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VIA ELECTRONIC FILING

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Office of the Secretary
New Jersey Board of Public Utilities
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Email: EMP.Comments@bpu.nj.gov

RE: Comments on New Jersey's Energy Master Plan - 2019

Dear Secretary Camacho-Welch,

Atlantic Grid Operations A LLC ("Atlantic") respectfully offers the following comments on the Energy Master Plan - 2019.

Atlantic is an independent transmission development company that develops well-planned, lower cost, open-access offshore wind transmission facilities that link offshore wind generating facilities to regional power grids. Atlantic's investors are Google, Bregal Energy, Marubeni and Elia. Each individually is a multi-billion-dollar company. Google is the world's largest buyer of renewable energy. Bregal Energy is a private equity fund focused on the transition to clean energy. Marubeni owns UK offshore wind farms and offshore wind construction vessels, and Elia owns and operates the high-voltage power grid in Belgium and part of Germany and is building offshore transmission to serve Belgian offshore wind farms. Atlantic's investor group has a strong commitment to building an advanced clean energy economy.

Atlantic is developing the New Jersey Energy Link ("NJEL"), an offshore wind transmission network that would combine a coordinated offshore wind transmission system with the land-based grid upgrades that will be needed to accommodate the 3,500 MW of offshore wind generation targeted by State policy. NJEL is a planned transmission system of the kind that has proven successful in allowing large scale, efficient development of offshore wind in Europe and land-based wind in California and Texas.

Our comments here are brief. They address transmission needed to integrate the new offshore wind resources but also describe more broadly the role that transmission could play in moving New Jersey to a more advanced 21st century clean energy economy. Thank you for this opportunity to contribute to shaping New Jersey's future.

1. Network Transmission versus Radial Transmission

In general, networks provide great value to both producers and consumers. The more interconnected networks are, the greater value they provide. New Jersey's existing land-based transmission network could be made stronger and more efficient by extending the land-based network offshore to connect

the large, new offshore wind resource. Networks connect various generators and loads over time. Radial facilities connect only one user. The multiple users of a network make it more valuable to each user. Customers benefit from greater reliability when connected to a network that joins the output of multiple power plants. They receive continuous energy even if one plant is off line for maintenance or due to an unexpected failure. Consumers also benefit from the efficiency of sharing the capacity of transmission lines built to capture scale economies. Think of how inefficient and unsightly it would be if each home and business had to build its own direct connection to the nearest power plant.

The benefits of networks also apply to offshore wind. In a simple example, two wind farms could share the space on a high-capacity circuit that is less expensive than multiple lower capacity circuits. Or a submarine circuit could be designed to connect two wind farms to two land points of interconnection. The redundancy provided by such a loop configuration provides both wind farms with continuous export capability, i.e., a more reliable system if an anchor strike damages one cable. In yet another example, in planning the first phase of a network facility future needs can be anticipated and provided for at a lower cost of construction than multiple uncoordinated construction projects. Consider opening the road to lay cable in a conduit; a "spare" conduit also could be simultaneously laid to reduce the cost of pulling in a second cable in the future. Lastly, consider the savings from designing an offshore substation for a 60-year life rather than the standard 25-year life of a wind farm. After the first wind farm is decommissioned a new wind farm can be built and it can interconnect with the existing substation at very low cost rather than building new transmission facilities. Network planning and ownership of offshore transmission facilities independent of the state's new wind farms opens a variety of options that are not available with the radial approach.

The transmission infrastructure needed to meet New Jersey's 3,500 MW offshore wind goal will cost ratepayers more than $2 billion. Ratepayers will bear this cost whether transmission is radial and bundled with the offshore wind projects approved by the BPU or if it is unbundled and owned and operated as a network separate from the wind farms. The policy question before the BPU is whether to use that money to plan and build a more robust and useful network for the 21st century. The alternative is to use ratepayer money to purchase unplanned, uncoordinated and closed-access radial transmission for each individual offshore wind project.

Offshore network facilities would be open access – meaning that all users would have non-discriminatory access on a level playing field. This is how the land-based grid is operated for good reason; it provides the foundation for robust competition in the energy markets. Wind-developers are proposing radial offshore transmission that is closed-access and controlled by individual wind project owners. Closed-access, radial transmission simply cannot deliver for ratepayers a stronger, more competitive transmission network and so it fails to deliver value for money.

