VIRGINIA OFFSHORE WIND DEVELOPMENT AUTHORITY

Annual Report

October 15, 2011

Contents

I. Executive Summary

In 2010, the General Assembly established the Virginia Offshore Wind Development Authority ("VOWDA" or "the Authority"). The members were appointed and the Authority began meeting in December, 2010. Over the last 10 months, the Authority has identified and worked to achieve four main goals:

1. Virginia Offshore Industry Data: Facilitate the definition, collection, and dissemination of relevant met-ocean data, environmental data, and other information needed by Virginia offshore wind stakeholders, using existing, planned, or projected sources of data collection or activities.

2. Offshore Leasing, Permitting, Financing, and Regulation: Identify existing federal and state barriers to the development of the offshore wind industry in Virginia.

3. Virginia Offshore Job Creation and Supply Chain Development: 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.

4. Offshore Wind Project Siting and Development: Communicate and coordinate with stakeholders, including the Department of the Interior Bureau of Ocean Energy Management, Regulation, and Enforcement (DOI BOEMRE, subsequently renamed BOEM) Task Force to ensure 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.

To accomplish these goals the Authority engaged with the Bureau of Ocean Energy Management ("BOEM") to help facilitate the issuance of a Call for Information and Nominations (the "Call") for the commercial development of Virginia's Wind Energy Area ("WEA"). VOWDA also worked with the Department of Mines, Minerals, and Energy ("DMME") to collect relevant met-ocean and environmental data through contracts with members of the Virginia Coastal Energy Research Consortium ("VCERC"). The Authority also organized data regarding the

regulatory framework for electric rates in Virginia; the regulatory framework for permitting and siting an offshore wind development project in federal waters with associated state permits; and researched the funding mechanisms and resources and activities being conducted by other states with regard to establishing an offshore wind industry. The Authority received information from the Atlantic Wind Connection and Dominion Virginia Power ("Dominion") regarding transmission possibilities and costs for connecting offshore wind development onshore. Finally, the Authority conducted a survey of stakeholders to inform its efforts to identify data needs, identify regulatory or other policy barriers, formulate recommended actions, and confirm best practices to attract and support offshore wind development and its supportive supply chain. As a result of its activities, the Authority makes the following priority recommendations.

RECOMMENDATION 1: **Investment in facilities that will collect met-ocean and environmental data and incentives that will reduce development cost and schedule.**

a. Continue to work with the United States Department of Energy (DoE), the United States General Services Administration (GSA), the National Oceanic and Atmospheric Administration (NOAA) and other interested parties to establish agreements for the acquisition, restoration, upgrade and maintenance of the Chesapeake Light Tower (CLT). Establish ownership and operational responsibilities, cost sharing and data acquisition alternatives and short and long range plans for the continued use of the CLT as a state and national asset for offshore wind development support. Allocate funding to assist in refurbishing the basic structure of and erect a conventional met mast on the CLT, together with two vertical profiling LIDAR units.

b. Provide a mechanism (through tax credits and other means) to offset development and site characterization costs for developers participating in the Virginia Call. Such mechanism should provide that in exchange for offsetting development costs the recipient will commit to provide economic benefits to Virginia such as job creation, investment, or tax revenue.

RECOMMENDATION 2: **Increase the investment in the Clean Energy Manufacturing Incentive Grant to provide additional support for offshore wind supply chain manufacturers in Virginia.**

a. Ensure that a portion of the grant funding is directly tied to the supply of components and services that support the development of offshore wind energy project.

b. Require recipients of the grant to create jobs that directly benefit the Commonwealth.

ADDITIONAL RECOMMENDATIONS:

1. Provide for dedicated staff at DMME to support ongoing VOWDA operations and activities.

2. Fund the hiring of a director to coordinate offshore wind activities and aggressively identify federal and private funding sources for continued VCERC and VOWDA initiatives. Such sources to include satisfactory commercial arrangements approved by VOWDA for:

   a. Federal funding sources such as DoE, Department of Defense (DoD), NASA

   b. Private sources such as the developers seeking to secure lease blocks in the Virginia WEA, private groups seeking to promote the development of offshore wind, and other groups promoting offshore wind. Identify mechanisms by which the Commonwealth can participate with BOEM in establishing a relationship with those developers who are the most qualified and can bring jobs to Virginia.

3. Encourage the Virginia Port Authority to complete an analysis of the necessary infrastructure improvements required to enhance the attractiveness of Hampton Roads as a Mid-Atlantic Offshore Wind staging area.

4. Conduct a public opinion survey to determine the support for offshore wind considering various price impacts to electric rates, and other studies to assist the Commonwealth and the legislature establish policy decisions.

II. Mission

In 2010, the Virginia Offshore Wind Development Authority was created and vested with the powers set forth in § 67-1201 of the Code of Virginia. The Authority was established for the

purposes of facilitating, coordinating, and supporting the development of the offshore wind energy industry, offshore wind energy projects, and associated supply chain vendors, including:

- Collecting relevant metocean and environmental data,

- Identifying existing state and regulatory or administrative barriers to the development of the offshore wind energy industry,

- 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

- Ensuring that the development of such 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.

VOWDA is also charged with recommending ways to expedite the development of the offshore wind energy industry in the Commonwealth. VOWDA's enabling legislation specified that VOWDA is to be composed of 11 non-legislative citizen members appointed by the Governor. Of these, three members will be appointed by the Governor from a list of nine persons provided by the Secretary of the Navy[1], and one member must be a representative of the Virginia Commercial Space Flight Authority. VOWDA members are appointed for a four-year term. To maintain continuity of operations by ensuring all appointments do not expire in the same year, seven of the initial appointments will serve terms of less than four years. Four inaugural members were appointed for the full four years; four members are appointed for terms of three years; and three initial members for terms of two years. Thereafter all appointments shall be for staggered terms of four years.

VOWDA has a fairly broad authority to accept, hold, invest and administer moneys, grants, securities, or other property, to make and execute contracts with public and private entities as necessary, and to hire consultants, attorneys, financial experts and others as necessary to fulfill

[1] The members selected from the list provided by the Secretary of the Navy were added by legislation passed during the 2011 General Assembly session which went into effect on July 1, 2011. Therefore, those members have not served on the Authority to date. They are in the process of being appointed.

its mission. The Director of DMME serves as Director of the Authority, and DMME serves as staff to the Authority.

The legislation also requires the Authority to provide a report on its recommendations on what is needed to facilitate the transmission of offshore wind-generated power after review of the transmission study prepared by the investor-owned utility Dominion; and provide 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 Committees.

III. Summary of Activities

The Authority quickly set out to establish Goals and Objectives and developed a work plan to accomplish those goals and objectives. The Authority identified four main goals:

1. Virginia Offshore Industry Data: Facilitate the definition, collection, and dissemination of relevant metocean data, environmental data, and other information needed by Virginia offshore wind stakeholders, using existing, planned, or projected sources of data collection or activities.

