BEFORE THE BOARD OF PUBLIC UTILITIES OF
THE STATE OF NEW JERSEY

In the Matter of	**)**	
Offshore Wind Solicitation of	**)**	**BPU Docket Number QX18040466**
1,100 Megawatts	**)**	

ENERNOC COMMENTS ON ISSUES RELATED TO A FUTURE SOLICITATION OF 1,100 MEGAWATS OF OFFSHORE WIND CAPACITY

I. Background and Introduction

On June 29, 2018, the Staff (BPU Staff) of the Board of Public Utilities (BPU) invited public comment on issues related to a future solicitation of 1,100 megawatts of offshore wind capacity. EnerNOC, Inc. (EnerNOC) appreciates the opportunity to respond to the topics and questions posed by the BPU Staff. The recommendations provided below are intended to serve as guidance on structuring the overall solicitation of offshore wind (OSW) capacity resulting from the directive under Governor Phil Murphy's Executive Order No. 8 (EO8) to implement the Offshore Wind Economic Development Act (OWEDA).

EnerNOC is a subsidiary of Enel, a multinational power company and a leading integrated player in the global power, gas, and renewables markets. EnerNOC partners with enterprises and utilities to reduce costs, manage risks, increase sustainability, and maximize the value of emerging energy technologies through customized energy management strategies. EnerNOC's technology-enabled advisory solutions help large energy users and utilities create value through strategic energy procurement, energy management, and utility bill management services.

EnerNOC procures electricity, natural gas, and other commodities for some of the largest end-users in the United States, including the federal government, several state governments[1], large commercial and industrial entities, and for utilities. Since 2004, EnerNOC has executed tens of thousands of pricing events for its partners, and has transacted more than $45 billion in electricity, natural gas, and environmental commodities on the EnerNOC Exchange for its partners, making it one of the top energy procurement specialists in the U.S. by revenue and volume.

EnerNOC has conducted a variety of auctions and pricing events as part of its technology-enabled services to its customers. In delivering these procurement services, EnerNOC has come to appreciate key principles of designing and achieving successful auction outcomes, and provides these tenets to the BPU staff for its consideration in the development of a solicitation of 1,100 Megawatts of offshore wind capacity.

The June 29, 2018 Notice of public hearing and invitation to submit written comments on Docket No. QX18040466 recognizes explicitly through its questions that the solicitation structure must be deliberate in its intent to maximize competition. EnerNOC's comments will be focused on the specific area of the BPU Staff's inquiry, into the structure of the solicitation (Topics 2, 3, 4), where EnerNOC is confident that its recommendations can meaningfully improve the desired outcome by infusing greater competition into the process of soliciting 1,100 Megawatts of offshore wind capacity.

II. EnerNOC's Comments to the BPU Staff's Topics 2, 3, & 4 As Presented in the June 29 2018 Notice, Docket No. QX18040466

EnerNOC's comments primarily address the topics raised in items 2, 3, and 4, from the June 29, 2018 notice:

> **2. How should the BPU structure the initial solicitation for 1,100 megawatts of offshore wind capacity as called for under EO8?**
>
> **3. Should the BPU request proposals scaled at 1,100 megawatts, or should the BPU request proposals in smaller blocks of capacity (i.e. 400 megawatts)?**
>
> **4. How may a solicitation be structured to ensure strong competition from multiple OSW developers?**

[1] In addition to partnering with state governments to procure energy commodities, EnerNOC partners with the Regional Greenhouse Gas Initiative (RGGI), a multi-state cooperative effort that implements a mandatory market-based program in the United States to reduce greenhouse gas emissions. RGGI has conducted its quarterly, regional CO2 allowance auctions using EnerNOC's technology-enabled services since RGGI's inception, totaling 40 auctions over a decade. On January 29, 2018, Governor Phil Murphy signed Executive Order 7 directing the BPU and the NJ Department of Environmental Protection to re-integrate New Jersey as a full member in the RGGI cooperative effort.

EnerNOC provides its customers and partners with a range of services, from a comprehensive suite of auction services to a narrowly defined set of services, namely, highly efficient technology-enabled bid collection and analysis, and associated reporting, with the clear objective of delivering successful auction outcomes.

The BPU has options for running the solicitation. EnerNOC contends that utilizing the most competitive and transparent method as possible will foster a high-level of confidence in both the process and outcomes of this important, highly-visible solicitation. EnerNOC contends that their process and technology can serve as a valuable aide to securing those ends.

Depending on the objectives of the program or procurement, EnerNOC will tailor its process and auction methods to achieve the outcome of a successful, efficient solicitation. In delivering these services, EnerNOC primarily uses the following methods: sealed bid auctions, descending clock auctions, and live, online reverse auctions. To determine which auction method is most appropriate, EnerNOC – in collaboration with the customer – evaluates program/procurement goals and market conditions to identify a best-fit auction method.

