

# Unsolicited Application for a Section 238 Research Lease by the Virginia Department of Mines, Minerals and Energy

## *Research Lease Number 1 for Met Towers in the Virginia Call Area*

This final unsolicited lease application is submitted by the Department of Mines, Minerals and Energy (DMME), a state government agency of the Commonwealth of Virginia, to the Bureau of Ocean Energy Management (BOEM) of the United States Department of Interior, for a research lease in Federal waters off Virginia, as allowed by 30 CFR, Part 285, Section 238. The information provided below conforms to the general requirements for unsolicited lease applications as specified by 30 CFR, Part 285, Section 230, with the exception that there is no acquisition fee for a *research* lease, as indicated by 30 CFR, Part 285, Section 238, paragraph (g).

The main change to this application, as compared with the revised application dated 06 September 2011, is that the “Area Requested for Lease” section is changed to withdraw all nine sub-blocks identified for Turbine Testing, and to delete all associated text. DMME will submit a new unsolicited application for a second research lease dedicated to Turbine Testing, which will be entirely separate from this application.

### (a) Area Requested for Lease

The DMME is requesting a Section 238 research lease for four (4) sub-blocks mapped in Figure 1 and listed in Table 1. These four sub-blocks will be used for siting two new Met Towers.

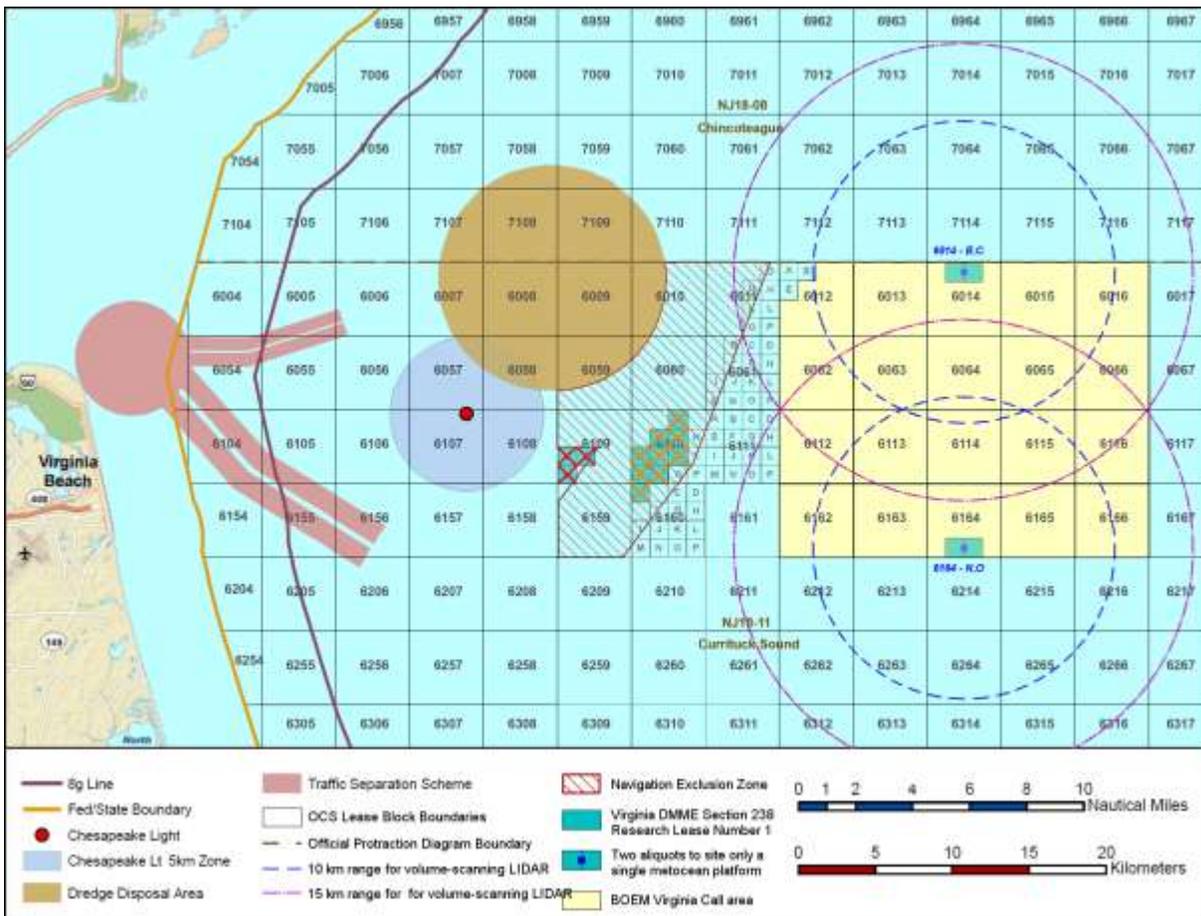


Figure 1. Map showing four sub-blocks in this research lease application. Red and orange “X” symbols indicate Turbine Testing sub-blocks withdrawn from the DRAFT and REVISED applications, respectively.

