
# Annual Report

December 6, 2018

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## APPENDICES


## EXECUTIVE SUMMARY

Development of the U.S. offshore wind energy resource moved significantly closer to a near-certainty during 2018 when multiple projects along the East Coast took concrete steps to put steel in the water, including a key approval of Virginia's demonstration project, lending credence to this fast emerging new U.S. industry. It has become clearer than ever that, with a potential build-out of at least 20,000 megawatts (MW) of installed capacity (or 2,000-3,000 wind turbines) along the East Coast over the next two decades, Virginia is well positioned to become a prime location for the offshore wind supply chain and service industry. As the demand for wind energy increases, experts predict that 37,000 FTE years will be created annually during peak construction years, between 2024 and 2028, assuming a conservative 8 GW East Coast market forecast.[1]

Virginia has many assets and attributes that make it attractive to the offshore wind industry. The Authority continues to work with and support the efforts by the Virginia Department of Mines, Minerals and Energy (DMME), the federal Bureau of Ocean Energy Management (BOEM), Dominion Energy, Ørsted and other stakeholders to help accelerate offshore wind development projects in Virginia, address environmental and financial issues, and create port and supply chain economic opportunities.

A number of recent significant developments have increased momentum and Virginia's potential as a location of choice for investments by the rapidly emerging industry.

- The Grid Transformation and Security Act became law in July 2018 declaring offshore wind and the Coastal Virginia Offshore Wind (CVOW) project to be in the public interest. It ensures that Dominion Energy can fund the CVOW project using existing base rates with no added cost to ratepayers.

- In November 2018, the State Corporation Commission (SCC) approved Dominion Energy's application, filed August 3, 2018, for approval to proceed with the construction of CVOW based on the above law. The demonstration CVOW project will provide critical information to the industry and stakeholders, and help to position Virginia as a leader committed to developing the offshore resource and making the Commonwealth an attractive location to the offshore wind supply chain and service industries.

[1] The Virginia Advantage, The Roadmap for the Offshore Wind Supply Chain in Virginia, BVG Associates, December 2018, https://www.vaoffshorewind.org.

- Governor Ralph Northam released the 2018 Virginia Energy Plan in October 2018. The Plan provides a strategic vision over the next ten years for Virginia's energy policy and sets goals for renewable energy generation, energy efficiency, and electric vehicles. The recommendations for offshore wind focus on supporting the development of the offshore wind resource itself as well as growing the offshore wind supply chain. The Energy Plan includes both support for the 12 MW offshore wind demonstration project (CVOW) and the recommendation to establish a goal that the full 2,000 MW of offshore wind potential in Virginia's wind energy area be developed by 2028.

  https://www.governor.virginia.gov/media/governorvirginiagov/secretary-of-commerce-and-trade/2018-Virginia-Energy-Plan.pdf

- BVG Associates was hired in July 2018 as Virginia's international energy consultant to develop a plan to position the state as the East Coast offshore wind supply chain and service industry location of choice. [The Virginia Advantage, The Roadmap for the Offshore Wind Supply Chain in Virginia will be available at https://www.vaoffshorewind.org.]

- Virginia supported BOEM's efforts to evaluate additional Wind Energy Areas (WEA). DMME submitted comments to BOEM's *Request for Feedback on the Proposed Path Forward for Future Offshore Renewable Energy Leasing on the Atlantic Outer Continental Shelf* (OCS) to help assess which geographic areas along the Atlantic, in addition to about a dozen already designated for development, are the most likely to have the highest potential for successful offshore wind development.

- The Port of Virginia, along with DMME, the Virginia Economic Development Authority and the Virginia Maritime Association, hosted terminal site tours for companies interested to learn about Virginia's advantages as a mid-Atlantic hub for the industry. These included globally recognized offshore wind developers, procurement and logistics specialists, European foundation fabricators, and other potential supply chain businesses. Virginia's port advantages – unlimited air clearance to sea, uncongested and deep channels, and land space for staging large components -- make it possible to ship very tall structures from shore-side fabrication and assembly facilities in an upright position to offshore installation sites. These logistics reduce costs and lower risks for developers.

- DMME staff met with stakeholders from the Eastern Shore to discuss Cape Charles and the role it could play in offshore wind development. DMME provided support documentation related to dredging and improving access from the deep channel to the

Cape Charles Harbor shoreline to parties interested in further development of the Cape Charles Harbor.

As a result of activities and accomplishments in 2018, the Authority makes the following recommendations in 2019 and beyond to further advance offshore wind development and related supply chain activities in Virginia. The recommendations are ranked in order of priority.

## RECOMMENDATIONS

**RECOMMENDATION 1**: Encourage and advocate for resources, supportive state and federal regulatory actions and changes, as well as legislative proposals, such as the establishment of a mandatory renewable energy standard with a specific goal for offshore wind and for extension and preservation of the federal tax credits.

**RECOMMENDATION 2**: Collaborate with stakeholders, including Dominion Energy, Ørsted, Virginia Economic Development Partnership, the Port of Virginia, Virginia and European manufacturers, and others to promote Virginia companies as part of the supply chain for offshore wind. Review and implement recommendations in The Virginia Advantage, The Roadmap for the Offshore Wind Supply Chain in Virginia [https://www.vaoffshorewind.org.]

**RECOMMENDATION 3:** Work towards a multi-state regional supply chain cluster in Mid- and South Atlantic coastal states, offering the industry a wide network and the best of what each state has to offer.

**RECOMMENDATION 4:** Work to identify possible power offtakers in the Commonwealth and elsewhere, such as large data companies with clean energy commitments and Amazon's Eastern Headquarters2 scheduled to be constructed in Northern Virginia at National Landing, for offshore wind energy from CVOW and the commercial Wind Energy Area. This will help obviate the need for SCC approval of the commercial site by defraying its costs to the ratepayers either partly or fully.

**RECOMMENDATION 5:** Actively solicit research and development opportunities and activities to reduce the cost and risk of developing the wind

resource and supply chain, including leveraging the DMME Research Lease in conformance with existing agreements.

**RECOMMENDATION 6:** Work with Virginia universities and colleges to establish wind training programs.

As required by § 67-1209 of the Code of Virginia, the Authority submits this eighth annual report to the Governor and the Chairpersons of the House Appropriations Committee, the Senate Finance Committee and the House and Senate Commerce and Labor Committees.

## MISSION AND OBJECTIVES

The Virginia Offshore Wind Development Authority (VOWDA or the Authority) was established in 2010 for the purposes of facilitating, coordinating, and supporting the development of the offshore wind energy industry, offshore wind energy projects, and related supply chain opportunities. The Code of Virginia § 67-1201 tasks the Authority to support Virginia offshore job creation and supply chain development in cooperation with relevant local, state and federal agencies. A copy of the Authority's Mission Statement and Objectives can be found in *Appendix A*.

The Governor appoints the nine non-legislative citizen members. The Director of DMME serves as the Director of the Authority, and DMME serves as staff to the Authority. The list of VOWDA Members is included as *Appendix B*.

The legislation requires the Authority to provide an annual summary of the activities of the Authority and policy recommendations to the Governor, the Chairpersons of the House and Senate Commerce and Labor Committees and the Chairs of the House Appropriations and Senate Finance Committees. Copies of all VOWDA reports are available on its website, https://www.vaoffshorewind.org/authority/about/.

## OFFSHORE WIND DEVELOPMENTS AND ACTIVITIES

### *Virginia Offshore Wind Development Authority*

To accomplish its goals and objectives, the Authority regularly updates and works to implement a comprehensive work plan. To improve communications and coordination regarding VOWDA's work tasks and other state activities to facilitate development of the offshore wind resource and supply chain, DMME staff held monthly calls with Dominion Energy.

In 2018, VOWDA focused on five objectives.

1. Encourage and advocate for supportive state and federal regulatory changes, as well as legislative proposals, such as the establishment of a mandatory renewable energy standard with a specific goal for offshore wind, and for extension of the federal tax credits.

