ANBARIC

the future of electricity

October 12, 2018

EMP.Comments@bpu.nj.gov
Ms. Grace Power, Chief of Staff
Chair, Energy Master Plan Committee
New Jersey Board of Public Utilities
44 South Clinton Avenue
Trenton, New Jersey 08625
VIA EMAIL

Dear Chair Power and Members of the Energy Master Plan Committee:

On behalf of Anbaric Development Partners, LLC I submit these comments on two themes of the Energy Master Plan: clean and reliable power and sustainable and resilient infrastructure. These themes enable the Murphy Administration to reach its major energy, environmental, and economic development objectives, to wit: creating a path to reach 100% clean energy by 2050 and rapidly expanding the State's clean energy economy.

As a threshold matter, Anbaric supports this Administration's commitment to develop 3500 MW of offshore wind via procurements in 2018, 2020 and 2022. It is ambitious, but has the potential to produce a once in a generation opportunity that will: accelerate the deployment of offshore wind, increase the State's use of renewable energy, build a domestic offshore wind industry to world-class scale, minimize impacts to the environment, fisheries, and threatened marine species, and combat climate change -- all while anchoring public support for these critical goals with the judicious use of ratepayer and taxpayer funds. Anbaric believes that meeting these objectives is well within the State's grasp and could be realized well before 2050.

Below I describe Anbaric, our track record in New Jersey and our planned investments. I then explain that the single most important step to achieve 100% clean energy by 2050 will be to launch a competitive offshore wind industry. The necessary step to create this industry and a market is to separate generation from transmission.

I Anbaric's Record in New Jersey and Our Planned Investments

Anbaric is one of the United States' leading developers of open access transmission lines. Our founder and chief executive officer, Edward N. Krapels, helped spearhead the development of two 660 MW high voltage direct current (HVDC) transmission lines linking New Jersey and New York. The first, the Neptune Regional Transmission System, was operational in 2007 and the second, the Hudson Transmission Project, in 2013. Each was completed on time and on budget; each was buried underground or below the seabed for its entire length. The lines' combined investment in New Jersey totals approximately $600 million.

In March 2017, Anbaric and one of Canada's largest public pension plans, the Ontario Teachers' Pension Plan, announced a joint venture to expand Anbaric's transmission and microgrid businesses across the U.S. and Canada. As a result of the joint venture, Anbaric began to conceive, design, and develop open access transmission projects for the offshore wind generation projects proposed off New Jersey, New

York, and Massachusetts. We modeled our approach in part based on the successful European experience with open access transmission for offshore wind generation facilities.

Anbaric has designed a prototype open access offshore transmission system, our New Jersey OceanGrid, capable of delivering virtually all the 3500 MWs that the Murphy Administration has announced that it will procure by 2022. The NJ OceanGrid is being designed to optimize onshore interconnections, allowing for future growth of the industry beyond the Governor's current target of 3500 MW.

At this stage of development, Anbaric's New Jersey OceanGrid is designed to utilize AC or DC technology and separate parts of the OceanGrid could use either. For a particular offshore wind generation project, Anbaric would select AC or DC technology depending on market conditions and customer needs. Key factors influencing the decision include the distance between a wind generation project's collector station(s) and the interconnection substation, the associated line losses and the cost of the technology. To date we have:

1) Identified three points of interconnection (POI) to the terrestrial grid, two at the 230 kV level and one on the 500 kV level for the first overall 3500 MW objective;

2) Filed interconnection requests with PJM for those interconnection points. Interconnection studies are underway;

3) Begun state and federal permitting to speed development;

    a. Anbaric has nearly completed permitting the terrestrial route for one of the three POIs, and has identified preferred routes to the other two,

    b. Completed a marine geotechnical and geophysical surveys in state waters leading to one of the three POIs, and completed marine geophysical surveys in federal waters off the New Jersey coast for all three POIs,

    c. Filed for federal Bureau of Ocean Energy Management (BOEM) Right of Way and Right of Use Easement Grant (ROW/RUE Grant) to grant Anbaric the right to place transmission cables in the floor of the outer continental shelf (OCS). This was filed on April 30, 2018, and on June 22, 2018, BOEM approved Anbaric's legal, technical and financial qualifications to hold rights-of-way on the OCS, and

4) Engaged a range of community stakeholders, state and local government officials, industry, and environmental NGOs to share information about our proposed approach and to listen to concerns and guidance.

