

**ENERNOC, INC. COMMENTS ON THE CALIFORNIA ENERGY COMMISSION'S (CEC'S) JUNE 17, 2013
WORKSHOP ON INCREASING DEMAND RESPONSE CAPABILITIES IN CALIFORNIA
Docket 13-IEP-1F**

EnerNOC, Inc. ("EnerNOC") is pleased to provide comments on the CEC's June 17, 2013 workshop to gather input on the challenges and opportunities of facilitating rapid expansion of demand response (DR) to address the immediate need created by the San Onofre outage in Southern California as well as the need to develop strategies to quantify and capture additional benefits for California. EnerNOC appreciated the opportunity to participate on one of the panels at the workshop to provide the aggregator perspective on increasing DR in California. It was very encouraging to hear from Commissioners, customers, technology experts and our utility partners that aggregators are an important and valuable contributor to the success and growth of DR in California. EnerNOC commends Commissioner McAllister and the CEC staff for a very informative, productive workshop, and we look forward to participating in future discussions as the CEC continues to develop policies on DR as part of the Integrated Resource Plan Report (IEPR).

GENERAL COMMENTS

EnerNOC agrees with the message from several Commissioners that it is vital for CAISO and all the state agencies to be on the same page and prioritize DR activities in the same manner. Broad consensus among the state agencies is critical to ensure a consistent understanding and approach to DR activities within the state and efficient use of resources to address DR issues. California's clean energy goals have to be reflected in the CPUC's rules and requirements, the CEC's load forecasts, and the CAISO's planning processes or those goals will be undercut.

EnerNOC also agrees with Commissioner McAllister's comments and questions to the panels that focus on what motivates customers to participate. Customers were emphatic in expressing the need for clear, simple rules that are developed in a timely manner and provide certainty for customers. In addition, customers expressed concern about high penalty structures for DR resources. EnerNOC agrees and recommends that penalties be no more onerous for DR resources than for other generation resources. For example, DR resources that fail to meet their capacity commitment are automatically derated and incur significant payment penalties. Other generation resources have their capacity commitments reviewed and adjusted in subsequent delivery years, and their payments are not derated to the same extent as DR resources.

One message that is a bit problematic, however, is the idea that California requires a "uniquely California" solution to increase DR. There was a lot of discussion at the workshop about PJM's market design and success in integrating DR into its market. California regulators expressed a lot of interest in getting similar results in California. EnerNOC believes that in order to see that type of successful DR integration in the wholesale market, we must begin with a design that replicates the wholesale market design of PJM. EnerNOC completely agrees that the California market design has a lot of layers with many diverse actors and has developed differently than other markets. However, starting with a design

that has already been demonstrated to work will allow the stakeholders and the CAISO to gain experience with wholesale DR.

EnerNOC also appreciates that there are significant differences between the PJM and CAISO market models, principally the existence of, and the lack thereof, respectively, a capacity market. However, it is difficult to parse the success of PJM from the existence of a central capacity market. Ultimately, appropriate economic signals will drive market development, and, conversely, the lack of economic signals will continue the existing need for revenue supplements that are exogenous to the market.

INCREASING DEMAND RESPONSE ON CALIFORNIA

EnerNOC is participating in a number of different efforts in California to develop wholesale market opportunities in California for DR. Our general feeling, which was supported by the majority of the workshop participants, is that the current wholesale market is not an attractive economic opportunity in California. EnerNOC remains committed to solutions that will increase DR in California. EnerNOC's suggestions are outlined below and include additional detail on issues raised at the workshop.

Start Simple

Several workshop participants emphasized the point that California is starting from a different place than other markets. DR resources in California have been developed, primarily, through retail utility programs which have grown over time and cultivated a fairly loyal customer base. The current retail programs are quite complex in comparison to successful wholesale DR program implemented in other parts of the country. For example, the Aggregator Managed Portfolio contracts with SCE and PG&E include the ability to be dispatched on a local basis with as short as 30-minute notification. Given that there has been virtually no experience with DR in the CAISO wholesale market to date, EnerNOC suggests that DR integration into the wholesale market should start simple, with products that are similar to existing successful retail DR programs in California as well as the successful wholesale market design of PJM. Over time, more and more complex products can be offered.