**Table 1. List of Sub-Blocks Constituting Virginia’s Proposed Research Lease Number 1**

<b>Protraction Diagram Name</b>	<b>Protraction Diagram Number</b>	<b>Research Purpose</b>	<b>Block Number</b>	<b>Sub-Block Letter</b>
Currituck Sound	NJ18-11	Met Tower	6014	B,C
Currituck Sound	NJ18-11	Met Tower	6164	N,O

**(b) General Description of Objectives and Facilities**

This Section 238 research lease application proposes four sub-blocks to be leased for the siting of two metocean and environmental monitoring platforms for pre-and post-construction monitoring of wind velocities, water levels, waves, and bird & bat activities within and around Virginia’s commercial offshore wind development area, which was published in the BOEM Call for Information and Nominations (“Call”) on 21 February 2012.

One met tower could be located within the two sub-blocks located at the midpoint of the northern edge of Virginia’s RFI area (6014-B, 6014-C). A second met tower could be located within the two sub-blocks located at the midpoint of the southern edge of Virginia’s Call area (6164-N, 6164-O).

The two met towers will be identical in design and construction, enabling economies of serial fabrication and offshore equipment mobilization and demobilization for their installation. The two towers also will have identical instrumentation payloads, enabling quantity discounts in ordering of equipment.

Data acquisition and analysis from these platforms will:

- (1) Measure wind direction at ten heights above sea level: 30 m, 45 m, 60 m, 75 m, 90 m, 105 m, 120 m, 135 m, 150 m, and 165 m, using a pulsed, vertical-profiling LIDAR (e.g. Leosphere WindCube or SgurrEnergy Galion), to characterize the wind shear across the span of a wind turbine rotor 120 m in diameter, located at a hub height of 90 to 105 m above sea level. A selected LIDAR unit would be tested against tall mast measurements by calibrated cup anemometers prior to installation on these two platforms.

Having high-resolution velocity profile measurements at these two locations would provide high-quality validation points for numerical wind models, which are needed to hindcast extreme events that turbines and towers must be designed to survive; hindcast operational winds for blade and drive train design against fatigue and turbulent loading; and forecast operational winds for offshore installation or major repair & replacement operations; as well as forecasting winds for output predictions needed by utility dispatchers for load balancing and scheduling project output in the PJM wholesale market.

- (2) Map wind speed and direction at different elevations across the Call area, using volume-scanning LIDAR (e.g. the Lockheed-Martin WindTracer). These are anticipated to have a horizontal resolution of 100 m, a vertical resolution of 20 m, and a measurement range radius of 10 to 15 km (see Figure 1). Because Virginia’s commercial Call area has a north-south width of 19.2 km, two data platforms are needed -- one at the mid-point of the northern edge, and one at the mid-point of the southern edge -- in order to fully map the Call area. Having a year’s worth of measured wind velocity maps covering the entire Call area will provide timely data to inform commercial project site selection, estimates of annual energy production, and post-construction long-term monitoring of cumulative wake effects on the natural wind field as projects are commissioned.

- (3) Measure still-water levels (e.g. with waves removed) and waves at the two platforms, using water level and wave probe based on capacitance (e.g., RGR, Ltd. WG-50) or ultrasonic ranging (e.g., General Acoustics e.K. LOG\_aLevel), to provide data to validate hindcasting models of storm-generated extreme tides, storm surges, and waves, which in turn will be used as the basis for commercial project design. Over time, these will also provide pre- and post-construction measurements showing the cumulative effects of large wind projects, with hundreds of turbine substructures and foundations, on the natural wave field.
- (4) Monitor bird and bat activity across the Call area, using marine avian radar system operating in both the X-band and S-band, to provide data on the pre- and post-construction flight behavior of resident pelagic birds and migrating shore birds and passerines.