2. Collaborate with stakeholders, including Dominion Energy, Ørsted, Virginia Economic Development Partnership, the Port of Virginia, Virginia and European manufacturers, and others to promote Virginia companies as part of the supply chain for offshore wind.

3. Work with the Governor's Office, DMME, and interested stakeholders to build support for State Corporation Commission approval of the CVOW project.

4. Work with CVOW partners to identify possible power offtakers in the Commonwealth and elsewhere, such as large data companies with clean energy commitments, for offshore wind energy from CVOW and the commercial Wind Energy Area.

5. Actively solicit third party participants to undertake offshore wind project development activities in the DMME Research Lease in conformance with existing agreements.

The Authority developed tasks to achieve these objectives, completing several activities during the 2017-2018 report year that support offshore wind power development.

- To help identify and explore strategies that promote the value and benefits of offshore wind energy development to generate increased public and political support, VOWDA filed comments with the State Corporation Commission on October 1, 2018, encouraging the SCC's approval of Dominion Energy's Coastal Virginia Offshore Wind project. The letter is included as *Appendix C*. The Chair of VOWDA presented these comments in support of CVOW at the SCC public hearing on October 9, 2018.

- To build support for the SCC's approval of the CVOW project by exploring power off-take marketing options, strategies were proposed to encourage power offtake customers for offshore wind developments and for enlisting interest in activities within the offshore Research Lease held by DMME.

- VOWDA filed comments with BOEM in March 2018 on the draft proposed *2019-2024 OCS Oil and Gas Leasing Program* to express key concerns about the impact on Virginia's offshore wind lease area and the CVOW project. VOWDA strongly urged BOEM to protect the existing and future offshore wind lease areas by not holding any offshore oil and gas lease sales that would encroach on existing or planned offshore wind farms as

to increase the cost of developing, constructing and operating these offshore wind facilities. A copy of this letter is included as *Appendix D*.

- To investigate the potential for the designation by BOEM of other Wind Energy Areas off the coast of Virginia, VOWDA, with Green Powered Technology, facilitated a meeting with BOEM staff and researched BOEM's process for WEA designation. The key points of the March 2018 report are:
  - BOEM's Request for Feedback to solicit input on areas of interest for new WEAS on that Atlantic OCS provides organizations opportunity to provide comment.
  - New WEA identification can also be initiated via industry unsolicited proposals or by official state request. BOEM noted that prior studies and planning completed by the states can be very helpful to their Renewable Energy Authorization process.
  - BOEM staff also noted that the high amount of restrictions affecting Virginia's coastline make WEA selection challenging.
- Maintain and update information on wind resource data, economics and environmental impacts, and information characterizing the state and federal regulatory framework for establishing a project off the coast of Virginia.
- Support continued development of a strategic or ocean management plan for waters offshore Virginia, which includes uses such as offshore wind, participating in Coastal and Marine Spatial Planning process for federal waters off the coast of Virginia.
- Identify incentives to attract supply chain businesses and manufacturers to Virginia. Identify local candidate businesses and help to connect them to state and federal support programs.
- Identify new grant opportunities and other financing mechanisms that support offshore wind development, including the supply chain based in Virginia, endorsing and possibly participating in federal grant applications and state efforts to support projects that improve the offshore wind value chain, reduce the delivered cost of power, and create jobs and other opportunities.
- Chair Joan Bondareff moderated a panel on Virginia/North Carolina offshore wind efforts at the 3rd Annual U.S. Offshore Wind Conference hosted by NewEnergyUpdate of the UK in Boston on June 7-8, 2018, and summarized the history and experiences of VOWDA at the Virginia Offshore Wind Executive Summit in Norfolk sponsored by the Sierra Club and MD BZ OSW on September 21, 2018.

The Authority heard presentations from various stakeholders and experts. Available presentations can be viewed on the VOWDA website at https://www.vaoffshorewind.org/authority/about/.

- Dominion Energy reported on key milestones and status on the commercial development and the Coastal Virginia Offshore Wind project.
- Dominion Energy reported on the Grid Transformation and Security Act of 2018 (VA Senate Bill 966) that declares 5,000 MW of renewable energy (both solar and wind) and the offshore wind demonstration project (CVOW) are in the public interest.
- The Port of Virginia addressed Virginia's unique maritime and workforce advantages attracting the interest of the U.S. and European supply chain companies considering investments in local facilities that can serve the emerging mid-Atlantic offshore wind industry. They also briefed the Authority on the Port's activities, focusing on its core business of moving ocean containers, and some of its other facilities that might be suited to play a role in supporting supply chain for offshore wind.
- Renewable Resources International briefed VOWDA on the Capitol Hill Congressional Briefing organized by the American Wind Energy Association, in cooperation with the Renewable Energy and Efficiency Caucus, held in Washington, D.C. on February 26, 2018. RRI Managing Partner Andy Geissbuehler attended and presented on the offshore wind opportunity for the U.S.

In addition, VOWDA monitored offshore wind activities of other mid-Atlantic states. A summary of significant developments is included as *Appendix E*.

## *Commonwealth of Virginia*

### Coastal Virginia Offshore Wind Project

Dominion Energy partnered with European developer Ørsted last year to develop the Coastal Virginia Offshore Wind Project (CVOW), which would be the first project in a federal lease area and the first owned by an electric utility company. The pilot project is located 27 miles off the coast of Virginia Beach on a 2,135-acre site leased by DMME. Ørsted will be in charge of the construction of the pilot project using two Siemens Gamesa 6 MW wind turbines.

Dominion filed an amended Research Activities Plan (RAP) in December 2017 to update the project design/installation details and signed an Engineering, Procurement and Construction contract with Ørsted in January 2018. Ørsted contracted the research vessel *Gerry Bordelon* to

conduct geophysical studies of the proposed site for the projects two turbines, searching on the sea floor for any obstructions, like unexploded ordnance, that would potentially impede construction activities.

The project has already made numerous scientific contributions to lower cost and risk industry wide. Rigorous environmental protocols and third-party oversight will ensure that the CVOW project will be respectful of archaeological resources, fishery resources, marine mammals and other species and their habitats. CVOW will provide experience in permitting, design, installation, and operations that may be helpful for stakeholders including the military, commercial and recreational interests, and other government entities. The information will be directly applicable to future commercial scale development in the adjacent 112,800-acre site leased by Dominion Energy from BOEM and help create the expertise that will ultimately lower future offshore wind costs.

On August 3, Dominion Energy announced it filed for SCC approval to proceed with the construction of the CVOW demonstration project. The SCC accepted written comments and held a hearing in Richmond on October 9 to obtain public testimony on the project. The SCC approved the application on November 2, 2018. The project will be funded through existing base rates enabled by the Grid Transformation and Security Act of 2018. The turbines, which would stand in 80-foot deep water and rise 550 feet above the surface, would not be visible from the Virginia Beach shoreline. They would generate electricity for Dominion customers through a 34.5-kilovolt cable extending through state and federal waters to a substation at Camp Pendleton.

Dominion plans to begin construction work on electrical interconnections in 2019, followed by construction and installation of the turbines in mid-2020.

## Grid Transformation and Security Act of 2018

Virginia's General Assembly passed legislation during the 2018 session that has the potential to further expand the offshore wind industry in Virginia. The legislation deems 5,000 MW of utility-scale solar and wind resources to be in the public interest, including the 12 MW demonstration project (CVOW). Governor Northam signed the legislation and it became law on July 1, 2018. The law ensures that Dominion Energy can fund the CVOW project using existing base rates with no added costs to ratepayers. Dominion Energy has committed to having at least 3,000 MW of new solar and land wind resources under development or in operation by the beginning of 2022.


