

Stakeholder Comments Template

**Flexible Resource Adequacy Criteria and Must-Offer Obligation  
Revised Straw Proposal, June 13, 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 revised straw proposal on June 13, 2013, and issues discussed during the stakeholder meeting on June 19, 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](mailto:fcp@caiso.com) no later than the close of business on June 26, 2013.

1. The ISO has outlined the a methodology to allocate flexible capacity requirements to LSE SC based one possible measurement of the proportion of the system flexible capacity requirement to each LSE SC based on its contribution to the ISO's largest 3 hour net-load ramp change each month. Please provide comment regarding the equity and efficiency of the ISO proposed allocation. Please provide specific 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. Has the ISO identified the core components for allocation? Are more needed? If so, what additional components should be considered and how should ISO consider them? Are fewer needed? If so, what should the ISO include?

**EnerNOC has no comments on the allocation methodology at this time; but, reserves the opportunity to submit future comments.**

- b. Has the ISO used the right allocation factors for the identified components (i.e. load ratio share, percent of total capacity contracted)? If additional or fewer components should be considered as identified in 1a, above, please provide specific allocations factors for these components.

**EnerNOC has no comments on the allocation methodology at this time, but reserves the opportunity to file future comments.**

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

**Not at this time.**

2. The ISO believes that there are either tools in place or under development to manage a resource's use-limitations while still be subject to economic bid must offer obligation. The ISO, consistent with the CPUC's RA proposed decision, will require hydro resources to be able to provide a minimum of 6 hours of energy at Pmax to be eligible to provide flexible capacity. However, some resources, including demand response and storage resources may have use limitations that may do not fit well within these mechanisms.

**Answer:**

The CAISO's flexible capacity resource requirements and definitions were developed with traditional gas-fired generation resources in mind, both short- and long-start resources. Designing the flexible capacity requirement based upon one resource type, rather than the resource need, is patently unfair, discriminatory, and violative of the spirit and letter of FERC Order 719. Only after the Joint Parties' proposal was released and PG&E expressed concern about the possible exclusion of its hydro resources from meeting that product definition, due to the use limitations of those resources, did the definition change for purposes of allowing use-limited hydro resources to qualify. No such exercise has occurred to date for consideration of other use limited resources, including preferred resources, such as demand response. The flexible resource adequacy capacity must-offer obligation (FRACMOO) is based upon this generator-centric flexible capacity definition.

EnerNOC has significant objections to moving in the direction of applying a generator-centric product definition to use-limited resources and preferred resources, such as demand response (DR), without regard to the differences in operating characteristics of the resources. Further, in the Proposed Decision issued by the California Public Utilities Commission (CPUC or Commission), there is a recognition that additional work needs to be done to develop the

requirements for preferred and use-limited resources to participate as flexible resources.<sup>1</sup> EnerNOC fully agrees with the following statement of PG&E reflected in the Proposed Decision:

“PG&E recommends the Commission and the parties work to ensure that the flexible component of the RA program is structured so that it fully captures all of the flexibility attributes needed to operate the system reliably, and so that it does not unintentionally disadvantage available non-traditional resources (such as demand response, energy efficiency, and storage) that may be able to help meet those flexibility requirements cost-effectively but with less GHG impact than traditional, fossil fuel-powered resources.”<sup>2</sup>

Therefore, until a flexible resource adequacy capacity definition is adopted for demand response and other preferred and use-limited resources, EnerNOC does not support applying a generator-based must-offer obligation to DR resources. The adoption of a FRACMOO for preferred and use-limited resources before the flexible capacity resource requirements have been adopted would be putting the cart before the horse. Additionally, the requirements for a flexible capacity resource cannot be credibly adopted for all resource types when they were developed considering only the operating characteristics of one resource type.