With extensive experience running auctions, using numerous auction methods, EnerNOC has observed that technology-enabled auctions offer significant advantages in delivering the most competitive prices with the most transparency.

Recommendation #1. Have a flexible design approach – design for change.

EnerNOC has designed and run thousands of auctions for unique commodity products, structuring these events using sealed bid, descending clock, and live, online reverse auction methods. Auction design does not exist in a vacuum. Market dynamics, timing, developer interest and development activity, and socio-economic goals – among several other factors –play a role in auction design. While one auction method may better suit a specific product or desired outcome, correspondingly it may not be the best choice as the OWS program and NJ OWS activity evolve. As this evolution happens, the best solicitation design, and auction method, should prevail. The NJ BPU need not adopt a one-size-fits-all method and become beholden to it for the life of the OREC program. A dynamic approach to auction design over the long-term makes sense given the dynamic markets, and the expected rapid innovation that will happen both within New Jersey and within the offshore wind industry.

Recommendation #2. Design for maximum price discovery and transparency.

The solicitation should be structured to maximize price discovery and transparency.

By having a record of every auction bid and every communication in the auction process, the process – if appropriately automated using a modern energy-trading technology platform – can produce a highly auditable record for stakeholders to review. This transparency brings accountability and clarity to all parties and, in EnerNOC's opinion, solidifies the confidence of consumer advocates, regulators, the investment community, and ratepayers.

Price discovery happens when participants in a procurement can see the best prevailing price, and bidding participants make a decision to adjust their bid. Price discovery also benefits the regulator, by addressing the fundamental problem of asymmetric information levels between the regulator and the bidding parties. Price discovery drives competition and tends to reduce prices, thereby benefiting ratepayers.

Price discovery is considerably muted in a sealed bid auction, as compared to the descending clock and live, online reverse auction methods. This is not say that a sealed bid auction is not appropriate, rather, it is an approach that should be deliberately used in specific instances.

In a typical sealed bid approach, each qualified bidder downloads a Microsoft Excel spreadsheet containing a bid form, opens the spreadsheet/bid form, enters critical identifying information and offer prices, saves the spreadsheet, and uploads or sends their spreadsheet via email to reviewing party(ies) by a pre-determined deadline. Throughout the sealed bid process, bidders are without any knowledge, direct or indirect, of what other parties are offering, or even if other parties are offering at all. After bidders have sent their individual spreadsheets via email, the procurement administrator reviews the various bids in the various spreadsheets, and, based on predetermined criteria, selects the best offer or offers.

The two other most common approaches are multi-round descending clock auctions ("DCA") and live, online reverse auctions. Compared to the sealed bid method, these methods typically use technology platforms that enable an interactive experience for bidders, price discovery, and an efficient and transparent bidding process.

Descending Clock Auctions (DCAs) are auctions that are designed to secure a specific volume of a commodity at a uniform price, and are the basis for the historic auction method in use in procuring Basic Service supply for the NJ EDCs. These auctions are conducted over multiple rounds in which all bidders are given the same set price, and each responds with a corresponding volume that they would provide at that price. Bidders cannot see the volume that other bidders offer or how many other bidders are participating in the auction.

If the sum of the offered volumes from all bidders exceeds the volume the auction manager is seeking to secure, the auction manager will initiate another round at a lower set price. Once again,

all bidders offer the volume they would deliver at that lower price. The rounds continue until the sum of the volumes that the bidders offer equals what the auction manager needs. At that point, the auction manager declares the auction over, and awards each bidder the volume they offered at the same fixed, uniform, price.

The advantage of a DCA is that there are no outliers, which avoids "the winner's curse." Another advantage is that all bidders are able to compete with the volume they have to offer.

With this auction method, outlier bidding, and dueling bid behavior, is eliminated, as the final clearing price is uniformly paid to the bidders, versus other pay-as-bid settlement constructs. DCAs are not well-suited for every type of product, such as products with highly dynamic market activity and pricing.

Another attribute of this method is the auction duration, which can be extensive and contribute to bidder fatigue.

Reverse auctions, as a broad category, are simply auctions where bid prices go down instead of up. A live, online reverse auction is a type of reverse auction that is a single round event with a finite start and end time that generally lasts 10-15 minutes. A best-practice design feature of such auctions, including the live, online reverse auctions run by EnerNOC, is that throughout most of the auction, bidders – once they have placed an initial bid within the auction – can see the prevailing best bid. This allows for real-time feedback/price discovery and, nearing the end of the live, online reverse auction, there is generally a "last bid blind" feature. In roughly the last 10 seconds of such an auction, if a bidder wishes to bid, they must place a "best and final" bid without the benefit of being able to respond to the prevailing best bid amount or other critical auction details. In EnerNOC's experience, the lack of discovery along with inability to respond to price movements in the final moments of an auction leads to aggressive competition among bidders and pushes prices lower.

