COMMITTEE ON
ENERGY & COMMERCE
CHAIRMAN FRANK PALLONE, JR.

MEMORANDUM

October 18, 2021

To: Subcommittee on Energy Members and Staff

Fr: Committee on Energy and Commerce Staff

Re: Hearing on "Offshore Wind, Onshore Benefits: Growing the Domestic Wind Energy Industry"

On **Thursday, October 21, 2021 at 10:30 a.m. in the John D. Dingell Room, 2123 of the Rayburn House Office Building, and via Cisco Webex online video conferencing**, the Subcommittee on Energy will hold a hearing entitled, "Offshore Wind, Onshore Benefits: Growing the Domestic Wind Energy Industry."

I. BACKGROUND

The domestic offshore wind industry is growing rapidly. In March 2021, the Biden Administration announced a goal of deploying 30 gigawatts (GW) of offshore wind by 2030, which is enough generation to power more than ten million homes and avoid 78 million metric tons of carbon dioxide emissions.[1] States continue to set their own offshore wind procurement goals and are currently targeting more than 39 GW of offshore wind capacity by 2040.[2]

As of May 2021, the National Renewable Energy Laboratory (NREL) estimated that there are over 35 GW of offshore wind capacity located off the East Coast and Great Lakes in various stages of development in the Bureau of Ocean Energy Management's leasing process.[3] That figure includes operational projects such as the Block Island Wind Farm (Rhode Island) and Coastal Virginia Offshore Wind pilot project (Virginia), and recently approved projects such as Vineyard Wind (Massachusetts). It also includes projects in the permitting phase such as Kitty Hawk (North Carolina) and Ice Breaker (Ohio), and the New York Bight wind energy areas announced by the Administration earlier this year (New York/New Jersey).[4]

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[1] The White House, *FACT SHEET: Biden Administration Jumpstarts Offshore Wind Energy Projects to Create Jobs* (March 20, 2021).

[2] U.S. Department of Energy, Office of Energy Efficiency & Renewable Energy, National Renewable Energy Laboratory, *Offshore Wind Market Report: 2021 Edition,* at 24, (August 2021).

[3] *Id*. at 9, 16-17.

[4] *Id*. at 16-17.

The Biden Administration is also pursuing offshore wind development in other parts of the country. On October 13, 2021, the Department of the Interior announced plans to hold up to seven new offshore lease sales by 2025, not only on the East Coast, but also in the Gulf of Mexico and off the coasts of California and Oregon.[5]

Offshore wind provides reliable power at decreasing costs. The levelized cost of offshore wind energy continues to decrease dramatically[6] and capacity factors of 40-50 percent make it increasingly comparable to baseload technologies in terms of value to the power system.[7] The ability to deploy 30 GW of offshore wind capacity by 2030 will depend on a variety of factors, including sufficient installation vessels and port infrastructure, transmission planning, and robust domestic supply chains.[8] The Biden Administration is endeavoring to accelerate those efforts by providing $3 billion in loan guarantees for offshore wind through the Department of Energy's Loan Programs Office, deploying $230 million for port and intermodal infrastructure development, and pursuing a variety of other activities.[9]

II. TRANSMISSION

There are no processes currently in place, at either the state or federal level, to coordinate or plan for the interconnection of offshore wind into the grid. Offshore wind installations are connected to the grid by individual transmission lines to a single point of interconnection on an ad hoc, project-by-project basis. This is often referred to as the radial tie line or generator lead line approach.[10] Because there are limited points of interconnection to the onshore grid,[11] the offshore wind industry is now focusing on the development of a "backbone" offshore grid, which would avoid congestion at the onshore grid by connecting multiple offshore wind projects to each other and then use transmission lines to connect to the limited interconnection points on the onshore grid.[12] Recent studies have indicated significant financial savings from such planned offshore grid approaches. One study found that New England would save $500 million, including potential savings of over $300 million for customers due to reduced wholesale power prices.[13] Similarly, a study in New York concluded that a planned offshore grid approach would

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[5] U.S. Department of the Interior, *Secretary Haaland Outlines Ambitious Offshore Wind Leasing Strategy* (Oct. 13, 2021).