2. Offshore Leasing, Permitting, Financing, and Regulation: Identify existing federal and state barriers to the development of the offshore wind industry in Virginia.

3. Virginia Offshore Job Creation and Supply Chain Development: 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.

4. Offshore Wind Project Siting and Development: Communicate and coordinate with stakeholders, including the Department of the Interior Bureau of Ocean Energy Management, Regulation, and Enforcement (DOI BOEMRE, subsequently renamed BOEM) Task Force to ensure 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.

In order to accomplish these goals, the Authority established specific objectives to assist with coordination with the BOEM Task Force to facilitate issuance of the Call for Information and Nominations for Commercial Leasing in the Wind Energy Area off the coast of Virginia; engage with other groups interested in offshore wind development in Virginia; determine existing barriers and possible solutions; identify data availability and needs; research policy initiatives on the state and federal level and determining whether changes are needed; identify potential grants and other funding sources available to support offshore wind development; and assess and raise awareness of the regulatory structure in Virginia. To accomplish these objectives, the Authority put into place a comprehensive work plan. A copy of the Authority's Goals and Objectives and Work Plan can be found in Appendix A.

Transmission

At its inaugural meeting on December 7, 2010, VOWDA received a Dominion transmission study to identify potential on-shore transmission deficiencies that may occur and need to be resolved to reliably interconnect offshore wind generation facilities to the transmission grid. This study was required by the VOWDA enabling legislation under Code of Virginia § 67-1206.

The study found that it would be possible to interconnect 1,500 MW of offshore wind with the existing transmission grid in Virginia Beach, Virginia. As output increases above 1,500 MW, transmission upgrades would be required. The cost to interconnect 2,700 MW is estimated to be $30 million, while the cost to interconnect 4,500 MW is estimated to be approximately $70 million. Such upgrade costs would be on the order of a few tenths of a percent of the total capital investment required to install the 2,700 MW – 4,500 MW used as the basis for the analysis and so would be financially inconsequential in determining the viability of a project. For purposes of the study, Landstown substation was chosen as the interconnection point due to a number of electrical advantages. Fentress substation was identified as a potential second injection point, which may be prudent for redundancy purposes as the maximum capability of the wind facilities approach and exceed 2,700 MW. Because no immediate transmission upgrades are required to accommodate near term offshore wind development, Virginia is well positioned to interconnect offshore wind energy. A copy of the full report is posted at www.dmme.virginia.gov/DE/VOWDA/DominionOffShoreWindStudyReport.pdf.

Additionally, the Authority received two presentations regarding additional studies being conducted to facilitate offshore shared interconnection facilities. The first presentation from

Dominion described a scoping study being performed that will focus on the potential development of a high-voltage transmission line from Virginia Beach out to the Atlantic Ocean that is expected to reduce costs and support potential multiple offshore wind projects off of Virginia's coast. Dominion's preliminary scoping study, which will be completed by late 2011, will include technology solutions; reliability, operation and maintenance issues; power flow and grid reliability; configuration alternatives for trunk lines to shore; and offshore transmission infrastructure construction costs. Dominion will work with PJM Interconnection through its Regional Transmission Expansion Planning process to complete this study.

The second presentation was received from the Atlantic Wind Connection (AWC) describing the right-of-way application AWC filed with the BOEM and the Federal Energy Regulatory Commission (FERC) to support construction of an offshore transmission system that would interconnect the four Mid-Atlantic WEAs. This project would enable up to 7,000 megawatts of offshore wind capacity to be connected to the PJM system. It also would increase PJM system reliability and reduce congestion in the heavily congested corridor between Virginia and the northern New Jersey/New York City area. On June 1, 2011, BOEM hosted a Webinar briefing and teleconference to discuss the AWC proposal with state task force representatives from New York, New Jersey, Delaware, Maryland, and Virginia. Webinar briefing materials are posted at www.boemre.gov/offshore/RenewableEnergy/StateActivities-RegionalProposals.htm. The next step for BOEM in moving forward in processing the AWC unsolicited application is to issue a request for information to determine if competitive interest exists along the AWC proposed right-of-way lease blocks and to identify environmental issues and potential conflicts with other ocean uses.

In order to comply with its enabling legislation, VOWDA has included its preliminary analysis as to what is needed to facilitate the transmission of offshore wind-generated power as part of this Annual Report. Once the results of the Call have been assessed, VOWDA will have a clearer understanding as to the amount, timing, and location of the capacity that would need to be brought onshore; and at that time, the Authority will complete a full assessment and provide final recommendations. In the interim, VOWDA will continue to support the development of transmission resources that enable and expedite the development of offshore wind in Virginia in a cost-effective (to both project owners and ratepayers) and environmentally sensitive manner.

Chesapeake Light Tower

On March 17, 2010, the U.S. GSA issued a notice of surplus property determination for the CLT, which is located approximately 24 km (13 nautical miles) east of Virginia Beach.

On April 7, 2010, NASA-Langley researchers and representatives from the Virginia DMME, the VCERC, and the City of Virginia Beach discussed the importance of the CLT as a research resource that would benefit offshore wind development. At that time, all agreed that the City was in the best position to move forward with beneficial public use of the tower.

Virginia Beach subsequently approved $50,000 for an engineering analysis to determine the feasibility of using the CLT as a potential site for anemometry equipment to collect offshore wind data and other purposes to the benefit of Virginia Beach. This engineering report estimated the costs for structural repairs and upgrades at over $2 million. Because of the cost of required structural upgrades, life safety upgrades required by the Coast Guard, and a requirement that the City maintain the CLT as an aid to navigation in perpetuity, Virginia Beach decided against purchasing the CLT.

VOWDA considered the value of the CLT with respect to providing the baseline met-ocean and environmental data that would facilitate the development of offshore wind in Virginia. As part of this analysis VOWDA organized presentations by the VCERC, the DoE, and a third party private engineering consultancy to discuss the relevance of the CLT to supporting this stated objective of VOWDA. These discussions included not only the technical merits of the CLT but the potential structures under which the CLT could be purchased, owned, and maintained so as to support VOWDA's mission.

During its presentation, the DoE informed VOWDA that it sees the CLT as having value as a national resource to collect met-ocean and environmental data, and as a result, the DoE has requested GSA to delay surplusing the CLT so that DoE and other stakeholders can consider its future important use as a data collection source. VOWDA will work with the newly formed federal-state working group, representing about a half dozen users and potential users of data, to explore options to preserve the facility as a research and data collection platform. In interfacing with the working group, VOWDA will seek to ensure the objectives and needs of Virginia are represented in fostering the development of offshore projects and in expanding the offshore supply chain in Virginia.