### **(c) General Schedule of Proposed Activities**

During the summer of 2012, it is anticipated that a geophysical and geotechnical characterization of the four sub-blocks will be available at reduced costs using a “vessel of opportunity” that will be transiting from the Gulf of Mexico to commercial project site surveys off the coasts of Delaware and New Jersey.

Two metocean data platforms could be installed on the northern and southern boundaries of the Call area and begin collecting data by the summer of 2013, contingent upon BOEM acceptance of a General Activities Plan and assuming that such platforms conform to the scope of the final regional Mid-Atlantic Environmental Assessment published in January 2012. A one-year design & build timetable is based on the experience of the NaiKun offshore wind project in designing, permitting, and installing a similar data platform (LIDAR-only, no tall anemometer mast) within six months off the coast of British Columbia.

### **(d) Renewable Energy Resource and Environmental Conditions in Area of Interest**

As mapped by the most recent numerical modeling of this area by the National Renewable Energy Laboratory, the mean wind speed in the four sub-blocks of this proposed Research Lease Number 1 ranges from 8.0 to 8.5 m/s at an elevation of 90 m. A metocean extreme event analysis is now underway, but pending those results, the event that has produced the highest measured wind speed at the Chesapeake Light Tower during the 26 year-period since measurements began there in 1984 is Hurricane Gloria, which passed offshore Virginia Beach on 26 September 1985, having a peak 10-minute average wind speed of 37.1 m/s (83 mph or 72 knots) at an elevation of 43.3 m (142 ft) above sea level, and a peak significant wave height of 6.2 m (20 ft). In 2003, Hurricane Isabel had a slightly lesser peak wind speed of 33.0 m/s (74 mph or 64 knots), but a slightly higher significant wave height of 6.34 m (21 ft).

Benthic habitat types, fish communities and other marine living resources have been mapped by the Nature Conservancy (TNC), as has commercial fishing effort based National Marine Fisheries Service (NMFS) vessel trip report data. Our proposed Section 238 lease does not coincide with any priority benthic habitat areas identified by TNC. Further, the NMFS data do not indicate that there would be major fisheries conflicts in this area. More study and stakeholder engagement, which are additional site characterization activities envisioned under this lease application, are needed to characterize the ecological resources in the local area encompassed within the proposed research lease.

### **(e) Conformance with State and Local Energy Planning Initiatives**

A letter from the Governor of the Commonwealth of Virginia, Robert F. McDonnell, supporting this unsolicited application for DMME Research Lease Number 1 is again submitted with this final application as Appendix A. The Governor views this research lease as an imperative step toward accelerating the commercial development of offshore wind in Federal waters off Virginia and creating economic opportunities and jobs associated with commercial offshore wind development without unnecessary delay.

Data acquisition towers can be planned, designed, and installed more quickly in this proposed research lease than by a developer in a commercial lease, particularly since overlapping commercial interest areas in response to the BOEM Virginia Call will trigger a competitive lease auction. DMME's proposed activities on Research Lease Number 1 would allow early acquisition of industry-needed wind resource data and metocean design data one to two years before such a tower could be installed by commercial developers who must first win the competitive auction and then execute a commercial lease before they can submit a Site Assessment Plan for an entire commercial lease. By comparison, DMME is prepared to submit its General Activities Plan for this much smaller research lease as soon as a determination of no competitive interest enables BOEM to award the lease and execute a Memorandum of Agreement with DMME for Virginia Research Lease Number 1.

BOEM rules place a priority on commercial development over research activities. The activities intended to be accomplished in this proposed research lease area, as described above in Section (b), will facilitate commercial development by reducing wind resource uncertainties and validating operational metocean forecast models required for planning commercial installation and servicing activities. All eight of the commercial developers who responded to the BOEM Virginia Call indicated that they did not object to DMME's proposed siting of met towers on the four sub-blocks named in this application.

This application also conforms to local energy assurance initiatives by the City of Virginia Beach, where having a source of power to the east, unconstrained by west-to-east bottlenecks in the transmission grid provides a more secure energy supply. This same energy reliability benefit also applies to regional Navy facilities, including four within the City limits of Virginia Beach. Moreover, Navy shore installations have been charged with an order from the Secretary of the Navy to obtain 50% of their electric power from new renewable energy sources by 2020.