[6] *See* note 2, at 73 and 81.

[7] International Energy Agency, *Offshore Wind Outlook 2019,* at 11 and 44 (October 2019).

[8] *See* note 2, at 18 and 33.

[9] *See* note 1.

[10] *See* note 2, at 31.

[11] Business Network for Offshore Wind, *Offshore Wind Transmission White Paper*, at 12 (October 2020).

[12] The Brattle Group, PowerPoint on *Offshore Wind Transmission Systems,* at 10, May 12, 2021).

[13] *See* note 11, at 13.

save $500 million over the unplanned approach.[14] Additional benefits of a planned offshore grid approach include more efficient use of rights-of-way, reduced transmission congestion, and lessened impacts to fisheries and the environment.[15]

The Federal Energy Regulatory Commission (FERC) and transmission organizations under its jurisdiction have also taken actions to address issues with offshore generator interconnection and transmission planning. In October 2020, FERC held a technical conference to explore whether changes were needed to its planning processes in order to accommodate anticipated growth in offshore wind – the agency has solicited comments on this subject from the public.[16] In 2020, New Jersey became the first state to utilize a "state agreement approach" through PJM Interconnection, LLC, in order to incorporate its state policy goals of increasing offshore wind into PJM's transmission planning processes.[17] On the West Coast, the California Public Utilities Commission and the California Independent System Operator are studying the potential development of offshore wind to better inform transmission planning assumptions in the future.[18]

III. THE OFFSHORE WIND SUPPLY CHAIN

Offshore wind development has the potential to be a major boon to American industry. Achieving the Biden Administration's goal of installing 30 GW of offshore wind by 2030 will generate $109 billion in domestic supply chain investments over ten years[19] and support an estimated 80,000 American jobs.[20]

American manufacturers are positioned to seize on this opportunity by making and maintaining the components necessary to construct and operate large offshore wind facilities. American companies, like General Electric, make offshore wind turbines, and other U.S. companies have already signed major supply contracts with offshore wind developers.[21] For instance, in August 2021, offshore wind developer Orsted announced a contract with American

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[14] *Id.*

[15] The Brattle Group, Offshore Wind Transmission Systems, at 12-13, (May 12, 2021).

[16] Federal Energy Regulatory Commission, *Notice Inviting Post-Technical Conference Comments*, Docket No. AD20-18 (March 11, 2021).

[17] State of New Jersey Board of Public Utilities (NJBPU), *NJBPU Announces Major Step Forward in Offshore Wind Goals with Launch of First-of-its-Kind Competitive Solicitation*, April 15, 2021).

[18] *See* note 2, at 32.

[19] The Special Initiative on Offshore Wind, *Supply Chain Contracting Forecast for U.S. Offshore Wind Power – The Updated and Expanded 2021 Edition* (October 2021).

[20] U.S. Department of Interior, Bureau of Ocean Energy Management, Renewable Energy Fact Sheet (Jan. 2020).

[21] 10 Philadelphia, *Offshore Wind Supply Chain Worth $109B Over 10 Years, Report Finds* (Oct. 12, 2021).

company Kiewit Offshore Services, Ltd. to construct the first American-made offshore wind substation near Corpus Christi, Texas,[22] while the Sunrise Wind project retained Riggs Distler & Company, to construct advanced foundation components in New York for a new offshore wind project.[23] In New Jersey, the new Wind Port will support $500 million each year in economic activity and revitalize local seaside communities.[24]

The shipbuilding and steel industries are also benefitting from the growth of the domestic offshore wind industry. Dominion Energy is constructing a 472-foot wind turbine installation vessel in Brownsville, Texas,[25] that will be manned with United States mariners. U.S. Wind has also unveiled plans to construct a new steel fabrication facility at the site of the now-dormant Bethlehem Steel Corporation mill in Baltimore, Maryland, which produced steel for ships during World War II and for the Golden Gate Bridge.[26] According to experts, consistent federal and state policy supporting the offshore wind industry is necessary to ensure that companies continue to make supply chain investments in the United States.[27]