Research Lease

Virginia submitted a draft research lease application to the BOEM in January 2011 and revised its application in September. The lease application proposes to collect and develop needed wind resource data and met-ocean design data that could advance the timetable for commercial offshore wind development. In order to hold a renewable energy lease, DMME must meet three qualifications – legal, technical, and financial. BOEM has legally qualified Virginia and is currently reviewing the technical and financial qualifications of Virginia's application.

VOWDA has agreed to help manage the activities to be undertaken on the proposed research lease, and the technical qualifications of VOWDA's board members were submitted as supporting information to Virginia's application. DMME will continue to leverage the expertise of the VOWDA Board members in identifying technical qualifications to hold the lease.

Cost Comparison of Offshore Wind Generation

VOWDA discussed and considered the general lack of empirical data for establishing the cost of offshore wind in the U.S. given several factors:

1. There are no projects currently operating in the U. S. and estimates of the cost of offshore wind power are derived from recently completed projects in Europe that lack significant operating history.

2. The cost of constructing and operating projects in the European market is in a state of flux due to competing factors.

    a. The use of larger turbines increases economies of scale and reduces foundation costs per MW of installed capacity.

    b. The development of a local supply chain and the increased availability of service vessels have lowered both the installed cost and the ongoing operating costs of facilities.

    c. Experience gained in allocating project risk and structuring commercial project agreements has reduced the financing cost for offshore wind in projects.

d. Moving projects to deeper water has required the use of different foundation and tower technologies that has increased the installed cost of facilities.

VOWDA considered several reports estimating the cost of offshore wind. Dominion prepared a report for VOWDA summarizing the cost of electricity from offshore wind to the cost of electricity produced from relatively mature technologies – coal, nuclear, biomass, solar. The cost of offshore wind included in the Dominion report was based on the U.S Energy Information Administration's (EIA) Annual Energy Outlook (AEO) 2011. In its 2011 Outlook, the EIA estimated that an offshore wind plant built in the U.S. would have a capital cost of total system levelized cost (in 2009 dollars) of $243 per MW of generation. The EIA report stated "While offshore wind plants have been built in Europe, there have only been proposals in the United States, with final permitting only recently issued of the first of these proposal. The updated costs, some 50% higher than the AEO 2010 estimates, are consistent with substantial first-of-a-kind costs that would likely be encountered when building projects in the Unites States, which largely lacks the unique infrastructure required to support this type of construction". The EIA's 2011 AEO goes on to identify the importance of establishing a local supply chain and economies of scale as factors that will reduce offshore wind energy costs.

VOWDA also considered cost information provided by the VCERC in its final offshore wind studies report that estimated the cost of offshore wind to be 50% below the EIA's estimate the "first-of-a-kind" cost for offshore wind. During discussions with VOWDA, VCERC indicated that its estimates are based on expected technology advances, economies of scale, capital costs based on regulated rate recovery, and the development of a local supply chain, most of which are likely to require the development of utility scale projects of between 1000 and 2000 MW before they occur.

In addition, VOWDA considered that the above methodology for comparing the cost of offshore wind with other sources of generation does not include such externalities as job creation, technology development, CO_2 reduction, land use, and the need for and cost of transmission infrastructure.

Mid-Atlantic Regional Environmental Assessment

In February 2011, BOEM issued a Notice of Intent (NOI) identifying areas of the Outer Continental Shelf (OCS) offshore the Mid-Atlantic States of New Jersey, Delaware, Maryland, and Virginia that appeared to provide the most suitable opportunity for wind energy development, while presenting the fewest apparent user conflicts.

The NOI also announced that BOEM would prepare a regional environmental assessment (EA) to analyze the potential impacts from leasing, site characterization, and site assessment in and around the wind energy areas off the coasts of those states.

The Mid-Atlantic Draft Regional EA was released in mid-July 2011 and open for public comment until August 11, 2011. VOWDA submitted public comments that supported BOEM's preferred alternative.

VOWDA supported the preferred alternative because it reflected the results of months of research and input from the VCERC and numerous other stakeholders, including academic, government, military, and private sector maritime interests. The 22 OCS lease blocks and 4 partial blocks included in that alternative are the result of conversations by all parties, and after much consolidation and ceding of many of the lease blocks originally assessed as having economically attractive wind resources. VOWDA fully supports the designation of the area defined as Alternative A in the Environmental Assessment as the Virginia Call Area as BOEM moves forward with leasing and development off of Virginia's coast.

Stakeholder Survey

To inform its efforts to identify data needs, identify regulatory or other policy barriers, and recommend actions, VOWDA commissioned a survey of stakeholders in the offshore wind energy industry and supply chain. The survey identified or confirmed major policy and economic drivers and other tools believed to be best practices to attract and support offshore wind development and its supportive supply chain. Of the twenty-two responses received, the major barriers fell into three distinct categories:

I. **Demand** – Measures to address lack of policy mandates that support/require purchase of offshore wind

   The need for:

   a. Renewable Portfolio Standard (RPS)
      i. Mandatory
      ii. Limited to Virginia Resources
   b. Feed-in Tariff/Power Purchase Agreement (PPA)
   c. Federal Energy Policy
   d. State Policy Finding Offshore Wind to be in the Public Interest

II. **Project Costs** – Measures to reduce capital expenditure costs and make wind generation competitive with traditional generation

The development of:

a. Investment Tax Credits/Production Tax Credits
b. Loan Guarantees
c. Grants
d. Installed Cost Reduction Study

III. **Developer Cost** – Measures to lower pre-development costs and reduce developer risk

Analysis of:

a. Data
b. Wind
c. Weather
d. Avian and Marine Life
e. Environmental impacts
f. Met tower funds matching

Other drivers and barriers that came out of the survey include the need for additional incentives to attract supply chain, workforce training to support offshore development and the manufacturing of components.

Additionally, suggestions were made for VOWDA to conduct public opinion polls to determine willingness to pay increased fees for offshore wind, conduct economic impact study and a jobs creation/economic development benefit study to quantify the benefits provided by offshore wind.

The survey also identified barriers that are currently being addressed through DMME contracts with the Virginia Tech Advanced Research Institute (VT-ARI) and James Madison University (JMU). These studies involve the collection of data and subsequent analyses and modeling to support reductions in the cost of developing an offshore wind project in Virginia. These new data sets address geotechnical characteristics of the sea bed, stakeholder enthusiasm and concerns, the identification and characterization of sites that may support met towers and/or test pads for new turbine technologies and permitting packages to help guide the permitting of these sites.

IV. Federal Offshore Wind Developments and Actions

There are two principal federal agencies with responsibilities for the regulation and development of offshore renewable energy. BOEM issues leases and grants for both OCS wind and hydrokinetic projects. BOEM also permits the construction and operation of wind facilities, while the FERC will permit the construction and operation of hydrokinetic facilities on BOEM-issued wave and current leases.

