Synopsis of Federal & State Regulatory & Research Activites

HANDOUT FOR

ATLANTIC WIND ENERGY WORKSHOP

July 12-14, 2011 **Hyatt Dulles Hotel** **Herndon, Virginia**

Hosted by
U.S. Department of the Interior

Bureau of Ocean Energy Management,
Regulation and Enforcement
www.boemre.gov

Introduction

On November 23, 2010, Secretary of the Interior Ken Salazar launched a "Smart from the Start" wind energy initiative for the Atlantic OCS to facilitate siting, leasing and construction of new projects, spurring the rapid and responsible development of this abundant renewable resource. In January 2011, BOEMRE initiated the National Environmental Policy Act (NEPA) environmental assessment to evaluate the potential impacts associated with site assessment activities on the Atlantic OCS. In addition, there is a need for rapid and close coordination with other federal agencies to compile existing site assessment data.

The **Atlantic Wind Energy Workshop** sponsored by the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) is an effort to assist in the environmental review of wind energy areas and in the evaluation of sites for new offshore wind projects. Products from this workshop will summarize environmental, socio-economic and technology and safety studies to include the most recent and ongoing studies in support of wind energy development in the Atlantic OCS Region and affected areas. This workshop will build upon existing BOEMRE and Department of the Interior (DOI) partnerships and develop new avenues of communication and collaborative relationships with other Federal agencies, affected State and local groups, NGO's and industry. The workshop participants will apply their individual knowledge to the workshop tasks and will review the existing information and highlight areas of the most critical information needs. In conclusion of the workshop a report will be written outlining the objectives, findings, discussions and recommendations of the workshop, once reviewed and approved the report will be available in the BOEMRE ESPIS system. http://www.gomr.boemre.gov/homepg/espis/espismaster.asp?appid=1

Purpose of Document

This handout was prepared prior to the workshop to provide a summary of agency regulatory and research activities with information and references for supporting documents and reports related to the Atlantic OCS and affected states, wind energy development.

Limitations of Document

This is a living document and may not include all regulatory or research activities for all federal or state governments.

Disclaimer

This handout was prepared under contract number M11PD00067 between BOEMRE and Performance-based Solutions, Inc. and CSA International, Inc. Information forms were provided by each agency or were compiled based on publicly available information and technically reviewed by BOEMRE and has been approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the BOEMRE, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

Synopsis of Federal & State Regulatory & Research Activities

July, 2011 (Version 1.0)

Introduction ii

Purpose of Document ii

Limitations of Document ii

Disclaimer ii

U.S. Department of the Interior (DOI), Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) 1
Federal Energy Regulatory Commission (FERC); 5
U.S. Department of Energy (DOE) 6
U.S. Army Corps of Engineers (USACE) 8
U.S. Coast Guard (USCG) 9
U.S. Environmental Protection Agency (EPA) 10
U.S. Fish and Wildlife Service (USFWS) 11
National Oceanic and Atmospheric Administration (NOAA) 12
National Marine Fisheries Service (NMFS) 12
National Ocean Service (NOS) 12
National Weather Service (NWS) 12
Oceanic and Atmospheric Research (OAR) 12
National Environmental Satellite, Data and Information Service (NESDIS) 12
Advisory Council on Historic Preservation (ACHP); 14
Council on Environmental Quality (CEQ) 15
Federal Aviation Administration (FAA) 16
Occupational Safety and Health Administration (OSHA) 17
Delaware 18
Florida (East Coast) 19
Georgia 20
Maine 21
Maryland 23
Massachusetts 25
New Jersey 26
New York 29
North Carolina 30
Rhode Island 32
South Carolina 33
Virginia 35

Responsible Agency(Agencies):

U.S. Department of the Interior (DOI),
Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE)

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Regulatory mandate:

BOEMRE conducts planning and issues leases and authorizations for offshore oil and gas operations and renewable energy projects in federal waters under the Outer Continental Shelf Lands Act (OCSLA) (43 U.S.C. § 1801, et. seq.). BOEMRE renewable energy authority covers alternate energy-related uses of the Outer Continental Shelf such as wind facilities, tidal and wave facilities, as well as re-use of offshore oil and gas platforms for other energy and non-energy uses. The OCSLA authorizes the Secretary of the Interior to issue a lease, easement, or right-of-way on the OCS for activities that are not otherwise authorized by the OCSLA, or other applicable law, if those activities: Produce or support production, transportation, or transmission of energy from sources other than oil and gas; or use, for energy-related purposes or other authorized marine-related purposes, facilities currently or previously used for activities authorized under the OCSLA, except that any oil and gas energy-related uses shall not be authorized in areas in which oil and gas pre-leasing, leasing, and related activities are prohibited by a moratorium. Requirements.--The Secretary shall ensure that any activity under this subsection is carried out in a manner that provides for-- (A) safety; (B) protection of the environment; (C) prevention of waste.

The **Office of Offshore Renewable Energy Programs (OREP)** oversees development of offshore renewable energy projects on the Outer Continental Shelf (OCS). This new activity in the marine environment requires an assessment of the potential environmental impacts to resources on the OCS. Through the **Environmental Studies Program (ESP)**, BOEMRE is collecting information to be used in this assessment. The Bureau's responsibilities include determining and evaluating the effects of OCS activities on natural, historical, and human resources and the appropriate monitoring and mitigation of those effects. ESP operates on a national scale to provide the best available quality science for the stake holder and end users with peer review and matrix based management.

The ESP is required by the Outer Continental Shelf Lands Act, as amended in 1978 to provide information for sound decision-making and management. The ESP conducts research across the spectrum of the physical, biological and socioeconomic environments as required by the OCSLA and the National Environmental Policy Act of 1969 (NEPA).

Additionally, the Technology Assessment & Research (TA&R) Program is a research element encompassed by the BOEMRE Regulatory Program. The TA&R Program was established in the 1970's to ensure that industry operations on the Outer Continental Shelf incorporated the use of the Best Available and Safest Technologies subsequently required through the 1978 OCSLA amendments. The Program supports research associated with operational safety, engineering standards and pollution prevention. The TA&R studies related to renewable energy and alternate use are also available online.

Renewable Energy Research:
Ongoing Studies: http://www.boemre.gov/eppd/sciences/esp/OngoingStudies.htm
Completed Studies: http://www.boemre.gov/eppd/sciences/esp/CompletedStudies.htm

Existing Memoranda of Understanding (MOUs):

- BOEMRE and National Oceanic and Atmospheric Administration (NOAA) (5/19/2011): The MOU specifies how BOEMRE and NOAA will cooperate and coordinate by:
    - Defining specific processes to ensure effective and timely communication of agency priorities and upcoming activities;
    - Identifying and undertaking critical environmental studies and analyses;
    - Collaborating on scientific, environmental and technical issues related to the development and deployment of environmentally sound and sustainable offshore renewable energy technologies; and
    - Increasing coordination and collaboration on decisions related to OCS activities, including with respect to research and scientific priorities.
    - See http://www.boemre.gov/ooc/pdfs/MOU_BOEMRE_NOAA_May2011.pdf.
- BOEMRE and DOE (6/29/2010): BOEMRE and the United States Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy (EERE) entered into an MOU in order to prioritize and facilitate environmentally-responsible deployment of commercial-scale offshore wind and marine and hydrokinetic energy technologies on the OCS through collaborative efforts on issues of mutual interest. A Working Group will establish an action plan to undertake collaborative activities such as formal and informal information exchange; stakeholder engagement; research on technical, environmental and other questions of mutual interest; joint evaluation and development of standards and guidelines; and the dissemination of any relevant products to decision-makers. http://www.doi.gov/whatwedo/energy/loader.cfm?csModule=security/getfile&PageID=37040
- BOEMRE and Atlantic States (ME, NH, MA, RI, NY, NJ, DE, MD, VA, NC and SC) (6/8/2010): Memorandum of Understanding The MOU to create an Atlantic offshore wind energy consortium to coordinate issues of regional applicability for the purpose of promoting the efficient, expeditious, orderly and responsible development of the wind resources of the Atlantic OCS. http://www.boemre.gov/ooc/PDFs/AtlanticConsortiumMOU.pdf
- BOEMRE and FWS (6/4/2009): Department of the Interior's BOEMRE and U.S. Fish and Wildlife Service (FWS) entered into a MOU regarding responsibilities of federal agencies to protect migratory birds. See http://www.boemre.gov/offshore/RenewableEnergy/PDFs/MMS-FWS_MBTA_MOU_6-4-09.pdf.
- BOEMRE and FERC (4/29/2009): The Participating Agencies recognize that: 1) the DOl's Minerals Management Service (MMS) (BOEMRE) has exclusive jurisdiction with regard to the production, transportation, or transmission of energy from non-hydrokinetic renewable energy projects on the OCS, including renewable energy sources such as wind and solar; 2) MMS (BOEMRE) has exclusive jurisdiction to issue leases, easements, and rights-of-way regarding OCS lands for hydrokinetic projects; and 3) the Commission has exclusive jurisdiction to issue licenses and exemptions for hydrokinetic projects located on the OCS. See http://www.boemre.gov/offshore/RenewableEnergy/PDFs/DOI_FERC_MOU.pdf.
    -

