for a calendar month corresponds to the largest three-hour contiguous ramp that is forecasted for that month by the CAISO. This is expected to occur during a single morning or late afternoon ramp event in that month – let’s call this event the “maximum ramp event” for the month. For that maximum ramp event, CAISO should be able to isolate the exact contribution of each LSE to the maximum ramp event via the relationship between the SCs on one side and loads and resources represented by that SC on the other side. This contribution should then be used for allocating the cost of flexible capacity procurement for that month to the LSEs, either directly by the CAISO or via Local Regulatory Authorities (LRAs). The process may be somewhat involved but potentially still less complex than the cost allocation formulas that CAISO is proposing in the revised straw proposal.

At the August 1, 2013, stakeholder meeting, CAISO stated that determining the contribution of individual LSEs during the maximum ramp event would be too cumbersome. The stated reason for this position was that the CAISO calculates the maximum net load ramp by first aggregating the impact of sources that contribute to such ramp (load, renewables, etc.) so the link between these sources and the LSEs (and their LRAs) are lost. As stated above, these links can be re-established with some careful accounting in the settlement system. However, should it be determined that such a task is too difficult to perform, it is still possible to better allocate the flexible ramping cost based on cost causation by a simple tweak to the cost allocation formula that CAISO presents in its revised straw proposal as presented below.

Based on the CAISO statement that it readily has data showing the aggregate impact of each of the various sources (load, wind, solar PV, solar thermal, distributed generation, etc.) on the maximum net load ramp, CalWEA recommends that CAISO compare the contribution of each source, as aggregated above, to the maximum monthly ramp to determine the allocation for that source. These contributions should then be used as weights in the CAISO proposed cost allocation formula, where, for example, the impact of change in wind generation during a month would be multiplied by the contribution of wind to the maximum ramp event as noted above.

7. CAISO should strictly enforce the obligation of flexible capacity resources to provide economic bids in the DA and RT markets

CAISO should use its bid validation rules to ensure that flexible capacity resources that were selected and paid to provide flexible capacity submit economic bids into the DA and RT markets. Performance incentives/penalties in the fashion that are used to reward/penalize RA resources for their availability do not apply to their scheduling/bidding obligation but are used to monitor their actual availability for system operation. Performance incentives/penalties could similarly be used for flexible capacity resources based on their unavailability as reported in the CAISO SLIC system.