## Virginia Offshore Wind Industry Supply Chain Development Plan

Offshore wind power development will result in the creation of an entirely new industry in the U.S. Unique port and workforce advantages can position Virginia as a leader as the industry takes hold. DMME issued a Request for Proposals from qualified contractors to develop a plan to position Virginia, specifically the Port of Virginia and the Hampton Roads region, as the East Coast offshore wind supply chain and service industry location of choice. The RFP sought expertise in offshore wind development, particularly as it relates to the industry supply chain, port infrastructure requirements, build-out of the various offshore wind supply chain sectors, and long-term maritime service needs.

BVG Associates was selected as Virginia's consultant and awarded the $125,000 contract in July 2018. The final report provides an analysis of Virginia's current maritime infrastructure and assets, identifies how to leverage Virginia's advantages, and provides recommendations on alleviating barriers and bolstering strengths. [Recommendation 2 calls for implementation of the report's recommendations, which will be addressed in VOWDA's 2019 work plan.] BVG also designed a partnership tool to connect foreign, domestic offshore wind industry developers, and supply chain businesses with Virginia's robust maritime industry and waterfront assets. The report provides a summary of Virginia's unique advantages; catalogues OSW-related workforce development and business incentive efforts that are in place or underway; identifies competitive gaps and makes recommendations to improve prospects that Virginia and its neighboring Mid- and South Atlantic coastal states capture a share of the new industry. A copy of the report, *Virginia Advantage: The Roadmap for the Offshore Wind Supply Chain in Virginia*, will be available on the Virginia Offshore Wind Industry Advantage website, https://www.vaoffshorewind.org/.

To support the BVG analysis, DMME engaged the VEDP, Virginia Maritime Association and the Virginia Ship Repair Association to build advocacy in developing a comprehensive database of companies interested in being supply chain participants. The VMA and VSRA already were members of the Virginia Offshore Wind Team, which was created by DMME, Port of Virginia, VEDP and the maritime industry associations in the fall of 2017 to promote the Commonwealth's unique advantages to serve as a hub location for the emerging U.S. OSW industry. DMME and the Virginia Offshore Wind Team partnered with Hampton Roads Workforce Council (formerly Opportunity Inc.) and the SMART Center at Tidewater Community College to provide technical assistance and identify workforce needs. DMME, VEDP and other members of the Virginia Offshore Wind Team also worked with the leaders of Workforce and Business Incentives/Business Climate teams, established to provide support among the business and workforce communities.

### 2018 Virginia Energy Plan

The 2018 Virginia Energy Plan, published October 1, 2018, includes both high-level and detailed recommendations to enable grid modernization to occur in a forward-looking and dynamic manner. The plan promotes the Commonwealth's transition to a more flexible, resilient, affordable and environmentally responsible energy system. The offshore wind sector is central to the Northam Administration's energy roadmap because of its ability to create new business opportunities, expand customer access to renewable energy and spark the high-demand jobs of the 21st century. The plan provides the Administration's commitment to a goal that the full 2,000 MW of offshore wind potential in Virginia's wind energy area be developed by 2028. In addition, the plan calls for the Commonwealth to include the offshore wind industry as a priority in future workforce development and economic development strategic plans.

https://www.governor.virginia.gov/media/governorvirginiagov/secretary-of-commerce-and-trade/2018-Virginia-Energy-Plan.pdf

## *Federal Government*

### National Offshore Wind Consortium

The U.S. DOE funded a National Offshore Wind Research and Development Consortium that will serve to accelerate solutions that reduce U.S. offshore wind costs and increase opportunities for the U.S. manufacturing and supply chain establishment. The federal agency selected the New York State Energy Research and Development Authority (NYSERDA) to lead the formation of the Consortium whose fundamental objective will be "to support practical, focused projects with the most qualified national researchers and facilities to achieve substantial long-term reductions in the cost of offshore wind generation". About $40 million in federal and matching funding will be made available through the Consortium over the next two years for a variety of offshore wind projects. NYSERDA invited DMME to participate in the Consortium. DMME is in discussions with NYSERDA about Virginia's participation options and promoting the Commonwealth's offshore research lease area as a unique and valuable resource for Consortium activities. DMME also is in discussions with Old Dominion University in hopes that the university can lead efforts to capitalize on research opportunities offered by the National Consortium.

### America's Water Infrastructure Act, Title I of S.3021 (Pub L. 115-270)

In October 2018, Congress passed and the President signed the Water Resources Development Act of 2018, which includes a study and report by the Secretary of the Army / Corps of Engineers on three innovative ports for offshore wind development.

## Offshore Wind Jobs and Opportunity Act

In March 2018, the U.S. House introduced the Offshore Wind Jobs and Opportunity Act, legislation designed to educate and train offshore wind workers. The new federal grant program that would be created by this legislation would assist colleges and universities, state and local governments, unions, and nonprofits with developing curricula, internships, health and safety programs, and other activities to develop an offshore wind workforce. The bill prioritizes grants to community colleges, organizations that service minority populations, and those helping workers from others industries transition to the offshore wind industry. The House Natural Resources Subcommittee on Energy and Mineral Resources held a hearing on the bill in June 2018, but it had not advanced when this annual report was published.

## Port Access Route Study Report

Congress passed and the President is expected to sign into law the Frank Lobiondo Coast Guard Authorization Act of 2018 (S. 140). Section 831 of this Act directs the Commandant of the Coast Guard to notify Congress, in 30 days following enactment, of the actions taken to carry out the recommendations contained in the final report issued by the Atlantic Coast Port Access Route Study for which notice of availability was published on March 14, 2016.

## Bureau of Ocean Energy Management

- **Offshore Wind Draft Design Guidelines:** In January 2018, BOEM released the Offshore Wind Draft Design Guidelines. Offshore wind developers asked BOEM to adopt the use of a "Design Envelope" approach in construction and operation plans for offshore wind facilities to take advantage of the rapid pace of technological development in the offshore wind industry. This would afford developers a degree of flexibility and allow them to make certain project-design decisions at the more commercially advantageous time later in the project development process.

- **Offshore Renewable Energy Leasing on the Atlantic Outer Continental Shelf:** BOEM is conducting an assessment of all waters offshore the United States Atlantic Coast for potential future offshore wind lease locations. Published in April 2018, the *Request for Feedback on the Proposed Path Forward for Future Offshore Renewable Leasing on the Atlantic Outer Continental Shelf* requested feedback by July 5 to help assess which geographic areas along the Atlantic, in addition to several already designated for development, are the most likely to have the highest potential for successful offshore wind development.

DMME submitted comments to the RFF expressing support for the continued use of the OCS for offshore wind development and requesting that Virginia be considered for additional Wind Energy Areas. The letter is included in this report as *Appendix F*.

BOEM is reviewing comments it received and will coordinate with its intergovernmental renewable energy task forces to conduct further stakeholder outreach.

## RECOMMENDATIONS FOR 2019 AND BEYOND

**RECOMMENDATION 1**: Encourage and advocate for resources, supportive state and federal regulatory actions and changes, as well as legislative proposals, such as the establishment of a mandatory renewable energy standard with a specific goal for offshore wind and for extension and preservation of the federal tax credits.

**RECOMMENDATION 2**: Collaborate with stakeholders, including Dominion Energy, Ørsted, Virginia Economic Development Partnership, the Port of Virginia, Virginia and European manufacturers, and others to promote Virginia companies as part of the supply chain for offshore wind. Review and implement recommendations in The Virginia Advantage, The Roadmap for the Offshore Wind Supply Chain in Virginia [https://www.vaoffshorewind.org].

**RECOMMENDATION 3:** Work towards a multi-state regional supply chain cluster in Mid- and South Atlantic coastal states, offering the industry a wide network and the best of what each state has to offer.

**RECOMMENDATION 4:** Work to identify possible power offtakers in the Commonwealth and elsewhere, such as large data companies with clean energy commitments and Amazon's Eastern Headquarters2 scheduled to be constructed in Northern Virginia at National Landing, for offshore wind energy from CVOW and the commercial Wind Energy Area. This will help obviate the need for SCC approval of the commercial site by defraying its costs to the ratepayers either partly or fully.