Existing delegations granted for regulatory action:

The Energy Policy Act of 2005, Pub. L. No. 109-58, added Section 8(p)(1)(C) to the OCSLA, which mandated that the Secretary of the Interior issue leases, easements, or rights-of-way on the OCS for the purpose of wind energy development. 43 U.S.C. § 1337(p)(1)(C). The Secretary delegated this authority to the former Minerals Management Service (MMS), now BOEMRE.

Existing studies and documents relevant to offshore wind energy since 2007:

See website for up to date completed studies reports and profiles of ongoing work and completed work, by discipline.

Ongoing Studies: http://www.boemre.gov/eppd/sciences/esp/OngoingStudies.htm
Completed Studies: http://www.boemre.gov/eppd/sciences/esp/CompletedStudies.htm
Partnership projects funded in 2010 under the National Ocean Partnership Program. http://www.nopp.org/funded-projects/fy2010-projects/

- ENVIRONMENTAL BASELINE AND MONITORING

Workshop to Identify Alternative Energy Environmental Information Needs Workshop Summary. October 2007. http://www.researchplanning.com/pubs/MMSAEWorkshopSummary.pdf

- SOCIAL ECONOMICS

Atlantic Wind Energy Status and Discussion Department of Interiors Office of Offshore Alternative Energy Programs Commercial and Recreational Fishing and the "Smart from the Start" Atlantic Offshore Wind Initiative. Presentation. April 2011. http://www.mafmc.org/meeting_materials/2011/April%202011/BOEMRE_presentation.pdf

Determining Night-time Distribution of Long-tailed Ducks Using Satellite Telemetry. March 2009. http://www.gomr.boemre.gov/PI/PDFImages/ESPIS/4/4823.pdf

Evaluate the Effect of Turbine Period of Vibration Requirements on Structural Design Parameters. Sept. 2010. http://www.boemre.gov/tarprojects/651.htm

Federal Register 30 CFR Parts 250, 285, and 290 Renewable Energy and Alternative Uses of Existing Facilities on the Outer Continental Shelf; Final Rule. April 29, 2009. http://www.boemre.gov/federalregister/PDFs/FinalRule0409.pdf

- TECHNOLOGY ASSESSMENT AND SAFETY

Inspection Methodologies for Offshore Wind Turbine Facilities. Final Report. January 2009. http://www.energoeng.com/Documents/Energo-MMS_Wind_Turbine_Inspections_Final_2009.pdf

Offshore Wind Energy Installation and Decommissioning Cost Estimation in the U.S. Outer Continental Shelf. November 2010. http://www.boemre.gov/tarprojects/648/aa.pdf

Offshore Wind Turbine Inspection Refinements. Final Report. June 2010. http://www.boemre.gov/tarprojects/650/aa.pdf

