BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Oversee The Resource Adequacy Program, Consider Program Refinements, and Establish Annual Local Procurement Obligations.	Rulemaking 11-10-023 (Filed October 20, 2011)

COMMENTS OF ENERNOC, INC., ON ENERGY DIVISION RESOURCE ADEQUACY QUALIFYING CAPACITY AND EFFECTIVE FLEXIBLE CAPACITY PROPOSALS

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EnerNOC, Inc. (EnerNOC) respectfully submits these Comments on the Energy Division Resource Adequacy (RA) Qualifying Capacity (QC) and Effective Flexible Capacity (ELC) Proposals for Storage and Demand Response (DR). These Comments are filed and served today pursuant to the Commission's Rules of Practice and Procedure and the Phase 3 Scoping Memo and Ruling of Assigned Commissioner (AC) and Administrative Law Judge (ALJ) (Phase 3 Scoping Memo) issued on August 2, 2013.[1]

I. INTRODUCTION

In September 2013, the Energy Division released a Draft Staff Proposal for Qualifying Capacity (QC) and Effective Flexible Capacity Calculation (EFCC) methodologies for energy storage and "supply-side" Demand Response (DR). This draft proposal was one of the topics addressed at a Resource Adequacy (RA) Workshop held on October 14, 2013. EnerNOC submitted informal comments on these methodologies on October 22, 2013.

On January 16, 2014, the Energy Division released three staff proposals related to RA "implementation," effective load carrying capability (ELCC) and QC calculation methodology for wind and solar resources, and a further version of Energy Division's QC and EFCC

[1] Because the due date set for these comments by the Phase 3 Scoping Memo (February 17) fell on a Sunday, followed by a State Holiday ("President's Day") on Monday, the due date for these Comments is today, February 18, 2014. (Commission Rules of Practice and Procedure, Rule 1.15 ("Computation of Time").) This date was also confirmed by the Energy Division's presentation made at the Workshop held in this proceeding on January 27, 2014.

methodologies for storage and supply-side DR resources. These proposals were the subject of Workshop held on January 27, 2014.

In its Informal Comments filed on the Staff QC and EFCC methodologies for storage and DR, EnerNOC expressed "grave concerns" with the Staff's decision to calculate QC and EFCC using the ELCC model. In sum, EnerNOC strongly recommended against the Commission adopting the Staff Proposal for the purpose of determining QC and EFC for DR resources for the following reasons:

1. The methodologies are too complex and have not been utilized in any successful wholesale market design;
2. Application of these methodologies could be disruptive or damaging to the development of DR resources as supply-side resources relative to other generation resources to which this methodology will not be applied;
3. The Staff's approach will make contracting more difficult and risky because RA value is dependent upon these complex model results;
4. Comparing any resource against a "perfect generator" would result in de-rates to available capacity across the spectrum. It is even more concerning when applied to a resource that is not a generator and is being forced into that square peg. It is far better to define the requirements of the resource on the front-end, recognizing its use limitations, than to compare it on the back-end to a perfect generator and de-rate the capacity value it can contribute;
5. The use of historical data is problematic;
6. The calculation of a monthly QC is in conflict with the way that QC has been defined historically and for other resources;
7. There are concerns about the relationship between the LoIP methodology and the ELCC methodology application when retail programs are bid into the wholesale market; and
8. There are definitional concerns contained in the Staff Paper.

As discussed in detail below, the Staff Proposal as presented at the January 27 Workshop has not changed significantly to address these issues. For this reason, EnerNOC continues to object to its use to determine the QC and EFCC of DR resources.

II.
THE PREMISE IN THE STAFF PROPOSAL -- THAT DEMAND RESPONSE MUST PARTICIPATE IN THE WHOLESALE MARKET TO COUNT FOR RESOURCE ADEQUACY -- IS PREMATURE AND MAY BE HARMFUL TO EXISTING, DISPATCHABLE DR PROGRAMS.

The Staff Proposal for determining the QC and EFC for DR resources assumes that the premise presented in the DR Rulemaking (R.13-09-011) is adopted, such that the proposal would only apply to resources bid into the wholesale market as supply-side resources and all other DR resources would be treated as load modifiers.[2] While it is important to determine the characteristics that DR resources that participate in the wholesale market must possess in order to qualify for RA, it is premature to assume that the Commission will adopt the proposed "bifurcation" between retail and wholesale DR programs, as expressed in R.13-09-011. First, no Proposed Decision on that topic has been issued. Second, there were significant comments and concerns expressed about the implementation of bifurcation in that docket. The designation of "customer-focused" programs, for example, was an area of comment as a misnomer, since all DR resources are customer-focused.