**RECOMMENDATION 5:** Actively solicit research and development opportunities and activities to reduce the cost and risk of developing the wind

resource and supply chain, including leveraging the DMME Research Lease in conformance with existing agreements.

**RECOMMENDATION 6:** Work with Virginia universities and colleges to establish wind-training programs.

## FUTURE GOALS AND ACTIVITIES

The following goals and activities are derived from the recommendations and are intended to help guide effective actions to achieve the recommendations. Staff will work with VOWDA in the first calendar quarter of 2019 to translate these into specific tasks in a separate work plan.

- Identify and explore strategies that promote the value and benefits of offshore wind energy development to generate increased public and political support. Leverage opportunities for VOWDA members to support legislative, executive and industry initiatives that advance or provide funding to offshore wind and supply chain development.

- Continue maintaining and updating information on wind resource data, economics and environmental impacts, and information characterizing the state and federal regulatory framework for establishing a project off the coast of Virginia.

- Support continued development of a strategic or ocean management plan for Virginia waters, which includes uses such as offshore wind, and participating in the Coastal and Marine Spatial Planning process for federal waters off the coast of Virginia.

- Explore opportunities to collaborate regionally in anticipation of wind power development in neighboring states, while emphasizing Virginia's unique assets.

- Continue to identify and promote specific Port and private assets and facilities unique to Virginia to support private developers and supply chain members involved in pre-construction, construction, operation and maintenance.

- Engage with ODU, Virginia Tech and other universities and colleges, the U.S. Navy, the U.S. Department of Energy, and other subject matter experts about curriculum, education programs, trainings, and/or certification of individuals interested in construction and maintenance of offshore wind turbines and relevant offshore safety training. Consider using Virginia Tech's planned new campus and tech center at National Landing for a program to train workers in offshore wind and renewable energy.

- Work with developers, supply chain companies, port and maritime industry, economic and work force development organizations and other stakeholders to assess the sourcing and supply strategy for components, services, and vessels employed or being contemplated for other offshore wind farms in the U.S. and overseas. Identify how Virginia companies and resources can best be deployed to promote and benefit from offshore wind development in Virginia and neighboring states.

- Work with the Virginia Economic Development Partnership (VEDP), Port of Virginia, Dominion Energy, Ørsted and other developers, and domestic and European supply-chain businesses to identify incentives to attract supply chain businesses and manufacturers to Virginia. Identify local candidate businesses and help to connect them to state and federal support programs.

- Continue to advocate on behalf of the Commonwealth that Virginia has the port infrastructure, unlimited air clearance, workforce resources, and strategic location that make Virginia the ideal host and partner for offshore wind developers and their preferred supply chain partners. Promote the Port of Virginia's inclusion in the U.S. Army Corps of Engineers' study on innovative ports for offshore wind under a provision of America's Water Infrastructure Act of 2018 (S. 3021).

- Investigate the potential for the designation by BOEM of other Wind Energy Areas off the coast of Virginia.

- Identify new grant opportunities and other financing mechanisms that support offshore wind development, including the supply chain based in Virginia, endorsing and possibly participating in federal grant applications and state efforts to support projects that improve the offshore wind value chain, reduce the delivered cost of power, and create jobs and other opportunities.

- Work with BOEM to minimize undersea cable right of way conflicts.

- Work with DMME and other stakeholders to identify possible projects in the research lease area that advance development, lower costs and risks and do not interfere with CVOW. Specifically, DMME will work with the National Offshore Wind Research and Development Consortium, BOEM, DOE and others to leverage the research lease, Virginia universities and other unique Virginia assets to encourage and provide incentives for research activities and projects to accelerate the industry and development of the offshore wind resource.


# APPENDIX A

# MISSION STATEMENT AND OBJECTIVES

# Virginia Offshore Wind Development Authority

## Objectives

## Mission Statement

The Virginia Offshore Wind Development Authority (the "***Authority***") is created as a political subdivision of the Commonwealth for the purpose of facilitating, coordinating, and supporting the development (either by the Authority or by other qualified entities) of the offshore wind energy industry, offshore wind energy projects, and supply chain vendors by:

A. Collecting relevant metocean and environmental data;
B. Identifying existing state and regulatory or administrative barriers to the development of the offshore wind energy industry;
C. Working in cooperation with relevant local, state, and federal agencies to upgrade port and other logistical facilities and sites to accommodate the manufacturing and assembly of offshore wind energy project components and vessels; and
D. Ensuring that the development of such wind projects is compatible with other ocean uses and avian and marine resources, including both the possible interference with and positive effects on naval facilities and operations, NASA-Wallops Flight Facility operations, shipping lanes, recreational and commercial fisheries, and avian and marine species and habitats.

The Authority shall, in cooperation with the relevant state and federal agencies as necessary, recommend ways to encourage and expedite the development of the offshore wind energy industry.

The Authority shall also consult with research institutions, businesses, nonprofit organizations, and stakeholders as the Authority deems appropriate.

The Authority shall consider seeking grant and/or loan guarantees and/or entering into public-private partnerships to assist in the development of offshore wind.

The Authority shall provide two reports: 1) by May 31, 2011, a report on its recommendations on what is needed to facilitate the transmission of the offshore wind-generated power after review of the transmission study prepared by the investor-owned utility, Dominion Virginia Power; and 2) by October 15 each year, an annual summary of the activities of the Authority and policy recommendations to the Governor, the Chairs of the House and Senate Commerce and Labor Committees and the Chairs of the House Appropriations and Senate Finance

## Objectives

Committees (the "Annual Report"). The Annual Report shall include specific policy recommendations that shall be derived from and supported by the actions, results, and deliberations of the Authority in carrying out its objectives listed below.

***A. <u>Virginia Offshore Industry Data:</u> Facilitate the definition, collection, dissemination of relevant metocean data, environmental data, and other information needed by Virginia offshore wind stakeholders, utilizing existing, planned, or projected sources of data collection or activities.***

1. Direct and provide support to the Virginia Department of Mines, Minerals and Energy (DMME) to gather, reconcile and disseminate information and data required for the development of the offshore wind industry and offshore wind facilities. Specifically, develop a strategy and action plan to:

    a. Inventory the available information (e.g. wind data, environmental data, oceanographic data, sea current data, electricity transmission data, port and shipping data, DOD/Navy Coast Guard requirements, integration of the Chesapeake Light Tower, offshore LIDAR buoy data, wind turbine construction and operating cost data, etc.);
    b. Gather stakeholder input regarding what information is required to support the offshore wind industry;
    c. Reduce gaps in information required versus information collected[1];
    d. Collect, process and disseminate this information to stakeholders; and

2. Collect, monitor, and provide information regarding the delivered cost, rate impact, economic impact, and environments benefits of electricity generated from offshore wind projects that considers existing studies, legislative and regulatory actions by the Commonwealth, federal government and other states, and information provided by stakeholders and interested parties;

3. Review, support/endorse and possibly participate in federal grant applications and state efforts that support projects that will improve the offshore wind value chain to shorten completion times, reduce the delivered cost of power, and create job opportunities.

[1] Note that the Department of the Interior plans to make available to lessees available federal data at the time of the lease sale for offshore wind

## Objectives

***B. <u>Offshore Leasing, Permitting, Financing, and Regulation:</u> Identify existing federal and state barriers to the development of the offshore wind industry in Virginia.***

1. Define, identify and provide information regarding:

    a. Virginia's renewable energy goals with respect to offshore wind as well as state and federal incentives for renewable energy development;
    b. The current federal and state regulatory framework for the development, transmission, generation and purchasing power for offshore wind in Virginia;

2. Develop a process to gather and validate stakeholder input regarding perceived and/or real federal and state regulatory and administrative barriers to the development of the offshore wind industry in Virginia and work with stakeholders to create action plans or strategies to remove or reduce those barriers.