As required by the Energy Policy Act of 2009, BOEM will issue leases on a competitive basis unless it determines that no competitive interest exists. After a lease is acquired, the developer must submit and receive approval of appropriate plans (wind) or license applications (hydrokinetic). At the end of the lease term, the developer must decommission facilities in compliance with BOEM regulations.

BOEM and the DoE signed a MOU to address numerous offshore renewable energy issues of mutual interest; and DoI and DoE issued the first interagency plan on offshore wind energy, demonstrating a strong federal commitment to expeditiously develop a sustainable, world-class offshore wind industry in a way that reduces conflict with other ocean uses and protects resources. BOEM is also working with other interested federal agencies to establish MOUs to coordinate OCS renewable energy activity. BOEM has authority to lease areas of the OCS for wind development but lacks the authority to issue one-stop permitting; other federal agencies must be consulted.

BOEM also has the authority to issue Rights-of-Way (ROW) for offshore transmission lines linking OCS renewable energy installations to facilitate efficient interconnection to the onshore electrical grid. To date, BOEM has received one application for such a ROW—the Atlantic Wind Connection project entailing a 750-mile backbone transmission line running about ten miles offshore from New York to Virginia.

In February 2011, Secretary of the Interior Salazar and Secretary of Energy Chu traveled to Virginia Beach to announce the “Smart from the Start” wind energy initiative that would identify areas for wind energy leasing proposals, streamline the process for siting, leasing and construction of new projects and expedite environmentally responsible development of wind energy projects off the Atlantic coast. The two Secretaries also announced a series of grants to help reduce the cost of wind energy. See more details, below.

In coordination with the relevant states, BOEM identified WEAs offshore the Atlantic coast that appear most appropriate for renewable energy development and began steps to make the permitting process for projects more efficient. Secretary Salazar and the Governors of 11 east coast states signed a MOU establishing the Atlantic Offshore Wind Energy Consortium in May 2010. The Consortium has been working with BOEM on regional issues relating to siting, data and science, and authorization of renewable energy projects on the OCS.

To support the goals of the National Offshore Wind Strategy, the DoE released three solicitations representing $50.5 million in grants over five years, to develop breakthrough offshore wind technology and to reduce specific market barriers to its deployment. Two successful proposals primed by Virginia-based companies were awarded a total of $4.6 million under this competition (details below), capturing nearly 10% of this DoE funding.

Mid-Atlantic Regional Environmental Assessment

In February 2011, BOEM issued a NOI identifying areas of the OCS offshore the Mid-Atlantic States of New Jersey, Delaware, Maryland, and Virginia that appeared to provide the most suitable opportunity for wind energy development, while presenting the fewest apparent user conflicts.

The NOI also announced that they would prepare a regional EA to analyze the potential impacts from leasing, site characterization, and site assessment in and around the wind energy areas off the coasts of those states.

The Mid-Atlantic Draft Regional EA was released in mid-July and open for public comment until August 11, 2011. BOEM is currently considering comments received and is expected to issue the final Regional EA some time this fall.

BOEM Activities Leading to OCS Leases

BOEM has established 11 Intergovernmental Task Forces to help facilitate the coordination of federal, state, local and tribal governments in intergovernmental communications regarding OCS renewable energy activities. The Intergovernmental Task Forces created so far include: Maine, Massachusetts, Rhode Island, New York, New Jersey, Delaware, Maryland, Virginia, North Carolina, Oregon, and Hawaii.

BOEM has received unsolicited lease applications for areas off of the coast of New Jersey, North Carolina, Virginia and an area of mutual interest designated through a memorandum of understanding off of the coasts of Rhode Island and Massachusetts. They have issued interim policy limited leases off the coasts of Delaware (where they have issued one) and New Jersey (where they have issued three). Interim policy limited leases may only be used for data collection and technology testing and do not convey any preferential access for future project development. Virginia has applied for a Research Lease for those purposes. BOEM is also working with industry toward issuance of additional interim policy leases off the coasts of Georgia and Florida.

BOEM has issued Requests for Interest for Delaware, Maryland and Massachusetts. In Delaware, BOEM issued a Determination of No Competitive Interest (DONCI) in April, 2011. Recently, Delaware's Congressional Delegation and Governor Jack Markell, sent a letter to the Department of the Interior asking for NRG and Bluewater Wind's turbine project off the coast of Delaware to be named a high priority project. If the project is given that designation, the federal government would expedite the permitting process. Secretary Salazar has agreed to this approach.

In Maryland, the RFI identified a number of conflicts in the originally designated WEA. BOEM is working through the Intergovernmental Task Force to redesign the WEA before releasing their Call. In Massachusetts, the BOEM and the Massachusetts Office of Energy and Environmental Affairs are coordinating closely to develop a path forward for commercial offshore leasing.

New York has a collaborative of private and public (state and city) entities being led by the Long Island Power Administration (LIPA) and Consolidated Edison Company (ConEd). The collaborative is considering wind power development on the OCS at a site 13 miles off the Rockaway Peninsula. On June 30, 2009, the collaborative issued a Request for Information from developers, equipment manufacturers, and other interested parties. The comment period closed on August 31, 2009. New York Power Authority (NYPA) filed a lease application with BOEM. The application is for the area of water 13+ miles south of Rockaway Beach that was originally identified by the ConEd-NYPA-LIPA Offshore Wind Collaborative for development of a 700 MW offshore wind farm. NYPA officials have stated that their strategy is to secure a Determination of No Competitive Interest from BOEM by spring 2012, and then release a solicitation for bids from private developers after they have completed several site assessment studies. Some combination of NYPA, Con Edison and/or LIPA would provide both a lease and a revenue contract to the winning bidder(s). The NYPA lease filing also contains a number of

letters of support from state government entities, the Port Authority of NY & NJ, the Bloomberg Administration, and environmental groups.

On September 27 NYPA's board of trustees decided not to award any power purchase agreements through its Great Lakes Offshore Wind process because of cost as compared to other renewable alternatives. "NYPA staff stated the Great Lakes Offshore Wind RFP process showed it was not fiscally prudent now to pursue a large-scale offshore wind project in those waters," Connie M. Cullen, deputy director of media relations, said in an email. "NYPA is focusing on reinforcing our transmission system to integrate more land-based wind upstate and Canadian hydropower, and also implement clean energy and energy efficiency projects to support the state's energy and economic development goals. In addition, NYPA will continue to purchase renewable energy, at the request of our customers, on a competitive basis."

In Virginia, BOEM has conducted three Task Force meetings and an additional meeting of maritime stakeholders along with Task Force members to try and resolve use conflicts in the originally designated WEA. With the information received at these meetings, along with comments from the Mid-Atlantic Regional EA, BOEM is currently finalizing the parameters of the WEA to be published in the Call which is expected to be issued some time this fall.

