

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Centralized Capacity Markets in Regional Transmission Organizations and Independent System Operators Docket No. AD13-7-000

COMMENTS OF ENERNOC INC.
On behalf of Dan Curran, Principal, Market Strategy

INTRODUCTION

As a participant in the panel entitled Mechanics of Current Centralized Capacity Markets at the September 25 Technical Conference on Centralized Capacity Markets (hereinafter “Conference”), EnerNOC, Inc. (hereinafter “EnerNOC”) hereby submits these comments in response to the questions posed by Commission Staff. EnerNOC is a Demand Response Provider, or Curtailment Service Provider (“CSP”), participating in each of the three RTOs/ISOs with centralized capacity markets which are the focus of the Conference. EnerNOC also operates in many other markets across the country and world. Some of these systems have capacity markets; some do not, which helps inform our comments.

As noted by Staff in their Report on *Centralized Capacity Market Design Elements*, centralized capacity markets were implemented “to provide more lead time and certainty for investment in new capacity resources, including an adequate opportunity for all resources to recover both their variable and fixed costs over time” (Staff Report at 2). EnerNOC concurs that centralized capacity markets, where they exist, offer greater market stability to allow for more rational investment decisions surrounding capacity resources, including demand response. We also believe that capacity market mechanisms have also served to increase confidence generally that resources are available to meet system reliability needs. Given the number of refinements to those markets in recent years to accommodate things such as “an evolution in the mix of available resources driven by low natural gas prices, state and federal policies encouraging the entry of renewable resources and other technologies, state policies supporting the development of resources in particular areas or with particular characteristics, the retirement of aging generation resources, and the need to retain certain resources” (Staff Report at 2), we concur that now is a critical time for the Commission to take a broader look at whether capacity markets have accomplished their intended objective, and what, if any refinements need to be made.

EnerNOC offers the following comments on the success of capacity markets and what the focus needs to be to ensure ongoing success and growth of capacity markets, particularly with regard to the

incenting and maintenance of vital demand response resources. Our comments are guided by several important principles, as follows:

- Wholesale capacity market design benefits from the participation of demand response in terms of creating resource and fuel diversity, fast and reliable response, competitive pricing resulting from more elasticity between supply and demand, and cost benefits to ratepayers.
- Market design should not confuse comparable opportunities with sameness. Market design has to recognize the unique characteristics of each of the resource types, including demand response, and determine the rules for participation of that resource based on a fundamental understanding of the business model for that resource.
- Regulatory certainty leading to market stability, integrity, and sustainability is a critical tenet of a capacity market design.

DISCUSSION

Capacity markets are not just effective, they are successful. They have attracted a diverse portfolio of assets giving system dispatch operators options and flexibility which have kept the lights on under extreme economic conditions, changes to environmental requirements, and changes in fuel and resource mix. This is not to say that some changes may not be appropriate in some markets; rather that the capacity markets have been successful in meeting system adequacy in the face of change. Centralized capacity markets have so far successfully ensured resource adequacy by attracting and effectively using assets that serve different purposes to ensure the lights are on under even the most extreme and diverse of circumstances. However, as the resource mix continues to change, their ability to continue to do so has come into question in several markets.

At a very basic level, capacity market participants have agreed that, in exchange for being available when needed, that is during shortage conditions or emergencies, capacity resources agree to provide energy, or not consume it. Stated differently, capacity is a call option on energy delivered during times when it is needed most. A corollary is that all resources that do so in a comparable manner should be paid a comparable price.

Given the proven success of having capacity prices be blind to physical attributes, the question then becomes how to properly and comparably define the availability obligations of all these different capacity assets. Particularly when we must achieve both reliability and proper market valuation of those resources in a truly competitive market yielding just and reasonable rates.

Performance Standards

Part of accomplishing the appropriate mix of resources and assigning reasonable availability obligations is imposing necessary performance standards in order to ensure fulfillment of the availability obligation that was defined. As noted by Staff in their Report, “performance requirements in the eastern RTO/ISO markets today fall into two general categories: must-offer obligations and performance standards.” (Staff Comments at 22). For demand response resources, EnerNOC supports reliance on reasonable and necessary performance standards as the means by which performance should be assessed. In the case of demand response, a must-offer is merely an unnecessary duplicative performance requirement in an attempt to ensure the resource will be available to perform when needed. While must-offer obligations may serve policy objectives for efficient dispatch of generation resources, a must-offer requirement is incongruous with the incentives facing demand response resources.

Obligations to offer into the energy markets in situations other than shortage conditions make sense for those capacity resources that will be needed to provide energy or that choose to provide energy during those periods. Generation resources, for example, generally would choose to operate whenever the locational marginal price in the market exceeds a generator’s short run marginal cost. A must-offer requirement may also be required in order to prevent generation resources from exercising market power.