While EnerNOC has experience providing ancillary services and other forms of fast response resources in other markets, that participation does not approximate the amount of DR that acts as a capacity resource for reliability purposes. Market experience with providing load following and regulation is still in the pilot stage. EnerNOC has experience providing contingency reserves in PJM, under-frequency support in New Zealand and Alberta, and has recently signed an agreement with Portland General Electric to provide non-spinning reserves through automated agricultural pumps.

There are higher costs, greater coordination and automation required for fast response resources. Not all customer loads can be automated, due to safety or production concerns, although, with adequate notification, even those manual resources can respond in 30 minutes or less. EnerNOC has also found that automation does not equate to higher reliability. Customers can override or disconnect automated equipment. Customer response, even when automated, can vary based upon the conditions of the day.

Therefore, it is EnerNOC's belief that even automated resources require management to ensure reliable service. At present, nearly 40 percent of EnerNOC's accounts are automated. Further automation of customer sites has been halted, however, because Auto-DR funding has been exhausted.

Overly complicated or expensive metering and data requirements can stunt DR growth in the wholesale market. There are advances being made in the ability of meters to collect and transmit data much less expensively, as several workshop participants described in their presentations. EnerNOC, for example, uses one such device for a majority of its 13,500 customer locations. EnerNOC collects large amounts of data from its customers. We can aggregate performance from those customers to a resource level that can be shared with system operators. But requiring individual customer data streams to a system operator will only serve to overwhelm the CAISO without really providing better ability to manage or operate the system more reliably. Onerous requests for data can create huge operating costs for both the system operator and the market participant.

EnerNOC is absolutely willing to participate in meaningful programs to develop and learn from new DR resource opportunities in the wholesale market as long as a solid base is established from which to start.

Maintain the Value of Existing Retail DR

Since DR developed in California on a retail basis, it is important not to diminish the value of those retail programs by focusing exclusively on wholesale market participation. Recent regulatory signals have emphasized the integration of retail DR into CAISO's wholesale markets, without emphasizing the importance of maintaining the existing resource. We should ensure that we are not jeopardizing the valuable resources that we have built up in the retail environment by forcing resources to participate in a market that is neither designed for those resources nor encourages participation.

From an aggregator's perspective, the wholesale market does not today provide adequate market signals to attract participation. Energy prices are low for most hours. Capacity payments for DR resources that participate in the wholesale market are not "bankable" today. It is not clear what DR resource requirements will be imposed in order to qualify for resource adequacy. This lack of clarity translates into a lack of desire to procure "capacity" from DR resources in an energy-only market. Until that issue is resolved, the only opportunity for a demand response provider to obtain a capacity payment is through utility contracts, which provide a capacity payment for aggregator resources. However, those contracts, to the extent they are compatible with the wholesale market design, can be bid into the wholesale market by the utility. As such, retail contracts may actually enable more participation in the wholesale market than if those retail relationships go away.

Establish a Glide Path for Wholesale Market Integration

Currently, DR resources have two options for direct participation in CAISO: 1) Load-serving entities (LSEs) can bid DR as Participating Load or 2) DR Providers (DRPs) can participate in the CAISO's Proxy Demand Resource (PDR). Since EnerNOC is not an LSE, it cannot participate as Participating Load.

Currently, the CPUC prohibits DRPs from bidding bundled service customers of the utility into PDR. Direct Access customers are free to participate in PDR if they wish. To the best of EnerNOC's understanding, there is water-pumping load participating in the Participating Load program and little participation in PDR. Therefore, there has not been robust DR participation in CAISO's available DR products to date. EnerNOC is skeptical that robust wholesale market participation will develop absent changes in the incentives to participate in the wholesale market.

Progress has been made by the parties to address the regulatory hurdles to direct participation in the CAISO through Rule 24 negotiations and workshops. It is possible that the existing regulatory barrier to unbundled, retail customer participation in the wholesale market could be removed by the end of the year.

Currently, the investor-owned utilities (IOUs) have several retail demand response programs, including dispatchable, aggregator-managed portfolio (AMP) contracts. EnerNOC provides hundreds of megawatts of DR services under contract to the IOUs. Many of those MWs are capable of being locally dispatched, either on a local capacity area (LCA) basis or on a sub-LAP basis, with a 30 minute notification. The CPUC recently ordered the IOUs to impose local deliverability requirements upon DR resources in order to qualify for local resource adequacy credit. Further, the Commission has ordered the IOUs to make at least 10 percent of their retail programs compatible with being dispatched by the CAISO. Certainly, progress has been made toward developing resources that are compatible with CAISO's market design, but, yet, not very much wholesale activity has transpired.