II Developing a Competitive Offshore Wind Industry is Essential to Reach 100% by 2050

Anbaric respectfully submits that offshore wind will be a critical component of reaching New Jersey's goal of 100% renewables by 2050. But to enable this new industry to flourish the market framework must be

designed to foster competition across all sectors of the business. State policy makers should be guided by three principles:

1) Build on our natural competitive advantages

New Jersey is blessed with an ideal location for the rapid development of an offshore wind industry. The outer continental shelf off NJ's coast is relatively wide, flat, and shallow with a floor generally composed of sand or silt, and the wind off the shore is high quality. We have a long coastline which will allow for thousands of megawatts to be sited relatively close to our electric load. Further, NJ has ports that can be transformed to serve the offshore wind industry, which will create economic opportunities and revitalize both infrastructure and communities.

New Jersey's location, next to New York City which has a substantial appetite for renewable energy, and limited means of getting it from upstate, offers New Jersey an attractive, high-price market where its surplus offshore wind electricity can be exported – to the economic benefit of the Garden State. Of course, this export market should only be considered when the economics are favorable to the ratepayers, i.e. private developers should not be permitted to use New Jersey subsidies to earn additional profits by exporting renewables. Assuming that these conditions apply, the twin accidents of geography and economics make New Jersey a highly attractive location for offshore wind developers.

2) Focus on achieving scale quickly

Because of its geographic advantages and proximity to attractive markets, New Jersey can potentially achieve scale faster than any other state. Plainly stated, due to Governor Murphy's aggressive goal of 3500 MW by 2030, offshore wind offers immediate and large growth opportunities. Further, NJ can serve as the manufacturing base and home-port location to serve neighboring states' offshore wind markets.

3) Focus on keeping costs affordable to ratepayers.

Provided that the market allows for robust competition, the State can benefit from the plunging price for offshore wind now seen in recent auctions for offshore wind in the Netherlands and Germany.

A. *To develop a robust offshore wind industry, it is necessary to create competition across all segments of the industry, thus separation of the generation of offshore wind from the transmission of that electricity to the grid is necessary.*

To develop a robust offshore wind industry and benefit from the falling prices that competition provides (*see* the steadily dropping prices produced by competition in the solar industry in New Jersey) requires robust competition, rather than one or two companies, transparency in pricing, to allow ratepayers to understand costs and to encourage new entrants to market, and rules to encourage competition and prevent the exercise of market power over the near and long term. Private sector investors commit capital when market rules are clear and fair. Only a competitive market can capture the economic benefits of capitalism: competition, innovation, lower prices for ratepayers.

To create this market here in New Jersey, one step is necessary: separate of the generation of offshore wind from the transmission of that electricity to the grid.

Separate generation from transmission

Transmission and generation must be separated in order to have a competitive market. Open access transmission infrastructure allows for the economically efficient and environmentally sound development of the offshore wind industry, from the first project to a true competitive market where competition is robust, innovation commonplace, and prices at parity with conventional, fossil-fueled generation. Such parity prevails now in various countries in Europe, and New Jersey decision-makers can secure them here by designing the right policy at the outset of this process.

This approach allows wind generation developers and transmission developers to each do what they do best – cost-effectively develop offshore wind generation projects and transmission infrastructure.

This separation of generation from transmission policy works. This policy has anchored the electricity industry in the United States for decades. This policy has produced great success in the development of the on-shore wind industry in the United States. This policy has produced great success in the development of the off-shore wind industry in Europe. There is no reason to abandon this policy now in New Jersey.

Federal Policy Separates Generation from Transmission

The bulk power grid in the United States has long separated generation and transmission. Since the enactment of the Federal Power Act during the Depression, it has been recognized that the accumulation of market power in private hands poses a threat to the public interest and to the efficient functioning of the economy.

The bulk power grid now operates across the United States via a separation of generation and transmission, especially bulk power grids administered by Regional Transmission Organizations ("RTOs") and Independent System Operators ("ISOs"), where transmission facilities are subject to open access rules and transmission planning and operations are always at least functionally separate, and often structurally separate, from generation. The Federal Energy Regulatory Commission ("FERC") has explained that

> [i]t is in the economic self-interest of transmission monopolists, particularly those with high-cost generation assets, to deny transmission or to offer transmission on a basis that is inferior to that which they provide themselves. The inherent characteristics of monopolists make it inevitable that they will act in their own self-interest to the detriment of others by refusing transmission and/or providing inferior transmission to competitors in the bulk power markets to favor their own generation."[1]

[1] *Promoting Wholesale Competition Through Open Access Non-discriminatory Transmission Services by Public Utilities*, Order No. 888, FERC Stats. & Regs. ¶ 31,036 at P 31,682 (1996).