3. Incorporate results of these findings into the Annual Report.

***C. <u>Virginia Offshore Job Creation & Supply Chain Development:</u> Work in cooperation with relevant local, state, and federal agencies to accommodate the manufacturing, assembly, and maintenance of offshore wind energy project components and vessels.***

1. Support the Virginia Economic Development Partnership (VEDP) to:

    a. Assess the competitiveness of Virginia for the location of manufacturing, assembly, portage, and service centers to support the offshore wind industry;
    b. Define and implement strategies to attract industry to locate facilities in Virginia that will support the manufacturing, assembly, service and transport resources required by the industry participants; and
    c. Address the training and human resource requirements and the mechanism to provide the necessary human resources.

2. Consider incentives and/or policy initiatives needed to attract offshore related business to Virginia so as to create employment opportunities and balance the delivered cost of offshore wind and incorporate any recommendations regarding those incentives/policy initiatives into the Annual Report.

## Objectives

***D. <u>Offshore Wind Project Siting and Development:</u> Communicate and coordinate with stakeholders, including the Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE) Task Force to ensure that the development of offshore wind projects is compatible with other ocean uses and avian and marine resources, including both the possible interference with and positive effects on naval facilities and operations, NASA-Wallops Flight Facility operations, shipping lanes, recreational and commercial fisheries, and avian and marine species and habitats.***

1. Provide input and support to the Virginia BOEMRE Task Force in their ongoing communication with local, state, tribal, and federal stakeholders concerning the compatibility of offshore wind projects with other ocean uses.

2. Encourage the development of a strategic plan regarding the development and use of the offshore waters of Virginia for wind generation and other uses (recreation, defense, oil and gas exploration, shipping, etc.), using the principles of coastal and marine spatial planning.


# APPENDIX B

# VOWDA MEMBERS


# BOARD MEMBERS

**Joan Bondareff, Chair**
Attorney
Blank Rome LLP

**Hayes Framme**
Government Relations and Communication Manager Southeast
Ørsted

**Phillip S. Green, Vice Chair**
President
Green Powered Technology

**Robert Matthias**
Assistant to the City Manager
VA Beach City Manager's Office

**James McArthur, Jr.**
**Virginia Commercial Space Flight Authority Representative**
Vice Admiral
U.S. Navy (Retired)

**Laura McKay**
Manager
Virginia Coastal Zone Management Program

**Mark D. Mitchell**
Vice President – Generation Construction
Dominion Energy

**Arthur W. Moye, Jr.**
Director of External Affairs
Virginia Maritime Association

**Brian Redmond**
Managing Director
Paragon Asset Group, LLC


# APPENDIX C

# SUPPORT OF DOMINION ENERGY COASTAL VIRGINIA OFFSHORE WIND PROJECT

VIRGINIA OFFSHORE WIND DEVELOPMENT AUTHORITY

Washington Building, 8th Floor
1100 Bank Street
Richmond, Virginia 23219-3638
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https://www.vaoffshorewind.org/authority/

October 1, 2018

Mr. Joel Peck, Clerk
Virginia State Corporation Commission
P.O. Box 1197
Richmond, Virginia 23218

Subject: Case Number PUR-2018-00121

Dear Mr. Peck:

The Virginia Offshore Wind Development Authority (VOWDA) respectfully requests the State Corporation Commission (SCC) approve Dominion Energy's Coastal Virginia Offshore Wind (CVOW) project. The project is deemed to be in the public interest under current Virginia law; is a prudent investment of ratepayer funds; will help achieve Virginia's energy policy goals as laid out in Virginia statute including increased fuel diversity and energy independence; and can be a conduit to cost-competitive future offshore wind generation.

VOWDA is an Authority established under Virginia statute with gubernatorial appointments for the purposes of facilitating, coordinating, and supporting the development of the offshore wind energy industry, offshore wind energy projects, and related supply chain opportunities. The legislation that created VOWDA in 2010 also tasked the Authority to support Virginia offshore wind job creation in cooperation with relevant local, state, and federal agencies.

Harnessing the offshore wind resource is a win-win for Virginia and allows the Commonwealth to be part of the green revolution across the nation. As more offshore wind areas are developed in the United States, costs, which have declined dramatically over the past decade in Europe, will continue to come down significantly and have come down in other states in the U.S., e.g., Massachusetts and Rhode Island. CVOW can contribute to these cost declines through learning and efficiencies gained during project deployment with the assistance of its contractor Ørsted, a major European wind developer. Virginia's unique port and workforce assets provide a tremendous opportunity for the Commonwealth to establish itself as a leader in offshore wind power development by capitalizing on the opportunity to grow a new industry.

Timely completion of Dominion's two-turbine, 12-megawatt (MW) project is an important first step to develop this new generation resource on a commercial scale. These first

two turbines will also serve as an important signal that Virginia is a participant in an emerging U.S. industry that promises new, well-paying long-term jobs. This project should be viewed as a prudent and necessary stepping stone to full commercial development. The project already has made numerous scientific contributions to help lower cost and risk industry wide. Dominion has partnered with the Denmark-based developer Ørsted, the world leader in offshore wind development, to further reduce the costs of CVOW. In addition, rigorous environmental protocols are in place, and oversight by federal, state and third party regulators and observers will ensure that the CVOW project will be respectful of archaeological resources, fishery resources, marine mammals and other species and their habitats as well as protecting the interests of shipping and defense from our large base in Norfolk.

This project should be viewed as prudent research, development and demonstration that will benefit ratepayers in the long-term. CVOW will also ensure that Virginia is prepared to utilize offshore wind as a commercial-scale resource as costs come down even further. This reduction in costs already has begun to occur in the United States[1], which has the advantages of cost reduction lessons learned from European experience, technology advancements, development of a robust local supply chain, and from capturing benefits of economy of scale as the market develops.

The Virginia General Assembly has made it clear on more than one occasion that it finds research and commercial development of offshore wind energy to be in the public interest. The latest examples come from 2018 legislation, SB 966, which states that "[c]onstruction, purchasing, or leasing activities for a test or demonstration project for a new utility-owned and utility-operated generating facility or facilities utilizing energy derived from offshore wind with an aggregate capacity of not more than 16 megawatts are in the public interest.(Emphasis added.)" Also, according to SB 966, "[c]onstruction, purchasing, or leasing activities for a new utility-owned and utility-operated generating facility or facilities utilizing energy derived from sunlight or from wind with an aggregate capacity of 5,000 megawatts … are in the public interest. (Emphasis added.) With this action, the SCC has the opportunity to implement the intent of these laws and ensure that the public's interest in renewable energy is afforded to Virginia ratepayers.

Four years ago, the General Assembly declared in chapter 550 of the 2014 Acts of Assembly that "...planning and development activities for a new generating facility or facilities utilizing energy derived from offshore wind are in the public interest." The same can be said today, as noted above.

Development of CVOW is also consistent with several other key goals stated in the Code of Virginia, from the Commonwealth's Energy Objectives (§ 67-101) and Energy Policies (§ 67-102), including:

- Minimizing the Commonwealth's long-term exposure to volatility and increases in energy prices through greater energy independence;

[1] MA issued a letter stating the 800 MW Vineyard Wind Project will provide the Commonwealth with energy and RECs at a total levelized price of 6.5 cents/kWh (2017 dollars) over the term of the long-term contracts. [1] https://macleanenergy.files.wordpress.com/2018/08/doer-83c-filing-letter-dpu-18-76-18-77-18-78august-1-2018.pdf

- Increasing Virginia's reliance on sources of energy that, compared to traditional energy resources, are less polluting of the Commonwealth's air and waters;
- Supporting research and development of, and promoting the use of, renewable energy sources;
- Ensuring that the combination of energy supplies and energy-saving systems are sufficient to support the demands of economic growth; and
- Promoting the generation of electricity through technologies that do not contribute to greenhouse gases and global warming.