Finally, the 2010 legislative session of the Virginia General Assembly passed a joint resolution that supports a goal of the development of 3,000 megawatts of offshore wind power by 2025.<sup>1</sup>

#### **(f) Documentation of Lessee Qualifications**

In response to states' comments on the draft rule, which qualified only the U.S. Department of Energy (DOE) to establish and manage renewable energy research areas on the Outer Continental Shelf, the then-named Minerals Management Service broadened this provision to apply to States and other Federal agencies in addition to DOE. Therefore, this application is being submitted by the Virginia Department of Mines, Minerals and Energy, as a state government agency of the Commonwealth of Virginia.

This section demonstrates that the Virginia DMME has the technical and financial capabilities to conduct the activities to be authorized by a Section 238 renewable energy research lease on the Outer Continental Shelf (OCS) according to the provisions of 30 CFR 285.106 and 285.107.

The DMME is one of 13 executive agencies under the Office of the Virginia Secretary of Commerce and Trade, a Cabinet-level office that oversees the economic, community and workforce development of the Commonwealth. The DMME serves a large and varied group of people, organizations and agencies throughout the Commonwealth. Through its six divisions, the agency regulates the mineral industry, provides mineral research and offers advice on wise use of energy and mineral resources. Its programs directly serve the citizens who live near mining operations, mining labor groups, other regulatory agencies, the educational community, the energy and mineral industries, and environmental, consumer and industry special-interest groups. The Department's mission is to enhance the development and conservation of energy and mineral resources in a safe and environmentally sound manner in order to support a more productive economy in Virginia.

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<sup>1</sup> <http://lis.virginia.gov/cgi-bin/legp604.exe?111+ful+HJ605ER>

The Commonwealth already has successfully demonstrated its legal eligibility to hold a lease as defined in 30 CFR 285.112 and further explained in 30 CFR 285.106 and 107. Submitted as Appendix B of this application is a letter dated 14 Feb 2011, which states that BOEM recognizes DMME as legally qualified to acquire and hold a renewable energy lease or grant on the OCS, and indicates that DMME's legal qualification documents are contained in a file identified as AEAU Company Number 15014.

### **Technical Capability**

The Virginia Offshore Wind Development Authority (VOWDA) and the DMME will be directly involved in management of activities to be undertaken on the proposed research lease. VOWDA was created as a body corporate and a political subdivision of the Commonwealth<sup>2</sup> for the purposes 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 associated supply chain vendors by collecting relevant metocean and environmental data, by identifying existing state and regulatory or administrative barriers to the development of the offshore wind energy industry, by 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 by 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.

The following key personnel would be directly involved on the Commonwealth of Virginia's technical management team for this project, including six VOWDA Board members, one DMME employee, and one VCERC researcher. Their names, titles, and descriptions of relevant experience are given below, and their resumes are included in Appendix C of this application.

#### ***Arthur W. Moye Jr.***

Executive Vice President, Virginia Maritime Association  
VOWDA Board Chair

Arthur W. Moye Jr is Executive Vice President of the Virginia Maritime Association, which, with its almost 500 members, serves as the "Voice of the Port." Mr. Moye also serves as the Executive Vice President of the Hampton Roads Shipping Association, whose purpose is to negotiate and maintain the collective bargaining agreement with the International Longshoremen's Association (ILA). Prior to his current position, he has served as an Officer and Director for both organizations during his 30 years in the maritime industry employed with one of the Port's stevedoring companies. Mr. Moye is well positioned to facilitate meetings with commercial maritime interests during the preparation of our General Activities Plan, which will help ensure that the detailed siting of our proposed metocean data platforms do not create a hazard to commercial navigation.

#### ***Joan Bondareff***

Of Counsel, Blank Rome LLP  
VOWDA Board Vice Chair

Joan M. Bondareff has more than 30 years of experience successfully managing programs and personnel, including eight years of Congressional legislative experience, with oversight of Coast Guard and transportation programs. She has served as General Counsel of a non-profit organization, Chief Counsel of a federal agency, Senior Counsel to a House Committee, and Environment and Energy Team Leader of a major Washington, DC consulting firm. Ms. Bondareff drafted legislation on several environmental and maritime subjects, including the Oil Pollution Act of 1990, Coastal Zone Management Act

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<sup>2</sup> <http://lis.virginia.gov/cgi-bin/legp604.exe?000+cod+67-1201>

Reauthorization Amendments of 1990, the National Maritime Heritage Act, the Antarctic Conservation Act, and the Abandoned Shipwreck Act. She also obtained a \$6 million federal grant for a Mid-West regional port in 2010.