But, beyond nomenclature, the Staff Proposal, wherein all DR resources that participate in the wholesale market are thereby supply-side resources and qualify for RA and all others that do not participate in the wholesale market do not qualify for RA, is a significant departure from current practice and should not be incorporated as fact in the draft. For example, EnerNOC's DR resources are, today, counted as supply-side resources, and toward meeting the LSE's RA requirement, and are not counted as load modifiers. In previous RA Proceedings, the difference

[2] Staff Proposal, at pp. 1-2.

between load modifiers and supply-side resources was whether the resource was dispatchable or not. EnerNOC's DR resources are dispatched by the utility, with performance obligations, as opposed to a rate program, to which customers can decide to modify their behavior or not. The current definition would seem to indicate that a resource counts for RA *only* if dispatched by the CAISO. In that case, EnerNOC's current DR resources would no longer count for RA and would be counted as load modifiers. It is unclear whether the reduction as a load modifier will be a one-for-one exchange for the RA value ascribed to the resource.

That change could have significant, negative implications for existing contracts. For example, qualifying for RA is a prima facie requirement of acquiring the resource. It is the risk of the supplier, EnerNOC, in this example, to meet that requirement. It is not clear that reducing the need for RA resources meets the intent of the contract.

Therefore, EnerNOC encourages discussion around the presumption upon which the entire paper is based on the difference between load modifiers and RA resources and the implications to existing DR resources. As indicated in EnerNOC's informal comments, it is highly likely that DR resources will continue to be solicited by the investor-owned utilities (IOUs) and then, possibly, bid by the IOUs into the wholesale market, possibly not. It is important not to have varying means of counting DR resources for RA purposes depending upon whether they supply-side versus demand-side.

III.
THE STAFF PROPOSAL REQUIRES FURTHER REFINEMENT.

A. RA ELIGIBILITY REQUIREMENTS

1. Local Delivery Requirement

California has designed its wholesale DR products in a manner that is exactly opposite to the manner in which DR resources participate in other wholesale markets. For example,

resources are dispatched on a system basis, unless the resource is needed on a local basis. The system operator has the ability to distinguish on what basis the resource is required: for a system need, the resource is dispatched on a system-wide basis, while for a local need, the resource is dispatched locally.

DR resources that participate in the wholesale market in California *MUST* bid, dispatch, and settle on a sub-LAP basis only, irrespective of whether the need is a system need or a local need. The Staff Proposal correctly states that, in order to participate in the Proxy Demand Resource module in the CAISO, DR resources must be deliverable on a sub-LAP (load aggregation point) or customer LAP basis within a local capacity area (LCA).[3] At present, this requirement is further disaggregated to require a demand response provider to bid by sub-LAP by LSE.

In order for aggregation to be effective, the group of customers must be large enough, with a diversity of participants, to mitigate the risk imposed by individual customer variations in response. Otherwise, the aggregation is meaningless. By definition, DR resources are not single site resources, but dispersed and distributed across a geographic area. This is a significant difference between DR and generation.

Requiring DR resources to be deliverable by sub-LAP can run counter to several Commission goals and may be, in certain instances, discriminatory toward these resources in providing certain services. For example, EnerNOC provides DR services to the commercial, industrial and institutional (CI&I) sector. If any single sub-LAP does not have a robust CI&I sector, EnerNOC will not provide services there. Conversely, if a sub-LAP contains a diversity of CI&I load, EnerNOC will provide services there. Size and diversity are important because

[3] Staff Proposal, at p. 2.

even if there is adequate size, if most customers respond in the same way, it limits the performance profile of the resource.

For RA purposes, delivery requirements have been defined by LCA. LCAs contain several sub-LAPs and offer a larger opportunity for aggregation than sub-LAPs. But, if the CAISO is dispatching multiple sub-LAPs simultaneously, then it raises a question as to whether the need is local or system. If system, why do resources need to bid and settle on a local basis? Why not on a LCA basis? Lastly, flexible capacity resource needs have been defined on a system-wide basis. There is no local flexible capacity resource requirement for this iteration of FRACMOO implementation. Why force DR resources to bid, dispatch and settle on a sub-LAP basis when the requirement is a system requirement?

It would be much easier to schedule, dispatch and settle on a default LAP basis, as opposed to a sub-LAP basis for a system resource need. As such, this design is likely to limit DR participation in the wholesale market. The design should allow the resource provider to decide if it wants to provide a local or system resource.

2. Eligibility

The Staff Proposal states that all RA resources should have the same eligibility requirement: ability to dispatch for 4 consecutive hours over three consecutive days subject to the must-offer obligation (MOO).[4] EnerNOC does not oppose that definition as a standard for RA eligibility across all resource types for "generic" capacity, but not for flexible capacity. There are other requirements that are associated with generic RA resources. For example, DR resources must be available, for peaking purposes, between 1 PM and 6 PM between April and

[4] Staff Proposal, at p. 3. At present, DR does not have a MOO for generic capacity in the wholesale market.