V. State Activities

Virginia is well positioned for offshore wind generation and has great potential to be home to the primary Mid-Atlantic offshore wind supply chain cluster, and the jobs that would bring. However, other states are moving toward the same goals. This section of the report is a summary of policies and activities in Virginia and other states on the East Coast that are presently competing to attract and support a vibrant offshore wind industry and supply chain.

Virginia Incentives, Policies and Favorable Attributes

- **Clean Energy Manufacturing Incentive Grant:**
  - Total of $36M of performance grants authorized
  - $50 M investment and guarantee of 200 jobs in non-distressed localities to qualify
  - Thresholds can be reduced in high unemployment localities
  - $10 M investment and guarantee of 30 jobs for wind energy suppliers

- **Voluntary RPS:**
  Establishes a goal to generate 15 percent of electricity from renewable resources by 2025. Currently, renewable energy resources can be purchased outside the state of Virginia and still qualify against the RPS target. The RPS is voluntary and offers financial incentives to investor owned utilities for meeting milestones toward the 15 percent goal. Offshore wind generation counts 3x for Renewable Energy Credits (RECs) for Virginia RPS. Non-investor owned utilities/cooperatives are not, however, subject to the voluntary RPS.

- **HB1912 (2011):**
  Commonwealth Energy Policy – The Virginia State Corporation Commission (SCC) is to consider the effect of a proposed renewable energy generation facility on economic development. Expressly included is the "furtherance of the economic and job creation objectives of the Commonwealth," among the factors the SCC must consider when deciding whether or not to approve a proposed electric generation facility. Makes clear that the SCC must consider the rate impact of renewable resources before approving reliance on renewable resources.

- **Streamlining of permitting in state waters – Virginia's Permit by Rule:**
  The Department of Environmental Quality has developed a permit by rule for the construction and operation of electrical generation facilities that have a maximum capacity of 100 megawatts and that generate electricity only from wind. A small renewable energy project for which such a permit by rule has been issued will be exempt from requirements that the SCC permit its construction and operation.

- **Hampton Roads Harbor:**
  The Chesapeake Bay is the largest, natural, ice-free estuary in North America. At 50' deep, the Hampton Roads harbor can easily handle the largest container vessels afloat. This waterway also has the approval to be dredged to 55' to handle the next generation of vessels. Hampton Roads boasts the deepest water on the U.S. East Coast, a huge competitive advantage as the size and depth requirements for vessels continue to increase.

- **Location:**
  Hampton Roads is located in the center of the Mid-Atlantic region, where 70 percent of U.S. offshore shallow water wind resources lie. These resources are easily accessible by the ports in Hampton Roads, which could export large components such as foundations, towers and turbines up and down the entire East Coast.

- **Transmission Infrastructure:**
  Virginia has existing transmission infrastructure on-shore that can accommodate near term offshore wind development without requiring immediate upgrades. A study completed by Dominion found that up to 1,500 MW of offshore wind energy could be interconnected with the existing transmission grid. Future offshore wind development would require minimal upgrades to the transmission grid estimated at $30-70 million for 2,700-4,500 MW, respectively.

- **Intellectual Capital**:
  For nearly five years, the VCERC, in particular its members from JMU and VT-ARI have supported offshore wind development by conducting the appropriate studies to determine feasibility and identify options and opportunities. DMME has current contracts valued at $1.4 million with the universities for research to support and enable offshore wind development, including:

  - Collecting metocean and environmental data
  - Ensuring development is compatible with other ocean uses and avian/marine wildlife
  - Investigating and demonstrating advanced technology to reduce the project and development costs

- **Successful Private Partners:**
  Two projects in Virginia aimed at speeding the development of offshore wind farms were awarded competitive federal funding in September. The DoE awarded $4.1 million to Alstom Power Inc. and $500,000 to Dominion. Both companies are based in Richmond. Alstom Power will use the funding to develop an advanced turbine control system. Dominion will conduct cost modeling and analysis to demonstrate the impact of innovative concepts on reducing the cost of energy of a hypothetical 600 MW offshore wind project.

  Maersk and Apex Wind, a Virginia company, have recently announced a joint venture to pursue offshore wind, and Northrop Grumman and Gamesa have established a partnership to reduce the cost of turbines.

  The Virginia Offshore Wind Coalition is an organization of developers, manufacturers, utilities, localities, business and environmental groups, and other organizations and individuals who have an interest in offshore wind who are working together to provide a

unified voice to legislators, regulators and prospective industry to develop wind offshore Virginia and support its intrinsic demand for a supply chain that comes with it.

Recent Steps by Other Atlantic States

Maine

- Established three goals for wind energy development:
  - At least 2,000 MW of installed capacity by 2015
  - At least 3,000 MW of installed capacity by 2020, of which there is a potential to produce 300 MW from facilities located in coastal waters or offshore
  - At least 8,000 MW of installed capacity by 2030, of which 5,000 MW should be from facilities in coastal waters or offshore

- The first two goals were established in April 2008 (L.D. 2283), and the third was established in April 2010

- The Maine Public Utilities Commission (PUC) issued a request for proposals in September 2010 for long-term contracts to supply capacity, energy and RECs from offshore wind energy projects (pilot) or tidal energy. Bids were due May 1, 2011. Maine PUC has authority to approve one or more PPAs for up to 30 MW.

- Passed legislation streamlining the permitting process for companies wanting to test new offshore wind technologies all along Maine's coastline.

- In December 2009, Maine announced the selection of the following three offshore wind power test sites: Boon Island, Damariscove Island and Monhegan Island.

- These sites were selected by a consortium of government and private agencies and are in state waters. The sites will be used to test new technology that generates electricity from waves.

Massachusetts

- On November 22, 2010, PUC approved the power purchase agreement between National Grid and Cape Wind for 50% of the 468 MW total capacity of the Cape Wind project.

- Cape Wind is currently in discussions with NStar and other local utilities with respect to the purchase and sale of some or all of the balance of the unsold capacity.

- Cape Wind has completed its permitting process; however, the successful award of the permits is subject to appeal.

- Cape Wind has executed its interconnection agreement with the National Grid and is prepared to proceed with the interconnection work once all non-appealable permits have been issued.

Rhode Island

- RI selected Deepwater Wind ("DW") as its preferred developer pursuant to a Joint Development Agreement ("JDA") for the development and completion of the 35MW Block Island demonstration project and the larger RI Sound projects.

- The JDA requires DW to secure all required permits, lease rights, transmission agreements, construction contracts, and to expend a specified amount of development capital and create a specified number of local jobs in carrying out its obligations.

- RI agrees to help the project secure state and federal permits, secure a power purchase agreement of at least 15 years, and secure the required transmission interconnection agreements.