Demand response resources, by contrast, are not in the business of selling load reductions as a primary business. By virtue of the willingness to participate in a capacity market, the demand response resource is expressing its willingness to interrupt (or ensure that consumption is below a pre-determined level at time of dispatch). But this willingness to interrupt in exchange for capacity compensation is not the same as the preference to be interrupted. This difference in economic incentives is a key difference between generation and demand response, and it is a key reason why must-offer mechanisms may be a good fit for generation but are a poor fit for demand response. Generation will choose to be dispatched as often as it is profitable to provide energy, while demand response generally would prefer not to be interrupted.

Underlying notions of the applicability of must-offer requirements to demand response resources participating in capacity markets is that such resources want to actively participate in the energy market, influence prices, and earn energy market compensation. While this may be true for some limited number of customers that participate in demand response capacity markets, it is clearly not true for all, or even most participants today.

While the rest of capacity market participants do (at some level), and some demand response participants will want to, actively participate in energy markets, there are many demand response participants who choose not to pursue proactive participation in energy markets.

Many customers who participate in demand response are quite willing to be interrupted to meet system needs, but would prefer to focus on their primary economic activity of operating their business rather than interact in the energy market. Applying a must-offer requirement to these customers is economically inefficient. These customers will generally choose to bid a very high energy price, which may result in the customer being interrupted less frequently than it would otherwise be willing to be interrupted in exchange for a capacity payment and cause energy prices to go higher than necessary.

The incentive structure facing demand response resources to bid high to avoid dispatch should not be confused with the notion that such customers are somehow exercising market power through withholding. Nor should it be understood to mean that customers that want to participate in demand response as capacity resources are not willing to be interrupted. Neither of these statements is true. Demand response participants are load, and as such do not have an interest in raising prices. The motivation for wanting not to be dispatched too frequently is entirely rational.

Recognizing this fundamental fact about many or most demand response resources leads to the logical conclusion that the most efficient means to induce dispatch activity is through administratively determined performance standards, and penalties for failing to adhere to those standards. Rather than rely upon a price signal that will be generally ineffective at inducing response for demand response capacity resources, performance standards that are objectively based upon system conditions would serve to ensure that demand response capacity resources will be utilized when conditions are warranted.

Finally, requiring demand response resources to participate in the energy market, where their offers will set price and determine their physical operation is likely to result in the examination of their offers by market monitoring units and possible referral to the Commission's office of enforcement unless CSPs, and ultimately customers, are able to justify those offers based on costs.

However, the costs applicable to demand response offers are, for the most part, the opportunity costs associated with foregone production, comfort, or business, and these will be different for each customer. More, even for an individual customer, those costs are likely to differ from day to day, and even hour to hour. It is not clear if it is even feasible to calculate these costs in an accurate and verifiable manner.

The best estimate would likely be based on customers' Value of Lost Load, and these are typically estimated to be in the tens of thousands of dollars per megawatt-hour, an order of magnitude

higher than the highest permitted economic offer cap or demand response strike price in any Commission-jurisdictional market.

Moreover, demand response resources generally prefer administratively established limits on how much they will be called upon, or at least prefer objectively verifiable system reliability conditions as the basis for being called. They want to receive just compensation for deferring their normal business activities in order to provide needed capacity to the system. In the main, they do not need nor have a desire to influence energy prices. Now, it's true that their presence in and of itself impacts energy pricing, but that is why the market should administratively set the appropriate minimum energy market price when demand response resources who only seek active participation in the capacity markets during shortage conditions are called upon.

The current practice of dispatching demand response resources based on system conditions means that there is no basis for market monitor review of the strike prices they submit. They cannot economically withhold because they must respond when called, and any physical withhold or lack of response is addressed through performance standards and severe penalties.

The regulatory compact guarantees electric consumers the right to use as much power as they want at just and reasonable rates, except when supplies are insufficient. Requiring consumers, who *choose* to forego that right at times when their choice not to consume will allow others' lights to stay on, to submit a mandatory economic offer- especially one subject to a cap - is unreasonable and a sure route to having them not offer to do so in the future. The idea that they might be required to curtail their usage at prices that are mitigated to someone else's idea of what their opportunity costs are is an even surer path.

So if the most effective means of ensuring capacity resources satisfy their obligations is through performance obligations, it begs the question of whether existing performance standards have done their job of ensuring resource adequacy, and whether any reform is necessary. EnerNOC believes it is clear that performance standards applicable to demand response capacity resources have more than adequately ensured their share of ensuring resource adequacy and reliability.