At this point in time, flexible capacity resource definitions are designed to meet the maximum 3-hour monthly ramping need identified by the CAISO. With generation, the effective flexible capacity (EFC), can be defined, as follows:

For units with start-up time (SUT) < 90 minutes:  
 $EFC = \text{lesser of } (NQC - P_{\min}) \text{ or } RR_{\text{avg}} * (180 \text{ minutes} - SUT)$

For units with SUT > 90 minutes:  
 $EFC = \text{the lesser of } (NQC) \text{ or } P_{\min} + (180 \text{ minutes}) * (RR_{\text{avg}})$

Where:

NQC=Net Qualifying Capacity  
P<sub>min</sub>=Minimum operating capacity  
RR<sub>avg</sub>=Average ramp rate

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<sup>1</sup> Proposed Decision in R.11-10-023, issued on May 28, 2013, “There are a number of details remaining to be determined to fully implement the Joint Parties’ Proposal, as appropriately modified, for a mandatory flexible capacity framework starting in RA year 2015, including counting of use-limited resource and preferred resources.” Finding of Fact 20, page 64.

<sup>2</sup> Proposed Decision in R.11-10-023, issued on May 28, 2013 at pp. 47-48.

So, how exactly do these EFC resource definitions apply to DR? Or, said differently, how are the unique operating characteristics of DR considered in the definitions of EFC? In short, they are not considered.

DR is not a machine with a specific start-up time and a constant ramping rate. DR is the ability for a group of customers to drop load in response to a signal or event. In order for customers to drop load, they must be consuming. The greatest need for resources to meet the maximum 3-hour ramp doesn't occur at 5 AM nor at 10 PM. The greatest 3-hour ramping need, January 2014, occurs after hour 15 and prior to hour 20 (CAISO's Presentation, slide 20). Why not tailor the must-offer obligation, especially for use-limited resources, to the hours in which the need is greatest?

The monthly, maximum 3-hour ramping need, that is the basis of the flexible resource adequacy capacity requirement, is designed to meet is the net load requirement (total load less solar and wind generation). One of the best tools available to the CAISO to manage that monthly, maximum 3-hour ramping need is to change the shape of the net load curve. DR can help with that, either on the demand side or on the supply side. DR can reduce the load at that point in time so as to reduce the need for ramping capacity from generation for the peak of the ramping requirement. Without modifying the shape of the net load curve, the only other way to address the ramping need is to ensure that the CAISO has enough generation on hand that is capable of ramping up and down to meet that monthly, maximum 3-hour ramp. However, the ability for generation to supply the ramping capacity necessary for meeting the maximum 3-hour ramp is the only option that CAISO has focused upon to date. The net result of continuing on this path of adopting the CAISO preferred generator-centric flexible capacity model will be to exclude cost effective DR resources that could meet the needs of the CAISO system.

DR has historically been used as a peaking resource, and specifically as a summer peaking resource. It is called upon to clip the peaks or super-peaks, more cost-effectively, than procuring energy through spot sources when prices may be high or building new resources whose capacity would be idle in many hours outside of a peak period. 10% of peak capacity costs are used to meet 1% of the hours of the year. DR is a callable resource option to reduce peak and super-peak periods, which may drive resource development decisions.

In many ways, DR can provide a similar service to CAISO for meeting its peak ramping needs as DR does for meeting summer peaking needs in that DR can effectively reduce the maximum ramping requirement. DR is not now, nor will it ever be, a resource that can provide energy across a 17-hour period in a day and for 365 days/year simply because DR is not a generator. However, DR can and should be used to meet the maximum 3-hour ramping need, when that ramping

need is expected to occur. DR should be utilized to support generation resources when those resources are not available or are under-performing or when the need for ramping resources exceeded expectations.

In its June 19, 2013 Presentation, on page 14, CAISO provides information that could be the basis for developing flexible resource adequacy requirements for DR resources. There are two illustrations on this page. On the left, is a distribution chart that indicates the frequency with which certain amounts of flexible ramping capacity are required per month. The maximum amount of flexible ramping capacity, in red, is only required about 5% of the hours per month. On the right is a load duration curve, again, the maximum ramping capacity is only needed about 5% of the time. This is exactly when DR resources should be utilized. Why not consider developing a ramping requirement for use-limited resources that reflect the time in which those resources would be needed most to address the super ramp?