- RI also agrees not to provide similar support to any other offshore wind project until the RI Sound project has completed development and raised debt and equity.

- PUC approved power purchase agreement for the Block Island project between National Grid and Deep Water Wind in August 2010.

- Recently, both RI and MA have acknowledged DW's preferred status in the Federal waters adjacent to both RI and MA that was originally included in the JDA.

New Jersey

- Offshore Wind Economic Act passed in June 2010

- Mandatory RPS requires renewable of 22.5% by 2020

- Offshore Renewable Energy Credit (OREC)
  - Suppliers of electricity to retail customers will be required to hold ORECs
  - Quantity required will be set by Board of Public Utilities (BPU) -- % of total KWH sold
  - Total OREC amount will support development of 1,100 MW offshore wind
  - Alternative Compliance Payment price will be set also by BPU
  - Each project must demonstrate favorable cost/ benefit as part of approval process.

- Tax Credits
  - 100 % tax credit for capital investment of $50 MM or more for offshore wind
  - Total tax credit capped at $100MM unless increased by State's Economic Development Authority
  - May be increased as long as all tax credits for all state programs do not exceed $1.5B

- New Jersey is considered a prime location for offshore wind because of the relatively shallow waters along its coast and because of its program to award certificates to developers of wind farms and its incentives of up to $100 million in tax credits to manufacturing segments that locate in the state. Under the Offshore Wind Economic Development Act, the developers propose the price they will receive for the power the wind turbines produce. It will be up to the state agency to determine whether the cost is justified when weighed against other factors, such as generating cleaner power, jobs an offshore wind industry could generate and increasing reliability of the regional power grid. The price would remain unchanged for 20 years. According to the developers' proposal, the agency also would establish an offshore wind carve-out, laying out a schedule of how many credits power suppliers would have to buy from the offshore wind farms, similar to a scheme that has helped the solar energy sector flourish in New Jersey. If the state buys into the project timeframe, it would likely establish a clearinghouse to manage the stream of revenue from suppliers who are obligated to buy the certificates until December 2013. The clearinghouse also would oversee the payments from the regional power grid for the electricity and capacity provided by the wind farms, payments that are supposed to go back to ratepayers.

- New Jersey also had a rebate program to support the development of offshore wind facilities needed to achieve their Energy Master Plan goal of at least 1000 MW by 2012. In order to meet this target, they identified as a critical next step, the installation of meteorological towers in the areas proposed for offshore wind farms. The towers could collect wind and other data that is critical to project design along with ecological data to

be used in the permit application process. They offered rebates up to $4 million per meteorological tower and limited it to one rebate application per entity. If the installation cost of the meteorological tower exceeded $4 million, the developer was responsible for the additional cost.

Delaware

- Offshore wind MWH counts 3.5x for RECs for Delaware RPS

- PUC approved contract for Delmarva Electric to purchase 200 MW from Bluewater Offshore Wind project purchase.

- Bluewater was recently granted an extension to secure the necessary financing to proceed with the development of the project.

Maryland

- Governor O'Malley proposed mandatory PPAs to pass-through higher cost of 400-600 MW of offshore wind; was not passed in the General Assembly in 2011 but defeat was by one vote and it is expected to be reconsidered in 2012.

North Carolina

- Proposed legislation introduced establishes a mechanism for the North Carolina Utilities Commission to require utilities to enter into long-term contracts for 2500 MW of offshore wind capacity to be built over a period of seven to ten years.

VI. Recommendations

Virginia has taken a thoughtful approach to preparing for offshore wind development and cultivating the industry to support offshore wind. Specific actions include: establishing a voluntary RPS (allowing for out-of-state purchases), investing in manufacturing grants to support the supply chain community, and requiring the SCC to consider the economic development impact of projects in determining their cost effectiveness. These efforts have presented an environment for private development off the coast of Virginia provided the cost of offshore wind can be shown to be competitive with alternative sources of energy.

With the establishment of the VCERC and VOWDA, Virginia has established a framework where research and development to support offshore wind development and policy and stakeholder collaboration will be accomplished efficiently. In order to successfully continue with this approach, VOWDA recommends as their top two priorities that Virginia consider 1) reducing development costs through investments in met-ocean instrumentation and incentives, and 2) investing in additional manufacturing grants that will help with the recruitment of the supply chain to support offshore wind development. Specifically, VOWDA makes the following recommendations:

RECOMMENDATION 1: **Investment in facilities that will collect met-ocean and environmental data and incentives that will reduce development cost and schedule.**

a. Continue to work with the United States Department of Energy, the United States General Services Administration, the National Oceanic and Atmospheric Administration and other interested parties to establish agreements for the acquisition, restoration, upgrade and maintenance of the Chesapeake Light Tower (CLT). Establish ownership and operational responsibilities, cost sharing and data acquisition alternatives and short and long range plans for the continued use of the CLT as a state and national asset for offshore wind development support. Allocate funding to assist in refurbishing the basic structure of and erect a conventional met mast on the CLT, together with two vertical profiling LIDAR units.

b. Provide a mechanism (through tax credits and other means) to offset development and site characterization costs for developers participating in the Virginia Call. Such mechanism should provide that in exchange for offsetting development costs the recipient will commit to provide economic benefits to Virginia such as job creation, investment, or tax revenue.

RECOMMENDATION 2: **Increase the investment in the Clean Energy Manufacturing Incentive Grant to provide additional support for offshore wind supply chain manufacturers in Virginia.**

a. Ensure that a portion of the grant funding is directly tied to the supply of components and services that support the development of offshore wind energy project

b. Require recipients of the grant to create jobs that directly benefit the Commonwealth.

ADDITIONAL RECOMMENDATIONS:

1. Provide for dedicated staff at DMME to support ongoing VOWDA operations and activities.

2. Fund the hiring of a director to coordinate offshore wind activities and aggressively identify federal and private funding sources for continued VCERC and VOWDA initiatives. Such sources to include satisfactory commercial arrangements approved by VOWDA for:

   a. Federal funding sources such as DoE, DoD, NASA

   b. Private sources such as the developers seeking to secure lease blocks in the Virginia Wind Energy Area, private groups seeking to promote the development of offshore wind, and other groups promoting offshore wind. Identify mechanisms by which the Commonwealth can participate with BOEM in establishing a relationship with those developers who are the most qualified and can bring jobs to Virginia.

3. Encourage the Virginia Port Authority to complete an analysis of the necessary infrastructure improvements required to enhance the attractiveness of Hampton Roads as a Mid-Atlantic Offshore Wind staging area.

4. Conduct a public opinion survey to determine the support for offshore wind considering various price impacts to electric rates, and other studies to assist the Commonwealth and the legislature establish policy decisions.