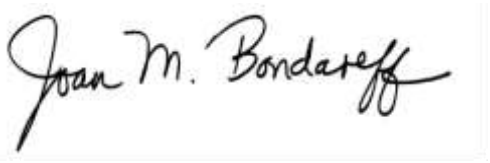
For these reasons, VOWDA respectfully requests the SCC approve Dominion's application for CVOW. It is in the public interest for the Commonwealth to take this first step to position Virginia as a leader in the offshore wind industry; to provide long-term benefits to ratepayers by making a prudent investment now; and to receive the economic development benefits that will result.

In conclusion, the SCC has the opportunity to help ensure CVOW is a success. The project is well prepared for final development and installation. Following five years of pre-construction studies, planning and data analysis, CVOW is about to receive final approvals from the Bureau of Ocean Energy Management of the U.S. Department of the Interior to proceed with permitting and construction with a target completion date of 2020.

We appreciate your consideration of these comments and the Authority's legislated role in promoting offshore wind for the benefit of all Virginians.

If you need any further information about the role VOWDA plays in promoting offshore wind, or the importance of the CVOW project, please contact me at 703.989.8011 or Bondareff@eBlankRome.com.

Sincerely,



Joan Bondareff
Chair

cc: The Honorable Ralph Northam, Governor of Virginia
The Honorable Brian Ball, Secretary of Commerce and Trade
The Honorable Matthew Strickler, Secretary of Natural Resources
Thomas F. Farrell, II, Chairman, President and Chief Executive Officer, Dominion Energy


# APPENDIX D

# 2019-2024 OCS Oil and Gas Leasing Program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http://wind.jmu.edu/offshore/vowda/index.html

March 8, 2018

Ms. Kelly Hammerle
Chief, National Oil and Gas Leasing Program Development and Coordination Branch
Leasing Division, Office of Strategic Resources
Bureau of Ocean Energy Management (VAM–LD)
45600 Woodland Road
Sterling, VA 20166–9216,

**Subject: 2019-2024 Draft Proposed Outer Continental Shelf Oil and Gas Leasing Program. [Docket ID: BOEM–2017–0074]**

Dear Ms. Hammerle:

The Virginia Offshore Wind Development Authority (VOWDA), an advisory commission to the Governor of Virginia, established under state law, appreciates the opportunity to submit this public comment in response to the subject Draft Proposed Program (DPP). The DPP will set the stage for the next five years for oil and gas leasing on the outer Continental Shelf (OCS) adjacent to the U.S. coast including the mid-Atlantic region.

The mid-Atlantic region is already the host of multiple offshore wind leases, designations of Wind Energy Areas (WEAs) and proposals for additional WEAs. The program for offshore wind development has been capably managed by BOEM for many years and we support the continued use of the OCS for this development. For this reason, we respectfully request that the existing offshore wind program and projects be protected from encroachment by any future oil and gas leasing adjacent to the Mid-Atlantic and North-Atlantic Planning Areas that would increase the cost of developing, constructing and operating offshore wind facilities. As the notice states, and we agree, any future oil and gas leasing must allow "critical military and other ocean uses [to} continue," and protect our "sensitive physical and biological resources." (83 Federal Register at 831, January 8, 2018.)

VOWDA supports the protection of existing offshore wind leases on Virginia's Outer Continental Shelf (OCS), and requests that existing and future WEAs not be encroached by any future offshore oil and gas lease sale during the 2019-2024 period covered by the subject DPP.

These fragile WEAs have already been the subject of multiple stakeholder meetings resulting in deconflicting these areas from existing military and other uses, including shipping. Adding oil and gas development on top of or near these areas could lead to conflicts that cannot easily be resolved and could lead to increased costs for offshore wind. Protection of existing legal rights must continue as BOEM moves forward with its proposed five-year plan.

A key factor in offshore wind becoming a cost-effective commercial energy source for Virginia at gigawatt scales is investment in domestic supply chain facilities, which in turn would be attracted by a steady stream of offshore wind development projects over decades, which would enable those manufacturing investments to be recovered. This prospect would be negatively affected by the extent to which offshore oil and gas leasing encroaches on existing and planned offshore wind farms.

Thank you for this opportunity to comment on the subject DPP. VOWDA strongly urges BOEM to protect the existing and future offshore wind lease areas by not holding any offshore oil and gas lease sales that would encroach on existing and planned offshore wind farms so as to increase the cost of developing, constructing and operating these offshore wind facilities.

Sincerely,

Joan Bondareff
Chair

c: Will Payne, Chief Deputy, Virginia Department
of Mines, Minerals and Energy


# APPENDIX E

# 2018 Key Offshore Wind Activities

# Other Mid-Atlantic States

## Connecticut

- Governor Dannel Malloy and the Department of Energy and Environmental Protection (DEEP) announced in June 2018 that Connecticut has selected Deepwater Wind's Revolution Wind Project to supply Connecticut 200 MW of offshore wind. Deepwater Wind submitted a proposal in response to DEEP's RFP issued in February 2018. The project must start delivering electricity between July 1, 2019, and December 31, 2025. Deepwater Wind is also proposing an optional storage component, which would make Revolution Wind capable of delivering clean energy to Connecticut utilities when it is most needed.

## Delaware

- The Offshore Wind Working Group, established by Governor John Carney in 2017 to study how Delaware can participate in developing offshore wind, identify ways to leverage related economic opportunities, and make recommendations for engaging in the development of offshore wind for Delaware. The final report, presented June 29, 2018, identified factors and parameters that Delaware should consider in either responding to or soliciting proposals for offshore wind as well as things that the state would need to do or examine in order to position itself to become the locations for part of the supply chain for offshore wind projects in the Mid-Atlantic.

  http://www.dnrec.delaware.gov/energy/Documents/Offshore%20Wind%20Working%20Group/Offshore%20Wind%20Working%20Group%20Report%20June%2029%202018.pdf

## Maine

- In June 2018, the Main Public Utilities Commission voted to review further the terms of the power contract for New England Maine Aqua Ventus I, a 12 MW floating offshore wind pilot project off Maine's shores. The demonstration project would deploy two 6-MW turbines on VolturnUS, the floating concrete semi-submersible hull designed by UMain. The 20-year long contract term sheet initially approved in February 2014 came under scrutiny in January 2018. At issue is the higher cost of producing power in the prototype design. In January 2018, Central Main Power agreed to buy wholesale electricity from Aqua Ventus starting at 23 cents per kWh, and to pay 2.25 percent more each following year, up to 35 cents per kWh in 2040. However, the electric company could not charge customers more than an average of 7.5 cents per kWh. Aqua Ventus investors and the Energy Department would make up the difference.

## Maryland

- In January 2018, the Maryland Energy Administration awarded three companies Offshore Wind Business and Offshore Wind Workforce Development grants totaling $575,000 for

offshore wind development. The MEA created these programs with statutory authority provided by the Maryland Offshore Wind Development Act of 2013.

- By lease amendment effective March 2018, BOEM merged US Wind Inc.'s commercial leases OCS-A 0489 and OCS-A 0490 into a single lease, retaining lease number OCS-A 0490. BOEM approved the Site Assessment Plan in March 2018. The SAP approval allows for the installation of a meteorological tower and a seabed mounted acoustic Doppler current profiler sensor and a conductivity, temperate, and depth sensor.

- In April 2018, US Wind, Inc. selected two Baltimore firms for development and construction work related to fabrication and installation of a meteorological tower for its 32-wind turbines project off the coast of Ocean City. A substation will collect the energy from the turbines and transit the electricity to the shore using underwater cables. The project is anticipated to come online in early 2020, with an operational life expectancy of more than 25 years.

## Massachusetts

- Boston-based Anbaric Development Partners received approval in February 2018 from FERC for the right to develop a shared transmission system in support of Massachusetts offshore wind. The decision grants ADP the authority to solicit customers and sell transmission rights to a 2–2.4 GW offshore wind transmission system in southern New England called the Massachusetts Ocean Grid. It also allows ADP to offer its backbone transmission system to offshore wind developers that currently hold federal leases as well as future leaseholders.