There are two possible ways of addressing use-limited resources for that purpose:

1. Require DR and other use-limited resources to offer into the CAISO's day-ahead and real-time energy markets when the CAISO predicts that it's next day ramping needs will be within 5% of the monthly, maximum ramping requirement and require the MOO for the period when that maximum ramping requirement is likely to occur (hours 15-20, for example.) or
2. Require DR to submit day-ahead and real-time energy offers every day between hours 15-20, for example, which is when the maximum ramp is most likely to occur.

DR offers during those hours are most likely to affect the net load curve shape. Since that period represents a point in time when customers are consuming electricity, decreasing demand will have the greatest effect. DR will be able to contribute the most at that point in time.

If the CAISO's current definition is adopted for DR resources, where DR must offer a constant capacity reduction across 17 hours, many of which coincide with hours on the net load curve where customer load is low, the ability for DR resources to reduce load would be limited to the lowest contribution across all hours. It is counter-intuitive and nonsensical to limit the capacity available to the CAISO that could best address its largest ramping concern, between hours 15 through 20, by the amount of load drop that is possible at 5 AM and 10 PM.

In some ways, DR will be a superior product relative to supply resources. For example, because DR is generated by multiple individual customer resources,

DR will not have the same likelihood of a total resource outage, as is possible with generation, especially aging generation that is being required to operate more strenuously than in the past by ramping up and down throughout a day. DR participation may actually extend the useful lives of some of those generation resources by reducing the amount of extreme ramping, up and down, to meet the super peaks.

DR doesn't have long-start problems and may actually allow the longer-start resources to be more effective, again, if the ramping need is less spikey. In fact, to some extent in the CAISO's calculation of EFC for long-start units, CAISO is giving these units the benefit of the doubt that they can actually be providing EFC to the system after 180 minutes, 3 hours. Some of these units have much longer start up times than 3 hours. DR can provide the full load drop within a very short period of time.

With that said, there are limitations to DR relative to other mechanical, generation resources. The majority of DR cannot be dispatched for 17-hours/day for 365 days/year for the very reason that these are not "mechanical" resources, but customers actively or automatically responding to reduce their demand. Such an exaggerated obligation would collapse the resource, unnecessarily. Aggregators would have to look for resources that are not driven by reducing summer air-conditioning load and can respond in late afternoon hours. However, if the "need" for the resource is married with the capability, DR resources will be a valuable tool to the CAISO in managing the reliability of the system. If CAISO is open to recognizing the differences between DR and other generating resources and is open to maximizing the benefit that DR can provide to meeting the defined need, then EnerNOC believes that DR can successfully contribute toward the solution.

- a. Please provide comments regarding what use-limitations are currently managed by existing or proposed ISO tools and what must-offer obligation should apply to these resources.

**Answer:**

Use limitations are properly viewed as the operating constraints of whatever resource type is being evaluated to meet the resource need. Generators have operating parameters such as ramp rates, start up costs, minimum run times, etc. As has been recognized already in CAISO flexible generation capacity model proposal, hydro generation sometimes requires a use limitation for maximum operating run time due to storage limitations. DR has its own operating parameter requirements that have not been addressed in the proposal in a way that would ensure that the model is resource agnostic. Consideration in the proposal is not given to



operating constraints appropriate for DR. This design flaw contravenes the requirements of FERC Order 719.<sup>3</sup>

Depending upon the ultimate flexible resource adequacy requirements adopted for DR resources, DR will need to incorporate specific use limitations. DR resources will need to limit the hours of dispatch per month to no more than 24 hours; a limit on the number of dispatches/month (8); a limit on the number of consecutive days a resource is dispatched (3); and a limit on the number of hours of dispatch/day (4). DR resources will be available during weekdays, not weekends and holidays.

- b. Should the ISO consider other minimum energy or run time limits for other types of use limited resources to be eligible to provide flexible capacity? If so, what should these limits be? Why?

Yes, based upon response above.

3. The ISO is assessing how bid validation rules could work for flexible capacity resources that are subject to an economic bid must offer obligation. The ISO provided two examples of bid validation rules and potential interpretations. Please provide comments regarding how the ISO should address each of these examples and any others that may need to be considered.