VII. Future Goals/Activities

BOEM is expected to issue a Call for commercial development of Virginia's WEA in the fourth calendar quarter of 2011. Two unsolicited applications for commercial leases off of Virginia's

coast were submitted in September 2009 by developers Seawind Renewable Energy and Apex Wind Energy, both Virginia-based companies.

Private companies, some with financial support from DMME grants, currently are engaged in several aspects of Virginia offshore wind development and have expressed interest in test sites identified by the VCERC. Hence it is expected that the federal Call will attract responses from more than one developer interested in portions of the Virginia WEA.

Development of offshore wind will be the first priority for consideration in the federal review process. However, the Commonwealth of Virginia has submitted an application for a research lease, which is intended as a vehicle to accelerate and assist private development of the Virginia WEA, and which will be reviewed by BOEM as a secondary priority if there is commercial interest in developing the same portions of the WEA.

VOWDA's strategy and work plan for 2012 will be adjusted as the results of the Virginia Call are identified. Activities and other specifics proposed in the Virginia research lease application also may need to be modified to adapt to the changing needs of private wind industry companies, and to the results of the Virginia Call.

There also are known activities and needs that will shape future goals and the activities in the VOWDA work plan:

- A scoping study is being performed by Dominion that will focus on the potential development of a high-voltage transmission line from Virginia Beach out to the Atlantic Ocean that could reduce costs and support potential multiple offshore wind projects off of Virginia's coast. The preliminary scoping study, which will be completed by late 2011, will address technology solutions; reliability, operation and maintenance issues; power flow and grid reliability; configuration alternatives for trunk lines to shore; and offshore transmission infrastructure construction costs.

- AWC continues to proceed with the development of its facilities to integrate offshore Virginia wind farms with other areas within PJM. VOWDA will continue to communicate with AWC so as to monitor the status of their activities and consider the benefits of their proposed development plans.

- A high priority will be to participate in the development of a comprehensive plan for refurbishing and outfitting the CLT and for the placement and outfitting of new offshore monitoring platforms to supplement the CLT measurements. This will require coordination with DoE, NOAA, and other federal agencies to develop federal-state partnership for implementing Phase I recommendations for refurbishing and outfitting the CLT.

- VOWDA will continue to review reports and other information collected by JMU and VT-ARI, monitor activity by private sector entities and other coastal states, and regularly re-examine tasks in the work plan, including:

    - Building a web site to communicate publicly the details of VOWDA's activities and to provide a venue for disseminating approved materials related to offshore wind and ultimately a portal for sharing data products.

    - Establishing a clearinghouse of information on wind resource data, economics and environmental impacts, and information characterizing the state and federal regulatory framework.

    - Provide technical support to the Virginia Economic Development Partnership and identify state financial incentives that might be available to help commercialize emerging technologies that can create Virginia jobs. This includes identifying leading candidate businesses and helping to connect with state and federal support programs, particularly focused on Tier 3 and Tier 4 suppliers who can export to Tier 1 and Tier 2 integrators now expanding in European offshore wind supply chains.

    - Examine the development of a strategic or ocean management plan for Virginia waters, that includes uses such as offshore wind, and monitor the Coastal and Marine Spatial Planning process for federal waters off the coast of Virginia and identify opportunities for input.

    - Identify available grants and other financing mechanisms to support offshore wind development and support, endorse and possibly participate in federal grant applications and state efforts that support projects that improve the offshore

wind value chain, reduce the delivered cost of power, and create job opportunities.

- Continue to advocate on behalf of the Commonwealth that Virginia has the infrastructure, supply chain, resources, location, and can-do spirit that will make Virginia an important host to and partner for offshore wind developers.

APPENDIX A

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 met-ocean 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 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>VA Offshore Industry Data:</u> Facilitate the definition, collection, dissemination of relevant met ocean data, environmental data, and other information needed by VA 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[2];
    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;

[2] 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

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.

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

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 VA 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>VA 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 VA 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 VA 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.

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 A - VOWDA Work Plan

❍ Not started
■ On Plan
✓ Complete
◆ Issues
◆ Behind Schedule

Date of Report	Jun 14, 2011

Name	VOWDA Work Plan				Sponsor	VOWDA
Start Date	6/14/11		End Date	5/31/12	Team Lead	Art Moye

VOWDA Work Plan and timeline

Not Started ❍ | On Plan ■ | Complete ✓ | Issues ◆ | Behind Schedule ◆

Item No	Project	Start Date	End Date	% Complete	Status	Dependencies	Lead Responsible	Staff Assigned	Deliverable	Comments
	Administrative									
1.01	Establish an official seal	6/14/11					Art Moye	Ken Jurman		needed for letterhead, etc.
1.02	Develop By-laws	6/14/11	7/26/11				Joan Bondareff	Kerri Nicholas		needed for procees/structure
1.03	Establish a protocol for communicating with policymakers	6/14/11	7/26/11				Art Moye	Cathie France		working with Governor's Office
1.04	Prepare Annual Report	9/14/11	10/15/11			6.04	Art Moye	Cathie France		required by statute to be submitted in October each year and include policy recommendations
	Expedite Release of BOEMRE Call for Virginia	**6/14/11**	**ASAP**				**Art Moye, Joan Bondareff**	**Cathie France, Ken Jurman**	**Facilitate necessary data/discussions to get call out ASAP**	
2.01	Facilitate resolution of shipping channel conflicts with proposed offshore lease blocks	6/14/11	release of the Call				Art Moye, Joan Bondareff	Cathie France, Ken Jurman		
2.02	Support development of a strategic or ocean management plan for VA waters, that includes uses such as offshore wind, and participate in the Coastal and Marine Sapatial Planning proces for federal waters off the coast of VA, as requested						Joan Bondareff, Bob Matthias	George Hagerman, Ken Jurman	May need to provide data, assistance during PARs being conducted by Coast Guard, as well as BOEMRE task force	
2.03	Establish a designated liaison to the VA BOEMRE Task Force	6/14/11	6/14/11				Bob Matthias		Represent VOWDA to Task Force and bring back information to keep VOWDA Board informed	
	Engagement with other groups interested in Offshore Wind Development in VA	**6/14/11**	**5/31/12**				**Bob Matthias**	**Cathie France**	**Ensure Coordination/Collaboration with other groups/stakeholders to avoid duplicative efforts and conflicts**	
3.01	Identify stakeholders in the development of the offshore wind industry in VA and define/understand their objectives, scope authority, area of influence, and expertise	6/14/11	9/1/11	100%			Bob Matthias, Brian Redmond, Mary Doswell	Ken Jurman	Build a comprehensive list of other stakeholders and their role	
3.01A	Draft a list of potential stakeholders, define their area of influence and expertise, and group them based on common objectives	7/18/11	9/1/11	100%			Cathie France	Ken Jurman, VEDP		
3.02	Establish a process to exchange information and coordinate efforts with VOW and other interested groups to support offshore wind and clarify respective roles and responsibilities	6/14/11	9/15/11				Bob Matthias, Brian Redmond, Mary Doswell, Ron Ritter	Cathie France	Identify contact names for various stakeholders and actively disseminate meeting minutes	Strenghen knowledge base and advocacy strength through coordinated messaging and voice
3.03	Coordinate meetings with the VA BOEMRE Task Force to discuss and understand emerging issues, stakeholder input, and decisions and processes that will affect the development of offshore wind in VA						Bob Matthias	Cathie France, Ken Jurman		