***Mary Doswell***

Senior Vice President, Alternative Energy Solutions Dominion Resources  
VOWDA Board member

Dominion is one of the nation's largest producers and transporters of energy, with a portfolio of approximately 28,200 megawatts of generation, 11,000 miles of natural gas transmission, gathering and storage pipeline and 6,300 miles of electric transmission lines. Dominion operates the nation's largest natural gas storage system with 947 billion cubic feet of storage capacity and serves retail energy customers in 15 states.

Dominion has considerable experience with design, construction, and operation of marine energy projects, including a marine liquefied natural gas (LNG) terminal in the Chesapeake Bay, several hydroelectric power stations, and a variety of underwater power cables for transmission and distribution over a wide range of voltages. A summary of Dominion's marine project experience is included in Appendix D of this application.

In November 2010, Dominion completed its Virginia Offshore Wind Integration Study for VOWDA, which evaluated offshore wind total nameplate capacities of 2,700 and 4,500 MW connected to its Landstown 230 kV substation in south Virginia Beach. This preliminary study estimated that thermal overloads were likely during the "shoulder" seasons of spring and fall, when demand was at 80% of its summer peak and the offshore wind projects were generating at full capacity. The study estimated that these overloads could be avoided by investing between \$30 million (to interconnect 2,700 MW) and \$70 million (to interconnect 4,500 MW) in onshore 230 kV line upgrades.<sup>3</sup>

Dominion also has completed a Trunk Line Transmission Study, to evaluate options for an offshore, high-voltage trunk line that would support multiple offshore wind projects in the Virginia Wind Energy Area. The scope of this study included an evaluation of AC vs. HVDC configurations; offshore cable reliability, operation and maintenance issues; power flow and grid balancing considerations, and the approximate cost of building such a shared offshore transmission infrastructure.

***Lisa Johnson***

Senior Vice President and Chief Operating Officer at Old Dominion Electric Cooperative  
VOWDA Board member

ODEC is a generation-and-transmission cooperative that provides wholesale power to its 11 member electric distribution cooperatives serving consumer-members in Virginia, Maryland and Delaware. ODEC or one of its member Distribution Cooperatives on the Virginia Eastern Shore currently owns, operates and maintains electric supply infrastructure in a marine environment, specifically five underwater cables ranging in voltage from 15 kV to 69kV.

***Brian Redmond***

Principal, CP Energy Group LLC  
VOWDA Board member

During his career Mr. Redmond has negotiated, financed and successfully closed transactions with an aggregate value of over \$6 billion where he was responsible for securing debt and equity and for negotiating the underlying project agreements for both renewable and conventional energy assets. In addition, Mr. Redmond has extensive experience representing sponsors, equity investors, and lenders in the development, operation, acquisition and disposition of energy projects. He serves on the Board of

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<sup>3</sup> [www.dmme.virginia.gov/DE/VOWDA/DominionOffShoreWindStudyReport.pdf](http://www.dmme.virginia.gov/DE/VOWDA/DominionOffShoreWindStudyReport.pdf)

Directors for Deepwater Wind Holdings, LLC, a leading company in the development of offshore wind projects, Noble Environmental Power, which owns over 750MW of operating wind projects, and Centragas Pipeline S.C.A., which owns a 300 mile gas pipeline in The Republic of Colombia.

***Ron Ritter***

Retired Senior Vice President of Earl Industries, LLC  
VOWDA Board member

In addition to repairing, maintaining, and modernizing structural, electrical, and mechanical systems on board U.S. Navy and commercial ships, Earl Industries' divisions and affiliated companies are leaders in electrical power generation and distribution systems. Specifically, Earl's wholly owned subsidiary, Earl Integrated Power and Controls, is an industry leader in electrical control panels, switchboards, power distribution, and full-scale automation systems. Also, Earl's affiliated company, Earl Energy, has designed and deployed power generation systems for the U.S. Defense Department that utilize alternative energy sources such as solar and wind energy, to supply electrical power to forward deployed troops.

***Cathie France***

DMME Deputy Director for Energy Policy  
Lead support staff for VOWDA Board

Ms. France managed the permitting process for the construction of a 24-inch steel natural gas pipeline that was built underneath the Hampton Roads Harbor. The project required permits from the Army Corps of Engineers, the Virginia Marine Resources Commission, easements through Baylor Grounds controlled by the Virginia General Assembly, and local land use permits from the onshore localities on either side of the waterways. As part of the permitting process, Ms. France managed stakeholder outreach and the accommodation of many of other interests in the harbor, including discussions with the Virginia Maritime Association, the Virginia Port Authority and the Virginia Pilots' Association.