FERC concluded "that functional unbundling of services [was] necessary to implement non-discriminatory open access transmission"[2] and that "[n]on-discriminatory open access to transmission services is critical to the full development of competitive wholesale generation markets and the lower consumer prices achievable through such competition."[3] The FERC also noted that such Generator Interconnection Facilities [generator lead lines] are not subject to the full panoply of FERC's open access rules and policies, especially as relates to the obligation to provide third-parties, such as competing unaffiliated generators, access to such facilities.[4]

A. The separation of Generation and Transmission produced rapid growth in the on-shore wind industry

In the US planned transmission separated from generation has created on-shore wind development at the thousands of megawatts scale quickly. The first and most significant is the Texas CREZ process. Under a directive from the legislature, the PUCT and ERCOT worked together to identify regions of potential wind development, planned the transmission system to meet the needs of the industry and held a competitive procurement for the rights to build the system. The result is clear with over 23 GW of installed capacity and another 5+ GW under construction. California provides a similar example with its Tehachapi Renewable Transmission system, developed and operated by Southern California Edison, Tehachapi removed the burden of transmission development from wind developers, to enable 4,500 MW of renewables.

B. The separation of generation and transmission produced rapid growth in the off-shore wind industry in Europe

As New Jersey seeks to generate 3500 MW of offshore wind power in the three coming procurements, it is imperative that State leaders use and improve upon the lessons learned from Europe to develop crucial transmission infrastructure. European countries, including Germany and the Netherlands, have the most experience developing offshore wind in the world and continue to embrace open-access transmission systems that have enabled the offshore wind industry to thrive and see remarkable reductions in costs. The most recent auctions in both these countries have yielded zero subsidy bids, that is bids for offshore wind parks that are on parity with convention, onshore fossil fueled generation.

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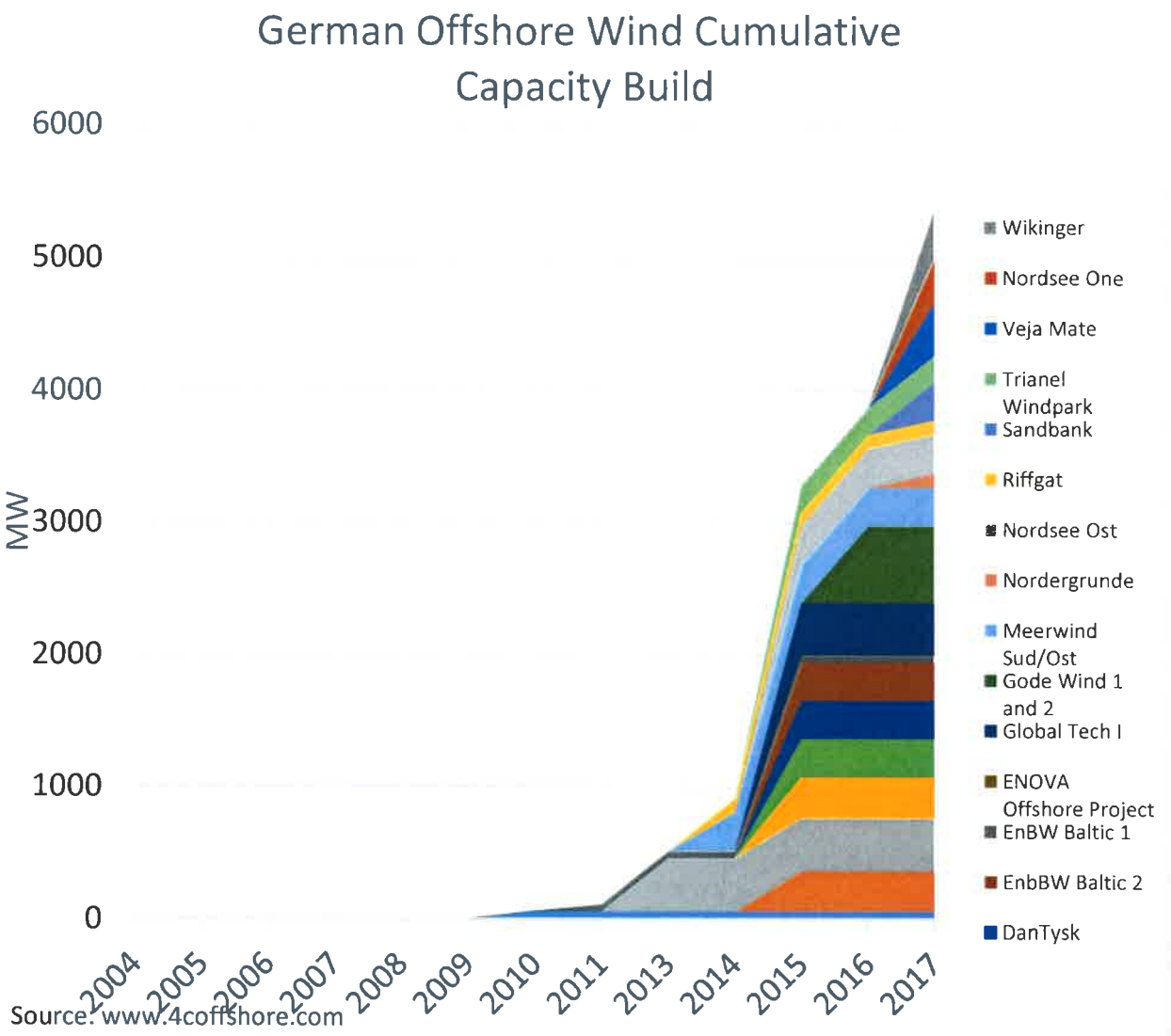
2 *Id.* at P 31,093.