The biggest differences between traditional sealed bid practices and the auction methods described here are efficiency enabled by technology, and increased competition amongst bidders. The typical sealed bid process requires that bidders independently communicate their bids via email or similar communication tool, and a regulatory employee, utility staff, or consultant on the procurement team compiles, analyzes, and reports on the bidding outcomes. In comparison, descending clock, and live, online reverse auctions have interactive technology platforms that can automate many of these steps and engender greater competition amongst bidders.

A benefit and purposeful design feature of technology-enabled auctions is price discovery, which sealed bid specifically does not provide. The price discovery in a DCA is limited, as the

auction administrator sets and shares the price (which all bidders know) and bidders indicate their desired volume or share of what is procured. In a live, online reverse auction, there is real-time, dynamic, price discovery throughout the auction, as bidders can see what the prevailing best bid is, yet cannot see volume, and do not know which or how many competing bidders are bidding. In a live, online reverse auction, market action and competition drive the price down, not an auction administrator.

Finally, since it is only a single round, a live, online reverse auction tends to be a short duration event, with the shortest period between when bidders submit bids, the end of the auction, and when a bidder has an idea of whether they have the lowest bid.

Using a structure and tools that enables transparency and ease of record-keeping, and that enables price discovery during bidding to provide buyer and seller with instantaneous market feedback, even with opaque markets as would be with a NJ OREC, will contribute to the strongest competition and ensure optimal benefit to ratepayers, who ultimately shoulder the costs.

Recommendation #3. Use a multi-stage auction design.

Given the complexity of criteria outlined in the OWEDA, which lists well over 100 different elements that a developer must provide by law, and likely other criteria that will emerge through the solicitation planning process, EnerNOC, from experience, recommends a multi-stage auction design.

A common two-phase auction design breaks apart the solicitation into an initial qualification phase and a second evaluation (competitive) phase. By separating these into clear phases, the solicitation team or procurement manager can advance the procurement while the developers/bidders are still assembling key financial elements that are needed for refining their financial models. This approach has particular appeal when the auction has stringent requirements that require significant work both to assemble, and to review, as is the case with the OWEDA criteria.

In this case, EnerNOC recommends to optimize even further, and further separate key elements of these two phases be broken into manageable sub-phases. The qualification phase can be broken into an initial pre-qualification stage in which the developers are screened for their corporate fiscal health and technical capabilities, and a second qualification stage during which detailed assessment is done (based on details provided by developers in technical, financial, social benefit and environmental submittals). In NJ's case, having the initial pre-qualification stage be a rolling submittal with a future hard deadline, allows the BPU Staff and consultants to evaluate over

time, allows to the developers to submit incrementally, and allows the federal government to continue its leasing activities, which may bring in more competitors.

The next major phase should also being optimize, to include an indicative bid round, and then the final bidding phase. The indicative bid round can be used to further qualify the development projects and the developer, and provide valuable information for structuring the auction for the OREC award allocations. For example, the indicative bid round may reveal that smaller increments (e.g., 50 MW blocks, versus 400 MW blocks) may be more beneficial for developers, or provide other details that inform the structure or key attributes of a live, online reverse auction to follow.

Further, the NJ BPU should consider running a live, online reverse so that developers can optimize their bids and bid volumes, and then the NJ BPU can evaluate the least volume-weighted cost alternatives.

Recommendation #4. Standardize variables, and have developers compete in an auction on one or two variables.

Auctions work best when price competition is narrowed to one or two variables, in this case, development team should bid on an all-in OREC price and volume. This approach allows the bidders to develop specific bidding strategies based on their competitiveness within and among projects. To ensure that the price and volume bidding is closer to an "apples-to-apples" comparison, other variables should be standardized, such as discount factor and term length.

Running a live, online reverse auction allows for multiple pricing events in a short 1-2 duration, so the NJ BPU staff can adjust variables, like term length, to see how those key variables impact the price and volume bidding.

Conclusion

EnerNOC appreciates the BPU Staff's inquiry into these topics, to develop a solicitation that achieves the social and economic goals set forth in the OWEDA. EnerNOC urges BPU Staff and the BPU to adopt a high standard for price discovery and transparency, by using technology-enabled energy commodity bidding to optimize competitiveness in the OREC bidding process. EnerNOC has the technology and the team ready to assist in securing these innovative energy products and looks forward to engaging with the agency and other stakeholders throughout this process. Thank you.

— *Submitted electronically on July 26, 2018 to Rule.Comments@bpu.nj.gov*