Ms. France also is DMME's technical manager of two DMME-funded contracts for test planning and site pre-development activities on Virginia's advanced technology demonstration project sites in state waters. This ongoing experience well qualifies DMME for managing similar activities on our proposed research lease in Federal waters.

The first DMME-funded project, led by the Virginia Tech Advanced Research Institute (VT-ARI) has two tasks directly relevant to the design and installation of metocean measurement and environmental monitoring platforms on the Virginia Research Lease Number 1 proposed herein. The first of these has identified three new designs for rapidly relocatable meteorological mast substructures and foundations. The second relevant task has produced a series of Meteorological Tower Placement Reports for VOWDA, the first in December 2010<sup>4</sup> and an update in October 2011,<sup>5</sup> with a final anticipated in June 2012. These reports describe the types of metocean data needed to inform and accelerate commercial offshore wind project development in the Virginia Wind Energy Area, catalogue the various metocean data sources that are now available on Virginia's outer continental shelf, and provide an overview of the state-of-the-art in offshore wind resource assessment, including LIDAR measurement systems.

The second DMME-funded project, led by James Madison University (JMU), is scoped to characterize foundation conditions at wind turbine test pad sites in state waters; to characterize the wind resource and metocean design environment at these sites, to engage regulatory stakeholders and perform due diligence on environmental and community acceptability, and to prepare the documentation that would be needed to proceed with permitting of the proposed test pad sites. On 22 Feb 2012, BOEM requested a status report on this second project, which DMME provided as a Technical Capability Addendum on 14 Mar 2012. This correspondence and Addendum are included as Appendix E to this application.

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<sup>4</sup> [ww.dmme.virginia.gov/DE/VOWDA/MeteorologicalTowerPlacementReport.pdf](http://ww.dmme.virginia.gov/DE/VOWDA/MeteorologicalTowerPlacementReport.pdf)

<sup>5</sup> [www.dmme.virginia.gov/DE/VOWDA/MetTowerUpdateReport.pdf](http://www.dmme.virginia.gov/DE/VOWDA/MetTowerUpdateReport.pdf)

The JMU project includes three Virginia-based companies as subcontractors, all with considerable marine project experience: Fugro Atlantic, WeatherFlow, and Timmons Group. Fugro Atlantic is performing geological and geotechnical site characterization of possible turbine test pad sites in state waters, and has considerable experience in European offshore wind projects, as well as recently completing an analysis of offshore wind foundations and scour potential in a study funded by BOEM's Technology Assessment & Research Program ([www.BOEM.gov/tarprojects/656.htm](http://www.BOEM.gov/tarprojects/656.htm)). WeatherFlow is performing wind resource assessment of possible turbine test pad sites in state waters, as well as developing a numerical model that can be used for forecasting meteorological conditions at each of these sites, as well as in the Virginia Wind Energy Area, which can inform the planning the installation and servicing of metocean platforms on the proposed Virginia Research Lease Number 1. Timmons Group is convening regulatory stakeholder meetings and gathering all required documentation to support permit applications for possible turbine test pad sites in state waters, including required Federal permits such as those issued by the Corps of Engineers under Section 10 of the Rivers and Harbors Act (regulating installation of structures in navigable waterways) and Section 404 of the Clean Water Act (regulating dredge and fill activities, such as might occur in gravity base foundation preparation or anti-scour rubble deposition).

DMME anticipates that these three companies also could be contracted in a competitive public-private partnership developed by DMME and VOWDA for similar work on our proposed research lease in Federal waters. Therefore, we also have provided their company information in Appendix D of this application, which describes relevant marine project qualifications, experience, and capabilities.

### ***George Hagerman***

Senior Research Associate, Virginia Tech Advanced Research Institute  
Director of Research, Virginia Coastal Energy Research Consortium (VCERC)  
BOEM Virginia Task Force member

George Hagerman has over 30 years experience researching renewable ocean energy systems, including offshore wind power, wave power, tidal current energy, and ocean thermal energy conversion. Hagerman currently is principal investigator for the DMME contract with the Virginia Tech Advanced Research Institute, which is described on the previous page. The DMME has a long history of collaborating and financially supporting wind energy research by Mr. Hagerman and others at Virginia universities.