3 *Id.* at P 31,086; *see also Open Access Same-Time Information System (formerly Real-Time Information Networks) and Standards of Conduct*, Order No. 889, 75 FERC ¶ 61,078 at P 61,135 (1996) ("[w]e will require the functional unbundling of transmission operations and wholesale marketing functions because we are persuaded that this will prevent abuses based on preferential access to information and other discriminatory behavior, without compromising reliability"); *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, FERC Stats. & Regs. ¶ 31,241 at P 61,252 (2007) ("[b]ecause many traditional vertically integrated utilities…did not provide open access to third parties and favored their own generation if and when they provided transmission access to third parties, access to cheaper, more efficient generation sources remained limited"); *Wholesale Competition in Regions with Organized Electric Markets*, Order No. 719, 125 FERC ¶ 61,071 at P 1 (2008) ("[e]ffective wholesale competition protects consumers by providing more supply options, encouraging new entry and innovation, spurring deployment of new technologies,…improving operating performance, exerting downward pressure on costs, and shifting risk away from consumers").

4 *See, e.g.*, *Open Access and Priority Rights on Interconnection Customer's Interconnection Facilities*, Order No. 807, 150 FERC ¶ 61,211 (2015).

The policy separating generation from transmission has also yielded rapid growth of the industry, as the chart below demonstrates.



Source: www.4coffshore.com

C. The objections to the separation of generation and transmission are not convincing

There are objections to open access transmission. The most common is that the separation of generation and transmission will risk delay and therefore increase costs. More specifically, delay occurs when the turbines are ready and the transmission is not (or vice-versa). This problem in execution can only be addressed with one company controlling development of both generation and transmission. Often, those making this claim mention the early experience of Germany, where transmission did lag.

This objection fails for several reasons.

First, history has shown that specialization works, with transmission experts building the transmission and generation experts, the generation. This is what Germany did, after learning from initial mis-steps, and built up from 90 MW offshore to more than 4000 MWs offshore in less than a decade. Germany achieved this result with open-access transmission built by transmission entities and wind projects built by generation developers. The Netherlands have adopted the same approach and are on-track to build 3500 MW by 2023.

Open access transmission is producing a large market with many companies competing for government contracts and that competition is driving down prices. In recent 2017 and 2018 auctions in the Netherlands and Germany, the winning submissions were for offshore wind with no subsidies, that is, at parity with the on-shore conventional generation. This result does not occur without large, competitive markets, which are built when generation is separated from transmission.

The same result has occurred in the US, where open access transmission has been built for onshore wind. In California, the Tehachapi wind project, and in Texas, with the CREZ program, transmission has enabled the rapid build-out of 4500 MWs of wind (in California) and over 20,000 MW of wind in Texas.

This history shows that building a large, complex, and costly project is difficult and requires managerial expertise, precise milestones, constant communication, and coordination from the beginning – whether one company or two is building that project. Having one company build everything is neither necessary nor wise.

Thank you for the opportunity to offer our comments to the committee developing the Energy Master Plan.

Sincerely yours,

Clarke Bruno
Partner and President, Transmission