2. Building the 21st Century Grid

The grid must meet an assortment of "drivers" which is planning lingo meaning that we need the grid to do many jobs. Integrating new renewable resources like offshore wind is just one of the jobs. Severe weather and cyber threats show us that the grid should be more resilient. High energy and capacity prices, particularly in north Jersey, point to the need for market efficiency improvements in how the grid functions. New technologies such as storage, distributed generation, controllable loads, micro-grids and HVDC transmission are increasingly available to make the grid smarter, more flexible, and more resilient. Finally, let's not forget that many transmission lines in the state are old and at the end of their useful

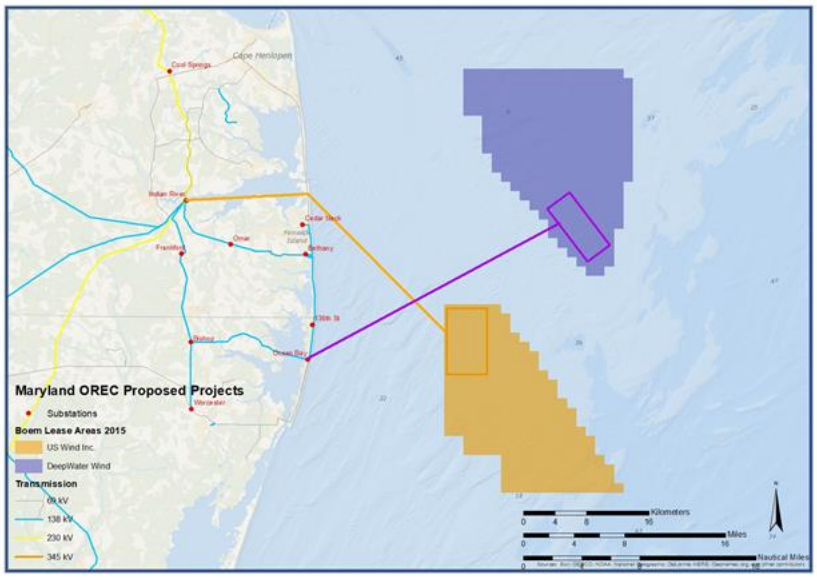
service lives. Most of these facilities will need to be replaced in some fashion with lines of the same or greater capacity and there are choices to be made in designing these replacement facilities that could improve or hinder our ability to satisfy the other drivers.

Planning and innovation are essential to satisfying the multiple drivers with the limited ratepayer funds available to create a 21st century power grid for New Jersey. New Jersey has world-class energy research capabilities. At the Rutgers Energy Institute researchers integrate Rutgers' expertise in science, engineering, economics, and policy to conduct cutting-edge alternative energy research. Likewise, Princeton's Andlinger Center for Energy and the Environment supports a vibrant program of research and teaching in the areas of sustainable energy-technology development, energy efficiency, and environmental protection and remediation. Both institutions have considered the interaction of the grid, renewables and storage. The BPU should engage with them to help identify cost-effective transmission and non-transmission opportunities to integrate offshore wind and other variable resources as their contributions to the energy mix grow. For example, properly located and controlled, storage and dispatchable loads can absorb the variability of offshore wind. At the same time, these new technologies can defer the need to make grid-level and distribution-level investments and increase the reliability of service to critical loads such as hospitals, public safety facilities and water treatment infrastructure.

3. Planning versus an Uncoordinated Approach

While it takes time, planning is much less expensive than an uncoordinated approach to building long-lived infrastructure that may not suit the state's needs over the long term. Wind developers have argued that they "integrate and optimize" the transmission facilities for their offshore wind farms and that their solutions are efficient. But their perspective is narrowly focused on delivering energy from just one wind farm. That narrow focus prevents consideration of other drivers or of the benefits of coordinating with other wind developers.

Electric generation is a competitive market and the pressure to best the competition blocks generation developers from collaborating on transmission solutions. In fact, controlling transmission access to a



An uncoordinated approach risks wasteful duplication as this example from Maryland's offshore wind solicitation shows.

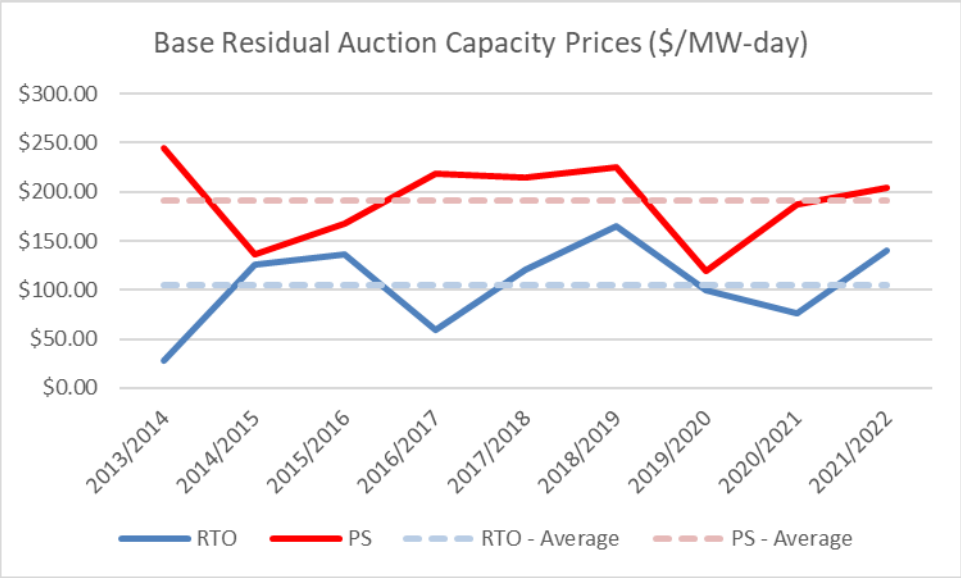
valuable point of interconnection is a way for a generation developer to create an advantage over the competition.