As VCERC Director of Research, he coordinated the work at five universities to support a feasibility-level reference baseline design and cost estimate for a hypothetical offshore wind project off Virginia. He also was principal author of *Virginia Offshore Wind Studies, July 2007 to March 2010, Final Report*. His present focus areas are resource assessment, metocean extreme event analysis, site characterization, and energy cost modeling.

Mr. Hagerman has been invited to brief Federal and state regulatory agencies, and to testify before legislative committees of the U.S. Congress and the Virginia General Assembly. In 2009, the Minerals Management Service recognized his service with an Offshore Leadership Award.

### **Financial Capability**

***Financing plan for lease acquisition and initial site characterization activities:*** As stated in 30 CFR, Part 285, Section 238, paragraph (g), there is no acquisition cost for a research lease, but the lease holder does need to finance the cost of obtaining all required Federal authorizations, including BOEM approval of a General Activities Plan (GAP) and the cost of performing site characterization activities.

BOEM will require that the lease holder provide the results of a number of surveys with its GAP, including a shallow hazards survey (30 CFR 285.626 (a)(1)), a geological survey (30 CFR 285.616(a)(2)), a geotechnical survey (30 CFR 285.626(a)(4)), an archaeological resource survey (30 CFR 285.626(a)(5)), and biological surveys (30 CFR 285.626(a)(3)). BOEM will not consider approving a lease holder's GAP if the required survey information is not included. Therefore, we must budget for these surveys to be conducted between lease issuance and GAP submittal.

We anticipate a BOEM finding of no significant impact for metocean data platform construction and installation on sub-blocks 6014-B, 6014-C, 6164-N, and 6164-O of our proposed research lease, as these fall within the geographic scope of the BOEM Final Environmental Assessment for the Mid-Atlantic Wind Energy Areas, which indicates that the installation of such platforms is likely to be authorized by the U.S. Army Corps of Engineers under its Nationwide Permit 5 for scientific measurement devices. Thus we anticipate no permitting costs for obtaining Corps of Engineers authority to construct and install metocean data platforms on DMME Research Lease Number 1.

Section 328 of the Clean Air Act Amendments of 1990 (CAAA 1990) directs the U.S. Environmental Protection Agency (EPA) to regulate Outer Continental Shelf (OCS) sources that may affect the air quality of any state. Under 40 CFR Part 55, such OCS sources would include meteorological platforms and any vessels used to construct, install, service, or decommission such platforms, and any vessels conducting seafloor boring or geotechnical testing. This applies to OCS air emissions sources located within 25 nautical miles (nm) of a state's seaward boundary. Virginia's state boundary is located 3 nm offshore, and so this EPA regulation would NOT apply to vessels located on the proposed sites for our metocean data platforms or to any diesel generators on the platforms themselves, as sub-blocks 6014-B, 6014-C, 6164-N, and 6164-O are located more than 28 nm offshore.

Section 328 of the CAAA 1990 also treats emissions from vessels that are servicing or associated with the operations of OCS facilities as direct emissions from the OCS source when those vessels are at the source or en route to or from the source while within 25 nm of the source. As noted above, this would not apply to vessels while working at the proposed met tower sites, but it would apply to a large portion of their routes to and from the sites. Therefore, we must budget for a Clean Air Act permit from EPA Region 3.

Acoustic emissions during geophysical surveys and any pile driving activities for the metocean data platforms will require Incidental Harassment Authorization (IHA) from the National Marine Fisheries Service under the Marine Mammals Protection Act as amended in 1994. Since that time, the IHA program has been increasingly used for short-term activities that might inadvertently harass marine mammals. This program allows authorizations to be issued in 120 days.

The total cost for the above-described surveys and two authorizations (Clean Air Act permit for vessel emissions and IHA for temporary noise effects on marine mammals) is estimated by industry sources familiar with BOEM's geological, geophysical, and archeological survey guidance to be \$5 million. DMME and VOWDA have access to several mechanisms for financing the cost of these initial activities and subsequent phases of research lease development.

***Financing mechanisms for initial site characterization and subsequent phases:*** DMME has the authority to make and enter into all contracts and agreements necessary or incidental to the performance of its duties and the execution of its powers, including, but not limited to, contracts with the private sector, the United States, other state agencies and governmental subdivisions of the Commonwealth. The department also is authorized, consistent with Federal funding rules, to distribute energy-related Federal funds as grants or as loans to other state or non-state agencies for use in financing energy-related projects.