**No comment at this time.**

4. The ISO currently has a tool in place that allows for a resource to include the opportunity costs associated with run-limitations into the default energy bid. The ISO is considering a similar mechanism to allow resources with annual or monthly start limitations to include the opportunity costs of start-up in the resource's start-up and minimum load costs. Please provide comments on how the ISO should consider the opportunity costs for start limitations and how that opportunity cost should be calculated.

**Answer:**

EnerNOC has several concerns with the current approach of establishing the default energy bid based upon the inclusion of opportunity costs and run limitations.

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<sup>3</sup> Wholesale Competition in Regions with Organized Electric Markets, 125 FERC ¶61,071, Order 719, ¶64, et seq., (October 17, 2008).

As EnerNOC understands the CAISO's process for determining default energy bids, CAISO retains a third-party administrator for the calculation of default energy bids. The administrator meets with the market participant to determine the use limitations, discuss the opportunity costs and establishes a default energy bid. The default energy bid is a constant across an annual period. The administrator will determine when a bid needs to be mitigated and, when it does, the bid will automatically be mitigated to the default energy bid.

There are several problems with this construct:

- a. If DR participation is limited to super-ramps, DR bids will only be submitted when the resource is needed the most and when the value of the resource may be highest. DR would not be a resource that is bid 17 hours/day, 365 days/year.
  - b. The opportunity costs for DR resource vary significantly from day-to-day and an annual default energy bid would not capture that variation. For example, if a resource was needed on Black Friday or Christmas Eve and EnerNOC had a large percentage of retail stores in its portfolio, the opportunity costs for those stores to respond at that time would be greater than a Wednesday afternoon in March, for example. Similarly, if a plastic extrusion company was in mid-process, its opportunity cost at that juncture would be much higher than when it wasn't mid-process and at risk of losing its product. In short, a static price across all hours is not really workable for DR resources.
  - c. Automatic mitigation is also concerning. EnerNOC doesn't agree that a resource's bid should be automatically mitigated to anything other than the submitted bid without a due process or some finding that the bid was found to be an example of economic withholding.
  - d. It is unclear whether the existing run limitations are adequate for DR resources, as reflected in response 2.a.
  - e. The CAISO has already recognized, in its Reliability Demand Response Resource (RDRR) product proposal<sup>4</sup> that those demand resources have a high strike price that is well above the operating costs of most generation resources. Flexible capacity resources will be no different.
5. The ISO is proposing that all flexible capacity resources should be required to submit economic bids between 5:00 am and 10:00 pm. Please provide comments regarding this proposed must-offer obligation. Please connect to the

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<sup>4</sup> CAISO's RDRR Product Proposal submitted to FERC on May 20, 2011 in Docket No. ER11-3616-001 at p. 18.



response to this question to any responses to questions 4 or **Error! Reference source not found.**5 as appropriate.

**See comments in prologue.**

6. The ISO has proposed to include 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.

**Backstop should not be exercised until all available resource options have been explored.**

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

#### **LOCAL VERSUS SYSTEM FLEXIBLE RA CAPACITY:**

Yes. The Monthly, Maximum 3-Hour Ramping Requirement is a system, not local, requirement. However, due to the market design of the Proxy Demand Resource (PDR), which is the only vehicle available for DR participation in CAISO for purposes of submitting economic energy bids, the resource is mapped to a sub-LAP. That means that only DR resources will, necessarily, have a "local" component to meeting the flexible RA capacity requirement. Along with the design of mapping DR resources to a sub-LAP comes all of the performance criteria on that sub-LAP basis. If DR resources were able to provide a system flexible RA capacity resource, the amount of that resource could be significantly larger and the risk associated with providing that resource on a sub-LAP basis to the demand response provider (DRP) could be significantly mitigated.

#### **PEAKING RA REQUIREMENTS AND FLEXIBLE RA CAPACITY REQUIREMENTS**

It is unclear how DR resource availability for summer peaking purposes will coincide with summer flexible RA capacity availability requirements and whether the same resources can be used for both purposes. To the greatest extent possible, resources that are capable of providing both flexible and system peaking requirements should be able to do so. If separate products are developed for both, EnerNOC requests that customers who are registered with a DRP have the ability to participate as either type of resource. However, since these resources have different operating requirements and characteristics, it may not make sense to combine them into one Standard Capacity Product definition.