- Secretary of the Interior Ryan Zinke announced in April 2018 the proposed lease sale for two additional areas offshore Massachusetts for commercial wind energy leasing – Atlantic Wind Lease Sale 4-A, commercial leases OCA-A 0502 and OCA-A 0503.

- BOEM approved the Site Assessment Plan for Lease OCA-A 0501 in May 2018, which allows for the installation of up to two Fugro SEAWATCH Wind LiDAR metocean buoys.

- Bay State Wind, a partnership between Ørsted and Eversource for an offshore wind project 25 miles off Massachusetts that includes a 55 MW battery storage system, signed agreements in May 2018 to build a training center in New Bedford. The company expects to hire up to 1,000 workers during the construction phase and create 100 permanent jobs over the 25-year life of the turbines, with an operations and maintenance facility that will also be located in New Bedford.

  Bay State Wind signed an agreement in April 2018 with EEW, an international leader in steel pipe manufacturing, to create a Massachusetts manufacturing facility to make offshore

wind components. The new manufacturing facility will create approximately 500 annual construction jobs, plus an additional 1,200 annual indirect jobs in the local community.

- Vineyard Wind was chosen in May 2018 as the winning bid under Massachusetts's 83C offshore wind solicitation to provide 800 MW of wind power off the coast of southern Massachusetts. It is projected in-state construction could begin in 2019, with the wind farm fully operational by 2021. The decision marks a milestone in Massachusetts' path toward procuring 1,600 MW of offshore wind energy by 2027. BOEM had released its Notice of Intent in March 2018 to prepare an Environmental Impact Statement for the Construction and Operations Plan submitted by Vineyard Wind LLC.

  Three Massachusetts electric utilities filed long-term contracts in August 2018 for the Vineyard Wind project for review and approval by the state's Department of Public Utilities. This would be the largest procurement of offshore wind in U.S. history. It is expected that over the 20-year contracts, the project will deliver electricity at a levelized price of $65/MWh, falling well below predictions that ranged from $160/MWh to $90/MWh. Vineyard Wind will deliver 800 MW of offshore wind capacity in two tranches of 400 MW with target completion dates of mid-January 2022 and 2023.

- In July 2018, the Massachusetts Maritime Academy showcased its state-of-the-art port infrastructure at the academy's campus, which will include an offshore wind-training center that will be ready for use in the fall. The training center will help provide skilled workers needed to support the offshore wind projects on the Eastern seaboard. The center will include a training tower modeled after offshore wind turbines and a vessel to train workers on how to maneuver up to a turbine's monopile and transfer from boat to boat.

- The Massachusetts House and Senate approved a clean energy bill (H. 4857) in July 2018 that could double the state's commitment to procure from 1,600 – 3,200 MW of offshore wind. The bill directs the state's Department of Energy Resources to investigate "the necessity, benefits, and costs of requiring distribution companies … to jointly and competitively conduct additional offshore wind generation solicitations and procurements of up to approximately 1,600 MW of aggregate nameplate capacity." Governor Baker is expected to sign the bill.

- BOEM will auction nearly 390,000 acres offshore Massachusetts on December 19, 2018. Nineteen companies qualified to participate, demonstrating continued strong commercial interest in the U.S. offshore wind market.

## New Jersey

- Governor Phil Murphy signed Executive Order No. 8 in January 2018 directing the New Jersey Board of Public Utilities (NJBPU) to fully implement the Offshore Wind Economic

Development Act and begin the process of moving the state toward a goal of 3,500 MW of offshore wind energy generation by 2030. The law creates ratepayer financing of wind field development though an offshore wind renewable energy credit program. The order directs NJBPU to work with the Department of Environmental Protection to establish an Offshore Wind Strategic Plan. The NJBPU began the Offshore Wind Renewable Energy Certificate (OREC) Funding Mechanism rulemaking process in February and solicited feedback from the public and stakeholders. In July, the NJBPU proposed OREC rules that describe how an offshore wind project would receive funds from the state's electric ratepayers through electric distribution companies. The wind farms would receive ORECs once they start generating electricity, which would allow them to pay back creditors that finance project construction.

- In April 2018, DF Renewable Energy entered into a preliminary agreement with Fishermen's Energy to acquire the 24 MW Atlantic City Wind Farm project located three miles off the coast of New Jersey. The New Jersey state legislature approved a bill allowing the New Jersey Board of Public Utilities to reconsider the 24 MW project that was previously rejected by Governor Chris Christie.

- Ørsted's proposed Ocean Wind offshore wind farm is for a 160,480-acre site located approximately 10 nautical miles off the coast of Atlantic City. BOEM has two proposed lease areas for offshore wind development off the Jersey Shore, which could accommodate a capacity of more than 3,000 MW of offshore wind energy. In July 2018, Ørsted announced the deployment of a specialized buoy designed to measure wind and wave conditions. The AXYS FLiDAR WindSentinel is a floating LiDAR solution that will measure wind speed and direction to help determine the best locations and positions for wind turbines on the federally leased area.

## New York

- Governor Andrew Cuomo unveiled a comprehensive agenda in January 2018 to combat climate change that included the development of at least 800 MW of offshore wind resources. In March 2018, the Governor and the New York State Energy Research and Development Authority (NYSERDA) released the *New York State Offshore Wind Master Plan,* a document that highlights the state's progress on offshore wind development and charting a path forward. The plan is designed to help meet the Governor' goal of procuring 2,400 MW of offshore wind energy by 2030, which is part of an overall strategy to generate at least 50% of New York's electricity from renewables by 2030.

  To move forward on this goal, NYSERDA launched a Request for Information to solicit input to inform the development of a Request for Proposals for procuring Offshore Wind Renewable Energy Credits (ORECs). NYSERDA developed the RFI pursuant to the NY Public

Service Commission's July 2018 order establishing offshore wind standard and framework for phase 1 procurement. Comments received by the August 10, 2018, deadline are being used to inform the development of NYSERDA's 2018 offshore wind request for proposals. The winning bid will be chosen based on a combined overall ranking and NYSERDA will determine whether to award the contract on the fixed or adjustable index PREC price, as well as on a contract length of 20-25 years.

- In July 2018, Governor Cuomo called on the Department of the Interior to delineate and lease at least four new wind areas, totaling 3.2 GW, recommended by the state's Offshore Wind Master Plan.

- Equinor, formerly known as Statoil, won the first federal offshore wind lease in New York in March 2017 for an area 20 miles south of Long Island. The company has planned for a 600 MW wind farm called Empire Wind for the site. Equinor submitted the Site Assessment Plan in June 2018. If Equinor finds a buyer for the power the project would produce, construction could begin in 2023.

- BOEM is moving forward with wind energy planning efforts on the OCS in the New York Bight region, an area of shallow waters between Long Island (to the north and east) and the New Jersey coast (to the south and west). In April 2018, BOEM published a Call for Information and Nominations (Call) to obtain nominations from companies interested in commercial wind energy leases within the proposed area. BOEM is also seeking public input on the potential for wind energy development in the Call Area.

- In June 2018, DOE awarded the New York State Energy Research and Development Authority (NYSERDA) an $18.5 million grant to establish the National Offshore Wind Research and Development Consortium, whose overall goal is to reduce offshore wind costs in the U.S. New York State, through NYSERDA has committed an additional $20.5 million. The consortium is a cooperative innovation hub that will bring together industry, academia, government and other stakeholders to advance offshore wind plan technologies, develop innovative methods for wind resource and site characterization, and develop advanced technology solutions for installation, maintenance, and supply chain.

- The East Hampton Town Board voted in July 2018 to grant Deepwater Wind's South Fork Wind Farm an easement to lay power cables beneath town road. The proposed wind farm, approved by the Long Island Power Authority in 2017, will consist of 15 advanced offshore wind turbines able to generate 90 MW of energy and would the nation's second and largest offshore wind farm.