IV. THE OFFSHORE WIND WORKFORCE

American workers are poised to benefit from the offshore wind industry's growth. NREL estimates that every 1 MW of offshore wind capacity will create 20.7 jobs, and many of those jobs will be filled by steel workers, welders, cable joiners, and electricians. Construction at the former Bethlehem Steel facility, alone, is estimated to employ 3,500 workers.[28] NREL estimates that the average offshore wind construction worker installing wind turbines could make $132,000 per year, while workers in the offshore wind supply chain could make an average of $60,000 per year.[29]

The offshore wind industry is also partnering with American labor unions to ensure the availability of a well-trained and compensated workforce. Last November, Orsted announced an

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[22] Ocean Energy Resources, *Ramboll partners with Kiewit to win 132 MW wind farm project* (Sept. 21, 2021).

[23] Yahoo Finance, *Centuri Company Riggs Distler Selected for Offshore Wind Contract* (Oct. 8, 2021).

[24] The State of New Jersey, The New Jersey Wind Port (www.nj.gov/windport/) (accessed Oct. 11 2021).

[25] Orsted, *Dominion Energy, Ørsted and Eversource Reach Deal on Contract to Charter Offshore Wind Turbine Installation Vessel* (June 1, 2021).

[26] E&E News, Offshore wind to revive 'hallowed ground' for U.S. steel (August 4, 2021).

[27] Renewable Energy World, U.S. offshore wind generation goals have a supply chain problem (Aug. 13, 2021).

[28] *Id.*

[29] U.S. Department of Energy, Office of Energy Efficiency & Renewable Energy, National Renewable Energy Laboratory, *Power Sector, Supply Chain, Jobs, and Emissions Implications of 30 Gigawatts of Offshore Wind Power by 2030* (August 2021).

apprenticeship program with the North America's Building Trades Unions to train construction workers for the offshore wind industry,[30] and recently, Dominion Energy reaffirmed its commitment to employ a unionized workforce in the construction of the Coastal Virginia Offshore Wind project.[31] U.S. Wind also entered into memorandums of understanding with the United Steelworkers, local branches of the International Brotherhood of Electric Workers, and the Baltimore-D.C. Building Trades to ensure that union labor is used for construction and to make steel at its Baltimore steel fabrication facility.[32]

States are also taking an active role in ensuring the availability of a well-trained and diverse offshore wind workforce work. This February, New Jersey launched an offshore wind workforce development program that prepares workers for a career in the offshore wind industry, and the state is seeking to award at least 15 percent of the contract value for its Wind Port construction to women, veterans, and minority-owned businesses.[33] Similarly, the New York State Energy Research and Development Authority has launched an Offshore Wind Training Institute to train 2,500 workers for offshore wind careers.[34]

[30] North America's Building Trades Unions, North America's Building Trades Unions (NABTU) and Ørsted Sign Landmark MOU for U.S. Offshore Wind Workforce Transition (Nov. 18 2020).

[31] Dominion Energy, Dominion Energy, Trade Unions Announce Coastal Virginia Offshore Wind Partnership (Sept. 16, 2021).

[32] Baltimore Business Journal, US Wind to bring steel fabrication back to Sparrows Point with multi-million dollar investment (Aug. 3 2021).

[33] Atlantic Council, EnergySource, Offshore wind and labor union partnerships: a boon for an equitable green recovery (March 30, 2021).

[34] *Id.*

V. WITNESSES

The following witnesses have been invited to testify:

Heather Zichal
Chief Executive Officer
American Clean Power Association

David Hardy
Chief Executive Officer
Orsted Offshore North America

James Strong
Assistant to the Director, District 8
United Steel, Paper and Forestry, Rubber, Manufacturing, Energy, Allied Industrial and Service Workers International Union

Mark Menezes
Former Deputy Secretary of Energy
United States Department of Energy