To support late-phase development and wind energy supply chain growth, the Commonwealth of Virginia has created financial incentives for manufacturing companies that create new jobs and renewable sources of energy generation. The Clean Energy Manufacturers Incentive Grant, for instance, can provide grants up to \$36 million to manufacturers that invest at least \$50 million and create 200 jobs. Wind energy suppliers can qualify if they invest \$10 million and create 30 jobs.

VOWDA was created specifically to accelerate offshore wind development off of Virginia's coast and granted powers to provide and facilitate financing to support that mission. The Authority may establish public-private partnerships and share costs with developers for the following activities: the installation

and operation of wind resource and other metocean equipment, including light detection and ranging equipment, meteorological measurement towers, data collection platforms, the collection of avian and marine environmental data, the upgrade of port facilities and other logistical equipment sites to accommodate the manufacturing and assembly of offshore wind energy project components and vessels that will support the construction and operations of offshore wind energy projects.

The Virginia Resources Authority (VRA) has the authority to lend to local governments and to state-created authorities, such as VOWDA. Since its inception, VRA has funded more than 875 projects across the Commonwealth exceeding \$4.2 billion of investment, an average of \$4.8 million per project. Financing solutions include revolving fund loans at below-market interest rates and bonds backed by the moral obligation of the Commonwealth.

The Virginia Public Building Authority (VPBA) also provides financing for State projects, facilities and obligations that have been approved by the Governor and General Assembly. The VPBA is a political subdivision of the Commonwealth, authorized to issue bonds under the Virginia Public Building Authority Act of 1981 (the "Act"). The Authority was created by the Act for the purpose of financing, refinancing, constructing, improving, furnishing, maintaining, acquiring and operating public buildings for the use of the Commonwealth; and financing or refinancing capital projects that benefit the Commonwealth and any of its agencies, instrumentalities and political subdivisions. VPBA financed about \$16 million in infrastructure improvements to the Virginia Commercial Space Flight Authority and Mid-Atlantic Regional Spaceport at Wallops Island.

***Impeccable credit:*** Virginia has held its AAA bond rating for 70 years, longer than any other state. A state's bond rating serves as a measure of a state's financial and administrative status. Virginia's AAA bond rating, the best rating possible, is a reflection of the confidence placed in the Commonwealth's fiscal health. Virginia has earned the highest possible rating with three organizations. The Commonwealth's credit worthiness is rated as AAA by Standard and Poor's, Aaa by Moody's Investors Service, and AAA by Fitch Ratings.

The Pew Center on the States awarded Virginia the top overall grade for government performance in 2005 (along with Utah) and again in 2008 (along with Utah and Washington) based on their assessment of how well the state managed its people, money, infrastructure, and information. Virginia has long been recognized as one of the best-managed states in the nation according to these and similar criteria.

There have been no significant, relevant and adverse legal or regulatory actions taken against DMME in the last five years.

DMME has not filed for bankruptcy or been a target in other adverse financial proceedings with the last five years.

#### **g) Regulation and Oversight of Activities**

As required by CFR 30, Part 285, Section 238, Paragraph (d), the BOEM Director and the Governor of Virginia, or their authorized representatives, will negotiate the terms and conditions of any renewable energy lease, right-of-use (RUE), or right-of-way (ROW) grant that may be issued in response to this unsolicited application.

The framework for such negotiations, and standard terms and conditions of such leases, RUEs, or ROW grants may be set forth in a memorandum of agreement (MOA) or other agreement between BOEM and the Commonwealth of Virginia. The MOA will include the agreement of Virginia to assure that all of the Commonwealth's contractors and subcontractors will comply with these regulations, other applicable Federal laws, and all terms and conditions of such leases or grants.

CERTIFICATION

THAT I, Conrad T. Spangler, III, am authorized to bind the Commonwealth of Virginia Department of Mines, Minerals and Energy (DMME) in any matter related to the acquisition and operation of leases, right-of-way grants, or right-of-use and easement grants for activities that produce or support production, transportation, or transmission of energy from sources other than oil and gas on the OCS, to agree upon the terms of and to execute and deliver any instrument or agreement, including any application, bid, lease, plan, rights-of-way grant, rights-of-use and easement grant, bond or other financial assurance instrument, assignment, designation of operator, relinquishment, amendment, abandonment, power of attorney (including the revocation thereof), and any other paper related to such a lease, right-of- way, right-of-use, and easement.

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[signature] Conrad T. Spangler, III, Director  
Commonwealth of Virginia Department of Mines, Minerals and Energy

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[date]