Is there a need for refinement, even improvement? Absolutely. Is there a need to convert to an entirely new system of performance requirements? Absolutely not. The challenge of evolving market performance standards with the changing physical needs of the system is difficult enough. To depart from a mechanism of performance obligations that has proven successful, to a whole new system, for example moving PJM to a must-offer obligation for demand response resources, would compromise the success achieved. To this end EnerNOC supports the evaluation of performance obligations, on purely a

forward basis, to maximize the operational potential of all resources. However, particularly for demand response, it is crucial to recognize that one of the fundamental mechanics of those resources is that it is based upon customer participation. When the desire for change is driven by only the potential for an issue in the future, the scope, amount and frequency of program changes need to be significantly moderated, particularly when the targeted resource has consistently demonstrated reliable satisfaction of its obligations.

Energy & Ancillary Services

Resources that are available more often have access to the energy and ancillary services markets to supplement their capacity revenues. The capacity markets have accomplished attracting the resources necessary to run the system, and now the focus needs to be on ensuring energy and ancillary service markets properly calibrate the revenues necessary to properly compensate those resources in ways that address needs other than pure adequacy of supply. There is opportunity for ancillary services, such as the capability for quick to build and fast response, and the ability to qualify for those revenues should be accretive to qualifying as a capacity resource.

Staff has notably recognized that “evolution in the mix of available resources driven by low natural gas prices” and “state and federal policies encouraging the entry of renewable resources and other technologies“ (Staff Comments at 2) is driving a need to integrate large amounts of renewable resources into the markets. Staff correctly points out that “the rapid growth in variable energy resource integration creates a greater need for flexible resources to balance load instantaneously and to smooth fluctuations in output during the operating day” (Staff Comments at 17). This is creating a growing concern that resource supply adequacy during shortages is not the only issue that the markets must address, but that there needs to be sufficient *flexible* capacity available to meet ramping needs. Some then question whether we should further complicate capacity markets by incorporating price differentiation based upon physical attributes and the ability to address very specific operational criteria.

EnerNOC believes we should address these “emerging needs and challenges” (Staff Comments at 18) with emerging and innovative products. Such innovation is best accomplished through the energy and ancillary service markets. The energy and ancillary service markets facilitate market valuation closer in time to when the resource is actually needed, can better address the unique operational characteristic needs of specific products, and as such can best maximize on the value different types of resources bring to the table.

It is EnerNOC’s view that while capacity markets are successful, it has been difficult enough to develop capacity markets that deliver just one category of resource adequacy. Complicating the core

principal of capacity markets, which is to provide more lead time and certainty for investment in new resources, with additional rules to account for operational characteristics, runs the risk of defeating the success capacity markets have accomplished. Trying to force a capacity market to ensure that peak needs are met, AND that off peak needs are met, AND that ramping rate needs are met is likely to result in a capacity “market” that is neither a market nor meets all, or possibly any, of those needs

Capacity markets should focus on ensuring long-term adequacy of supply during shortage conditions that can be assessed over the time period of months or years. To the extent that particular operational characteristics are needed, they should be incentivized through the energy and ancillary service markets that address adequacy of supply over the time period of seconds to weeks.

Many customers who currently serve as reliable and cost efficient demand response resources are well poised to maximize the availability of Energy Intelligence Software. EnerNOC and others have developed software solutions that empower customers to participate in the energy and ancillary service markets and facilitate their ability to provide grid services that will help to integrate renewable and other distributed resources, as well as identify cost effective operational energy efficiency opportunities that reduce customers’ overall energy requirements.

The energy and ancillary services markets are an excellent opportunity for the systems and markets to capitalize on the value created by unleashing customer potential with this software and technology. The energy and ancillary service markets facilitate market valuation closer in time to when the resource is actually needed, can better address the unique operational characteristic needs of specific products, and as such can best maximize on the value different types of resources bring to the table. The capacity markets bring these flexible and diversified resources to the system, and the energy and ancillary service markets capitalize on the value.

Those customers that are interested and have the capability will pursue energy and ancillary service market revenues, those who cannot or will not, will continue to be available to meet system adequacy in a capacity market mechanism.

Regulatory Certainty

No matter what a capacity market's mechanical components are, of critical importance to the ongoing success of capacity markets in attracting and retaining an adequate, reliable and cost effective portfolio of resources is regulatory certainty and respecting existing commitments. Capacity obligations represent call options on delivered energy at some point in the future, at least months, and sometimes years into the future. Market rules, while they cannot be set in stone, must respect the fact that future commitments by capacity providers depend on future commitments by those providers to their providers,

whether to build a new power plant or to secure new customers capable of providing demand response services.

CONCLUSION

EnerNOC is a strong believer in the success of capacity markets, given the need to ensure long term resource adequacy while pursuing a balance of short and long term interest, addressing a diversity of needs and attributes, and the evolving state of the system. The coexistence, yet separation of capacity, energy, and ancillary services markets will allow RTOs/ISOs to balance system and resource needs, so long as they respect the fundamental, and in some cases, fundamentally different, roles and capabilities of market participants, while also ensuring regulatory certainty.