October.[5] Staff's Proposal must be clear as to whether these requirements will be included as requirements for counting as RA resources for DR, or for all resources.

For FRACMOO, availability requirements differ by category, as contained in the Draft Final CAISO FRACMOO Straw Proposal. Therefore, it may not be possible to have one criterion that applies across all reliability products, generic and flexible, as the requirements for flexible resources vary dependent upon category (base, peak or super-peak). For peak and super-peak flexibility resources, the requirement is to be available for a 5-hour window, which may vary by season, for 3 hours of energy dispatch. In summary, four hours of dispatch over 3 consecutive days may still be appropriate for peaking (generic) resources, with the caveats described above, but will not be applicable for flexible capacity resources.

B. TESTING AND EVALUATION

1. Historical Performance Data

Staff Proposes to use historical data to determine QC or EFC of DR resources and, if not possible, to use program design or testing.[6] DR portfolios are a bit like DA customer portfolios in that they tend to be more dynamic then static. So, is the proposal to test the entire portfolio or just the customers that have been added to the portfolio? At what point will testing be done? Will the capacity be static across all months or dynamic to reflect expected changes?[7] Most certainly, the historic numbers will likely *not* be representative of the future portfolio.

Both QC and EFC can be shaped on a month-by-month basis to reflect the needs on the system and the capabilities of the resource. It is unclear how shaped bids will be treated relative to either the use of historical data and testing.

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[5] D.10-06-036, at p. 44.
[6] Staff Proposal, at p. 4.
[7] Flexible capacity requirements vary by month.

This is the problem with an administrative method of determining DR capacity availability. In other markets, the resource bids its availability through an auction mechanism and then is held to the delivery obligations associated with the acceptance of its bid. The rigors of the market, for under-performance, encourage performance and the market participants bear the risk of their performance.

2. Testing

The Staff Proposal states that DR resources must be dispatched or tested annually, under expected dispatch conditions for a two-hour period. DR resources should be paid for test events on a basis comparable to regular dispatch events. Further, to qualify for flexible capacity, DR resources can select a month to be tested and the CAISO will select the test event window with that month.[8]

EnerNOC agrees that resources should be dispatched or tested annually under expected dispatch conditions, and paid as if the test was a regular dispatch. Expected dispatch conditions can be open to interpretation. However, the requirement to have a resource at a constant state of readiness for a test over the course of a month is too long. Part of EnerNOC's services to its customers is to provide information on the likelihood the resource will be dispatched, to prepare its customers to be ready and able to perform at its best. Resources perform best when the customers have a reasonable expectation of when the resource is going to be dispatched so that they are prepared. EnerNOC maintains a steady level of communication to its customers over system conditions and pricing and indicates when a resource is likely or unlikely. Catching customers unaware of DR dispatches creates customer confusion, dissatisfaction and poor performance. In that way, the test does not simulate conditions comparable to an actual dispatch,

[8] Staff Proposal, at p. 4.

because an actual dispatch would carry with it some advance notification from EnerNOC to the customers.

It is EnerNOC's mission to prepare customers with communication of system conditions (fires, congestion, prices) to give them information as to why their response is needed. Utilities provide us with a required amount of advance notification as to their imminent dispatch of the resource, which is then communicated to customers. If EnerNOC were bidding resources into the wholesale market, it would have an idea through system conditions, including price, as to whether its bid will be accepted and the resource will be dispatched. That information would be communicated to customers as well. But, to leave the customers completely unaware of expected dispatches works to no one's best interest.

As such, EnerNOC respectfully requests that DR providers be able to choose their test window, just like generators and storage resource can choose theirs. It isn't clear why DR resources should be tested in a manner different from the generators.

3. Aggregate Versus Individual Reporting of Performance Data

The Staff Proposal states that it intends to permit performance reporting on an aggregate, versus individual, basis, with the ability to audit individual performance data upon request.[9] EnerNOC agrees that only aggregate data should be required for performance evaluation, not individual data. The aggregate resource is being bid into the wholesale market. Performance should be judged against the aggregate resource. However, EnerNOC has no objection, from an audit standpoint, if the CAISO or the CPUC which to review individual performance supporting the aggregate report.

ISO New England (ISO-NE), in particular, required individual customer data to confirm aggregate resource performance and found themselves swimming in data that, by and large, was

[9] Staff Proposal, at pp. 4-5.

unanalyzed. Data collection for that purpose alone will overwhelm both the CPUC's and the CAISO's ability to analyze it effectively. Thus, it seems appropriate that aggregate data be available for performance evaluation purposes and individual data be available for the purposes of auditing the aggregate data.