Prior to the CPUC's February 2013 decision, the CAISO did not consider DR resources in its transmission planning process or for meeting the local capacity requirements (LCRs). In that Decision, the CPUC ordered SCE to work with CAISO to determine the operational capabilities for DR resources to meet the LCR. In short, the rules for DR to meet a LCR are in flux. Until DR resources are recognized in the CAISO's planning processes, the joint agencies Energy Action Plan energy policies will be disconnected from the manner in which CAISO plans for system resource needs. That disconnection devalues DR.

It has been very difficult to plan over the last two DR program cycles because it was unclear whether all retail programs would cease to exist in favor of developing the wholesale market. At the same time that the state regulatory environment was encouraging wholesale market DR participation, the wholesale market was undergoing significant regulatory changes to accommodate DR into the wholesale market. Understanding the role and place for DR participation more than one year forward would be helpful. Having a timeline established for any transitions would also be helpful. Being mindful that companies need to plan for such changes is important. Changes in the product design should be developed with enough lead-time and notice to allow stakeholders and participants to anticipate and plan for those changes.

Ensure that the Wholesale Market Design is Economically Attractive

The drumbeat at the workshop was that customers require appropriate economic incentives to ensure the type of DR response that is so attractive in PJM. As Susan Covino articulated, 9% of PJM's peak demands are met with DR resources, and Susan attributed that success rate to the forward capacity market structure that allows DR to clean as a capacity resource with capacity payments comparable to generation. CAISO's products, on the other hand, are energy-only products, and energy prices in CAISO are low. Resource adequacy capacity prices are also low because California has a high reserve margin. The end result is that there is no clear pathway for DR resources who participate in the CAISO wholesale market to receive capacity or resource adequacy credit.

There seems to be universal understanding that DR resources require a capacity payment to facilitate robust participation. To that end, there has been renewed discussion this year around a capacity market design. The process to develop a capacity market is likely to be a lengthy process, and its success depends on the political will to move in this direction. A capacity market alone may not be sufficient if the market price recognizes the current over-supply of capacity, which is also reflected in current resource adequacy prices. Market designs that employ a vertical demand curve run the risk of boom and bust cycles where demand response will participate when the reserve margin is low and prices are high, but will not when the reserve margin is high and prices are low. That is not a sustainable mechanism.

Recognize operational differences

DR Resources can provide capacity support to the system by reducing demand when, and where, it is needed. DR Resources are not energy resources. They are not base-load resources. They are intended to reduce demand for limited periods of time. Therefore, energy-based compensation does not work for DR Resources, especially in markets that are mitigated. As stated above, DR resources are capacity resources that require a capacity payment.

DR Resources are not point resources, like a generator; they are distributed. However, DR can provide "local" relief if the geographic area is not so small as to reduce the value of aggregation and the portfolio. Customers have different capabilities for reducing demand at different times. To mitigate against performance risk, EnerNOC assembles a portfolio of customers to balance the risk of underperformance by any single customer resource. Reducing the value of aggregation, by reducing the size of the local delivery area, results in increasing performance risk and increases the cost of participation.

Product definitions that are designed around generator operating characteristics, and not load, will create barriers for DR. The flexible capacity product proposal is an example of that. CAISO's current definition of flexible capacity resources requires DR to offer a constant capacity reduction across 17 hours, many of which coincide with hours where customer load is low. This limits the ability for DR resources to reduce load to the lowest contribution across all hours.

At this time, flexible capacity resource definitions are designed to meet the maximum 3-hour monthly ramping need identified by the CAISO. However, 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 or at 10 PM. The greatest 3-hour ramping need, identified in the CAISO's presentation, occurs after hour 15 and prior to hour 20. In comments recently submitted to CAISO, EnerNOC proposes to tailor the CAISO's must-offer obligation, especially for use-limited resources, to the hours in which the need is greatest.

DR has historically been used as a peaking resource, and specifically as a summer peaking resource. It is called upon to clip the 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. 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 a year. 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.

Thank you for consideration of our comments.

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