Independent transmission companies and the state's incumbent utilities are non-discriminatory transmission providers. These transmission operators are legally separated from the economic performance of generators and that frees them to plan and coordinate effectively to provide an open-access network that levels the playing field for robust competition in generation. FERC requires the land-based transmission network to be operated on an open access basis, as are highways, railroads and other common carriers. New Jersey would be following other examples that have worked. California and Texas have had great success in the land-based wind energy markets with well-planned, open access transmission and in Europe it is the successful grid access model that has fostered lower offshore wind costs and even zero-subsidy bids.

New Jersey can use the PJM State Agreement Approach (SAA) to direct the planning of an open-access system. The SAA allows a state (or voluntary group of states) to request that PJM plan and analyze transmission project proposals that may be needed for public policy reasons beyond the usual PJM planning role of maintaining grid reliability and promoting market efficiency. The state(s) can then act on the PJM analysis to nominate a project for inclusion in PJM's Regional Transmission Expansion Plan (RTEP) which signals its approval for construction. The nominating state(s) must agree to have their ratepayers absorb the full cost of such public policy-driven transmission projects, although if reliability drivers are addressed by an SAA project reliability-related costs may be more broadly allocated beyond New Jersey.

Using the SAA planning approach, the BPU can address long-standing problems, such as the capacity price separation problem, and prepare the state for the future. The table and graph below show a persistent difference in capacity prices between New Jersey and the rest of the PJM regional transmission organization (RTO). Northern New Jersey prices are on average $100/MW-day higher than in most of the rest of the PJM footprint with this difference due in part to transmission constraints. This unsolved problem imposes a penalty on New Jersey ratepayers that amounts to hundreds of millions of dollars in some years.

	Annual Resource Clearing Price ($/MW-day)									
LDA	**2013/2014**	**2014/2015**	**2015/2016**	**2016/2017**	**2017/2018**	**2018/2019**	**2019/2020**	**2020/2021**	**2021/2022**	**Average**
RTO	$27.73	$125.99	$136.00	$59.37	$120.00	$164.77	$100.00	$76.53	$140.00	**$105.60**
EMAAC	$245.00	$136.50	$167.46	$119.13	$120.00	$225.42	$119.77	$187.87	$165.73	**$165.21**
PS	$245.00	$136.50	$167.46	$219.00	$215.00	$225.42	$119.77	$187.87	$204.29	**$191.15**
PS North	$245.00	$225.00	$167.46	$219.00	$215.00	$225.42	$119.77	$187.87	$204.29	**$200.98**
RTO - Average	$105.60	$105.60	$105.60	$105.60	$105.60	$105.60	$105.60	$105.60	$105.60	**$105.60**
PS - Average	$191.15	$191.15	$191.15	$191.15	$191.15	$191.15	$191.15	$191.15	$191.15	**$191.15**
Total Resources Cleared (MW)	8,019	7,583	6,730	6,299	6,111	5,301	5,455	5,097	5,368	**6,218**
Capacity Market Penalty to Rate Payers*	**$635,943,098**	**$29,089,525**	**$77,277,620**	**$366,987,614**	**$211,888,523**	**$117,345,135**	**$39,363,553**	**$207,145,621**	**$125,955,296**	**$201,221,776**
**Capacity Market Penalty to Rate Payers = (PS Given Year Price - RTO Given Year Price) x Given Year Total Resources Cleared x 365*										



During the BPU's EMP deliberations we have heard calls to modernize and strengthen New Jersey's grid. There is also much support for aggressively transitioning to a cleaner, more sustainable energy mix. These are worthy goals. We just have limited resources to get there. To achieve them will require the foundation of a well-planned grid that considers the multiple jobs that the grid needs to do so that the facilities we choose to build give ratepayers the most value for money. The PJM State Agreement Approach is a tool to guide us to a 21st century grid. At the BPU's request PJM will analyze multiple scenarios, evaluate alternative grid configurations, and advise on different courses of action. The SAA reserves for the BPU the power to select and direct construction of the best grid projects for the state.

Planning for and building a stronger, more efficient New Jersey transmission network will make it easier to achieve all the other goals of the Energy Master Plan. An uncoordinated, hands-off approach to transmission, on the other hand, simply will not work.

Sincerely,

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