C. APPROACH RECOMMENDED FOR QC AND EFC CALCULATIONS

1. QC

The Staff Proposal proposes to test energy storage (ES) resources for QC and to require the use of load impact protocols (LIPs),[10] which is a historical modeling approach and may not be reflective of the actual amount of capacity that the resource is delivering presently. Historical data may not be representative of the resource's current capabilities, as discussed earlier in this draft. It is also unclear as to why other resources' QC, like ES and generation, are determined pursuant to a four-hour test, whereas DR resources' QC is determined through the LIPs, which is the basis for determining retail DR capacity.

2. EFC

a. Resources Qualifying for EFC Must First Qualify for System RA.

The Staff Proposal suggests that resources wishing to qualify for EFC must first qualify for system RA.[11] This requirement that a resource's flexible and generic capacity must be bundled and that a resource cannot be 100% flexible is based upon generation. This assumption is neither accurate nor appropriate for DR resources.

System RA is for meeting peak needs. As discussed above, peak requirements include the ability to be dispatched for four hours over three consecutive days between 1 and 6 PM between May 1st and September 30th. EFC is required either between 7 AM and noon or 3

[10] Staff Proposal, at p. 5.
[11] Staff Proposal, at p. 5.

and 8 PM over the entire year, with the greatest need for flexible resources occurring between November and March. EnerNOC would put together a separate portfolio to meet each resource definition, as opposed to putting together a composite resource. The reason is the potential for multiple, daily dispatches that would fatigue customers. Also, different customers have different capabilities to meet the different requirements.

EnerNOC has protested this construct for DR in the CAISO's FRACMOO Proposals. EnerNOC strenuously requests that the Staff consider these concerns and not require DR to assemble a composite resource that is meant to meet two separate operational requirements and, instead, allow DR resources to choose to provide either, generic or flexible capacity.

b. Negative Pmin.

Staff's Proposal recognizes that certain resources can contribute to system stability by either charging or increasing load when the system is in an over-generation situation, thereby resulting in negative Pmin.[12] Resources with that capability help flatten the net load profile both by meeting the ramping need and also by "filling the valley" or reducing the duck's belly, when the system is in over-generation mode. As such, Staff wants to consider these benefits as part of the EFC calculation. EnerNOC is interested in examining the benefits of a negative Pmin as well and appreciate Staff's inclusion of this issue in its Proposal.

c. Ramp Rates

CAISO has included a way of calculating ramp rates for slow and fast-start resources on a MW/min basis. In the CAISO's recent FRACMOO Stakeholder Meeting, CAISO presented a methodology by which storage resources could be counted for EFC purposes by designating a constant ramp rate, instead of a constant MW reduction level.[13] DR resources have similar

[12] Staff Proposal, at pp. 5-6.
[13] CAISO Draft Final FRACMOO Straw Proposal, February 7, 2014, at p. 38.

limitations in that DR resources can only reduce load to the extent load is being served on the system. For example, for CI&I customers, loads are small, but increasing, hour-by-hour from 7 AM until noon and, conversely, larger, but decreasing, hour-by-hour from 3 PM until 8 PM. There is less load to drop at 7 AM and 8 PM, than at noon or 3 PM, because there is less load being served on the system in those hours. An increasing ramp rate, between 7 AM and noon, and a decreasing ramp rate, between 3 and 8 PM could serve DR by reflecting the limitations on load that is available to be reduced relative to load being served on the system. EnerNOC would appreciate exploring this option during any future RA workshops on this topic.

D. FUTURE MODIFICATIONS

EnerNOC agrees that any adopted methodology for measuring RA for resources that are bid into the wholesale market will need to be revisited and re-evaluated over time as to its efficacy in measuring resource contributions to QC and EFC. However, EnerNOC remains dubious that the application of an ELCC or EFCC is in the long-term best interests of preferred resource development in the State. As such, EnerNOC will remain engaged in this process as it continues to develop.

IV.
CONCLUSION

EnerNOC appreciates the opportunity to submit its comments on Staff's Draft Proposal on developing QC and EFC for ES and DR resources. Staff has provided many thoughtful proposals, of which EnerNOC is supportive, such as the discussion around local deliverability areas, performance measurement, and consideration of a "negative Pmin". However, there are other aspects of Staff's Proposal that requires further discussion and modification relative to bundling EFC and generic capacity, testing, ramp rates, and the use of historical data and LIPs

for determining QC. Further, EnerNOC remains skeptical that the incorporation of ELCC will be beneficial for preferred resource development in the State.

Respectfully submitted,

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