VOWDA Work Plan

❍ Not started
■ On Plan
✓ Complete
◆ Issues
◆ Behind Schedule

Date of Report	Jun 14, 2011

Name	VOWDA Work Plan				Sponsor	VOWDA
Start Date	6/14/11		End Date	5/31/12	Team Lead	Art Moye

VOWDA Work Plan and timeline

Not Started ❍ | On Plan ■ | Complete ✓ | Issues ◆ | Behind Schedule ◆

Item No	Project	Start Date	End Date	% Complete	Status	Dependencies	Lead Responsible	Staff Assigned	Deliverable	Comments
3.04	Assign a liaison to VEDP who will coordinate meetings with VEDP to 1) exchange, review and discuss information regarding offshore wind development in VA focusing on economic benefits, job creation, manufacturing and services needed v. available in the state and 2) develop and support strategies to accelerate investment in VA targeted at the offshore wind industry	6/14/11	6/14/11				Art Moye, Ron Ritter	Cathie France	Provide support for building economic development opportunities that relate to offshore wind and supply chain to support it	Jerry Giles
	Data						**Brian Redmond**	**Al Christopher**		
4.01	Create and perform a survey of industry participants identifying their experience in the offshore wind industry, data resources available for offshore wind development and identifying potential regulatory/administrative barriers.	7/18/11	9/1/11	100%			Brian Redmond, Bob Matthias, Mary Doswell	Jon Miles, Al Christopher	Identify potential stakeholders; characterize contractor capacity, availability and gaps	
4.01A	Draft a list of industry participants	7/18/11	9/1/11	100%			Brian Redmond, Bob Matthias, Mary Doswell	VCERC, VEDP,VOW		
4.01B	Create a web based survey and send it to industry partcipants & stakeholders.	7/20/11	9/1/11	100%		4.01A	Brian Redmond, Bob Matthias, Mary Doswell	Jon Miles, Al Christopher		
4.01C	DMME to compile the results of received surveys	9/1/11	9/15/11			4.01B	Brian Redmond, Bob Matthias, Mary Doswell	George Hagerman, Ken Jurman	DMME will compile the results of survey and present summary of survey during VOWDA meeting on 9/7/2011	
4.01D	Prepare a report summarizing findings from the survey and outlining next steps based on feedback	9/1/11	9/15/11			4.01C	Cathie France	George Hagerman, Jon Miles, others		
4.02	Set up a clearinghouse of accessible information of wind-related data and information, including delivered cost, rate impact, economic impact and environmental impacts of offshore wind compared to other sources of energy	9/1/11	12/31/11			4.01, 4.02	Mary Doswell, Lisa Johnson	Jon Miles, Ken Jurman	Web page containing links to publicly available information and studies	
4.03	Set up a list of state and federal permits and other information required for offshore wind leasing	9/1/11	10/1/11			6.01	Bob Matthias, Mary Doswell, Art Moye	Cathie France	Links will be provided on DMME website to BOEMRE and VA DEQ permitting process	Assist Economic Development efforts by providing a clear path to site a project
	Financial Grants/Incentives						**Lisa Johnson, Ron Ritter**	**Al Christopher**		
5.01	Identify available grants to support offshore wind development (state and federal)	6/28/11	9/15/11	8/15/11			Lisa Johnson, Ron Ritter	Al Christopher	Provide financing options and identify champions to compete for grants	
5.02	Identify other funding sources available to support offshore wind development (such as state/federal financing)	6/28/11	9/15/11	8/15/11			Lisa Johnson, Ron Ritter	Al Christopher	provide financing options and identify champions to compete for grants	

VOWDA Work Plan

❍ Not started
■ On Plan
✓ Complete
◆ Issues
◆ Behind Schedule

Date of Report	Jun 14, 2011

Name	VOWDA Work Plan				Sponsor	VOWDA
Start Date	6/14/11		End Date	5/31/12	Team Lead	Art Moye

VOWDA Work Plan and timeline

Not Started ❍ | On Plan ■ | Complete ✓ | Issues ◆ | Behind Schedule ◆

Item No	Project	Start Date	End Date	% Complete	Status	Dependencies	Lead Responsible	Staff Assigned	Deliverable	Comments
5.03	Support/Endorse and possibly participate in federal grant applications and state efforts that support projects that improve the offshore wind value chain, reduce the delivered cost of power, and create job opportunities	6/28/11	9/15/11	8/15/11			Mary Doswell, Lisa Johnson, Ron Ritter, Brian Redmond	Cathie France		Dominion has filed/participated in two DOE grant proposals related to offshore wind
5.04	Ask VEDP to provide a report reviewing US state incentives and European country incentives for development of onshore and offshore wind supply chain	6/28/11	9/15/11	8/15/11			Art Moye	Al Christopher	Identify incentive gaps; inform supportive policy recommendations	Jerry Giles
5.05	Develop a list of incentives and/or policy initiatives needed to attract offshore wind businesses to Virginia and include in the annual report	6/28/11	9/15/11	8/15/11			Lisa Johnson, Ron Ritter	Cathie France		Jerry Giles
	Regulatory Structure/Policy						**Mary Doswell, Joan Bondareff**	**Cathie France**		
6.01	Identify current renewable goals and regulatory framework in Virginia and prepare a document summarizing key points relevant to offshore wind industry	7/26/11	9/7/11				Mary Doswell, Art Moye, Brian Redmond	Cathie France	Present a broad overview of VA regulatory structure for generation	
6.01A	Prepare presentation for VOWDA meeting and website	7/26/11	9/7/11				Mary Doswell		Mary Doswell will present a broad overview of regulatory structure for generation projects in VA to the VOWDA board	
6.02	Put links on the VOWDA website linking to appropriate sections of SCC, DMME and other relevant government sites describing regulation and RPS in VA		9/15/11			4.04, 6.01	Mary Doswell, Brian Redmond	Jon Miles, Ken Jurman	Links will be provided on DMME website	Jon Miles has been assigned to this task
6.03	Develop a strategy or action plan to address barriers to offshore wind development in VA		10/15/11				Mary Doswell, Brian Redmond, Bob Matthias	Cathie France	After reviewing survey results, a set of recommended actions will be presented to VOWDA	