## North Carolina

- The Virginia and North Carolina Intergovernmental Renewable Energy Task Force met on December 7, 2017, to discuss the current state of the region's offshore wind resources.

- According to a report released in March 2018 by the Environment North Carolina Research and Policy Center, and the Frontier Group, offshore wind could be the source of North Carolina's clean energy future. The report, *Wind Power to Spare: The Enormous Energy Potential of Atlantic Offshore Wind*, indicates that offshore wind could provide 4.7 times the electricity each year than the state currently uses.

## Ohio

- The Draft Environmental Assessment on the Lake Erie Energy Development Corporation (LEEDCo) proposal to construct and operate Project Icebreaker, a 20.7 MW offshore wind project located eight miles offshore Cleveland, concluded that the project will have no significant environmental impacts. In July 2018, the Ohio Siting Board recommended conditional approval, with some restrictions, of the proposed first-ever U.S. freshwater six-turbine wind project. Developers must have a still-to-be-approved bird and bat monitoring plan in order to operate at night. The Cleveland-Cuyahoga County Port Authority will be the site of an active staging area for construction materials for the pilot wind project.

## Rhode Island

- In May 2018, Governor Raimondo announced that Rhode Island selected Deepwater Wind to construct a 400 MW offshore wind farm. The Revolution Wind project, more than ten times the size of the Block Island Wind Farm, was selected through a competitive offshore wind procurement process in collaboration with Massachusetts. The project, located in federal waters, roughly halfway between Montauk, NY, and Martha's Vineyard in Massachusetts, is designed to serve as a regional energy center. Deepwater is also proposing an option energy-storage component, which would make Revolution Wind capable of delivering clean energy to Connecticut utilities. If approved, construction work would begin in 2022 and operational in 2023. [Ørsted announced on November 9, 2018 the completion of the acquisition of Deepwater Wind.]

- In May 2018, the Massachusetts Clean Energy Center released the 2018 Massachusetts Offshore Wind Workforce Assessment, which examines the workforce needs and economic impact of the emerging offshore wind industry. The report estimates that the deployment of 1,600 MW of offshore wind could support between 6,870 and 9,850 job years over the next 10 years and generate a total economic impact in Massachusetts of between $1.4 billion to $2.1 billion. Between $675 and $800 million of that is direct economic output.

- BOEM published a Notice of Intent on October 19, 2018, to prepare an Environmental Impact Statement for the Construction and Operations Plan for the South Fork Wind Project

offshore Rhode Island.  If approved, the plan would allow construction and operation of up to 15 turbines that connect via a transmission cable to a grid in East Hampton, NY.


# APPENDIX F

# Offshore Renewable Energy Leasing on the Atlantic Outer Continental Shelf

DIVISIONS
ENERGY
GAS AND OIL
GEOLOGY AND MINERAL RESOURCES
MINED LAND RECLAMATION
MINERAL MINING
MINES
ADMINISTRATION

COMMONWEALTH OF VIRGINIA
*Department of Mines, Minerals and Energy*
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www.dmme.virginia.gov

June 29, 2018

James F. (Jim) Bennett, Chief
Office of Renewable Energy Programs
Bureau of Ocean Energy Management
45600 Woodland Road
VAM-OREP
Sterling, Virginia 20166

**Subject: Comments on Request for Feedback on the Proposed Path Forward for Future Offshore Renewable Energy Leasing on the Atlantic Outer Continental Shelf**

Dear Mr. Bennett:

The Virginia Department of Mines, Minerals and Energy (DMME) appreciates the opportunity to provide these comments as we see great potential in the development of an offshore wind industry in Virginia. There are a number of key activities underway that serve as momentum for the industry. DMME has supported development of the offshore wind resource since 2007 and serves as staff to the Virginia Offshore Wind Development Authority. The Authority (VOWDA) is a state legislative body with gubernatorial appointments established for the purposes of facilitating, coordinating, and supporting the development of the offshore wind energy industry, offshore wind energy projects, and related supply chain opportunities. The legislation that created VOWDA in 2010 tasked the authority with supporting Virginia offshore wind job creation and supply chain development in cooperation with relevant local, state, and federal agencies.

The mid-Atlantic region is the host of multiple offshore wind leases, designations of Wind Energy Areas (WEAs), and proposals for additional WEAs. The program for offshore wind development has been capably managed by BOEM for many years, and we support the continued use of offshore areas for this development. We look forward to our continuing relationship on DMME's renewable energy research lease on the Outer Continental Shelf and to

the full-scale build out of Virginia's existing WEA. As BOEM considers opportunities for expanding offshore wind leasing, we want to ensure that the process for our existing WEA is streamlined and will move forward expeditiously.

We also support BOEM's effort to evaluate additional areas for expansion of the offshore wind resource. DMME believes that such expansion may make the pipeline of potential offshore wind development more secure and attractive to the industry, and we respectfully request that Virginia be considered for additional WEAs. The attached map shows potential offshore wind energy expansion opportunities. While offshore wind would likely face the same restrictions as oil and gas activities in areas on the map marked as such, there remains an area large enough to double or even triple Virginia's current WEA.

The task of establishing the current WEA came about through multiple meetings with many stakeholders to determine where there were competing interests. BOEM worked collaboratively to find amicable solutions to de-conflict the area to the satisfaction of parties, including, but not limited to, military, shipping, barge, and commercial and recreational fishing interests. We believe that this same collaborative process should be followed to locate additional WEAs while ensuring that the interests of stakeholders are protected. Additional WEAs off Virginia's coast also would provide new lease opportunities to foster competition and accelerate and diversify Virginia's energy system.

The BOEM webpage for *Renewable Energy Path Forward on the Atlantic* lists a number of proposed factors for identification of offshore wind forecast areas. A number of these are addressed below:

**Exclusionary Factors:**

- *Areas prohibited by the Outer Continental Shelf Lands Act for leasing.*
    - There are no current areas for leasing prohibited by the Outer Continental Shelf Lands Act.
- *Department of Defense conflict areas*
    - While there are Department of Defense exclusion areas, there are also as yet unassessed areas that should not be excluded from consideration until an assessment has been done.
- *Charted marine vessel traffic routes*
    - The only currently charted marine vessel traffic routes are the vessel traffic lanes into and out of the Chesapeake Bay. DMME is aware of a concern raised in comments from the Port of Virginia that certain traditional and projected high-density maritime traffic routes are not considered an exclusionary factor by BOEM. The Port of Virginia is a key stakeholder and supporter of offshore wind development. DMME looks forward to working with the Port of Virginia and other users of the OCS ocean space to both expand

wind development opportunities and accommodate other essential maritime uses.

**Positive Factors:**

- *Areas greater than 10 nautical miles (nm) from shore*
  - All potential areas off the coast of Virginia are well over 10 nautical miles from shore.
- *Areas shallower than 60 meters (m) in depth*
  - All potential areas off the coast of Virginia are shallower than 60 meters in depth.
- *Areas adjacent to states with offshore wind economic incentives*
  - Virginia's General Assembly enacted legislation during the 2018 session declaring 5,000 megawatts of solar and wind generation, including offshore wind, in the public interest. We consider this a strong incentive for Virginia's electric utilities as they consider proposing offshore wind development plans to the utility regulators. This is important because Virginia's WEA is the only lease held by a publicly regulated investor-owned utility.

    In addition, DMME believes that a key factor in reducing the cost of the offshore wind resource is investment in domestic supply chain facilities. A steady stream of offshore wind development projects over decades would enable these supply chain investments to be made. As such, the prospects for additional Wind Energy Areas could help bolster the potential siting of offshore wind supply chain industries which in turn could help reduce the cost of the resource.

Thank you for this opportunity to comment on the Proposed Path Forward for Future Offshore Renewable Energy Leasing on the Atlantic Outer Continental Shelf. DMME strongly urges BOEM to consider all OCS areas where offshore wind is not already explicitly prohibited.

Sincerely,

John Warren
Director