Structure, Equipment and Systems for Offshore Wind Farms on the OCS Part 1 of 2 Parts – Guideline. March 2010. http://www.boemre.gov/tarprojects/633/633ad_Part1-GuidelineforStructureEquipmentandSystems.pdf

Structure, Equipment and Systems for Offshore Wind Farms on the OCS Part 2 of 2 Parts – Commentary. December 2009. http://www.boemre.gov/tarprojects/633/633ae_Part2-Commentary.pdf

Template for a Safety Management System for Offshore Wind Farms on the OCS. October 2009. http://www.boemre.gov/tarprojects/633/633ac_TemplateforSMSforOffshoreWindFarms.pdf

- FLYING ANIMALS

Workshop on Birds and Offshore Wind Development. Feb. 13-15, 2008. http://www.boemre.gov/offshore/RenewableEnergy/WorkshopBirdsOffshoreWindDevelopment.htm

- GENERAL

Cape Wind Energy Project Final Environmental Impact Statement. January 2009. http://www.boemre.gov/offshore/RenewableEnergy/CapeWindFEIS.htm

Worldwide Synthesis and Analysis of Existing Information Regarding Environmental Effects of Alternative Energy Uses on the Outer Continental Shelf. July 2007. http://www.boemre.gov/itd/pubs/2007/2007-038.pdf

Permitting Regulatory requirements (links):

http://www.boemre.gov/offshore/RenewableEnergy/RegulatoryInformation.htm

Federal Register 30 CFR Parts 250, 285, and 290 Renewable Energy and Alternative Uses of Existing Facilities on the Outer Continental Shelf; Final Rule. April 29, 2009. http://www.boemre.gov/federalregister/PDFs/FinalRule0409.pdf

Filing Instruction for OCS Renewable Energy Lease and Grant Requests. November 1, 2010. http://www.gomr.boemre.gov/homepg/regulate/regs/ntla/filing_addresses.pdf

Guidelines for Providing Geological and Geophysical, Hazards, and Archaeological Information Pursuant to 30 CFR Part 285. April 21, 2011. http://www.boemre.gov/offshore/renewableenergy/PDFs/GGARCH4-11-2011.pdf

Guidelines for Requirements for a Renewable Energy Construction and Operations Plan (COP). December 17, 2010. http://www.boemre.gov/offshore/RenewableEnergy/PDFs/COP_Guidelines_122210.pdf

Guidelines for the Minerals Management Service Renewable Energy Framework. July 2009. http://www.boemre.gov/offshore/renewableenergy/PDFs/REnGuidebook_03August2009_3_.pdf

Notice to Lessees, Operators, and Applicants for Federal Renewable Energy Leases and Grants and Alternate Use Grants on the Outer Continental Shelf. Applications for Renewable Energy Leases and Grants and Alternate Use Grants on the U.S. Outer Continental Shelf. June 22, 2009. http://www.boemre.gov/ntls/PDFs/2009REN-NO1.pdf

Offshore Renewable Energy Regulatory Process. Presentation by Jessica Bradley. August 26, 2010. http://www.boemre.gov/offshore/renewableenergy/PDFs/stateactivities/NC/RegulatoryFrameworkPresentation.pdf

Qualification Guidelines to Acquire and Hold Renewable Energy Leases and Grants and Alternate Use Grants on the U.S. Outer Continental Shelf. March 1, 2011. http://www.boemre.gov/offshore/renewableenergy/PDFs/QualificationGuidelines.pdf

Additional information:

April 22, 2009, BOEMRE promulgated final regulations implementing the authority to issue leases, easements, or rights-of-way on the OCS for the purpose of wind energy development at 30 CFR Part 285. See http://www.boemre.gov/offshore/RenewableEnergy/PDF/FinalRenewableEnergyRule.pdf.

"Smart from the Start" Atlantic Wind Initiative - http://www.boemre.gov/offshore/RenewableEnergy/SmartFromTheStart.htm

Renewable Energy on the Outer Continental Shelf Fact Sheet - http://www.boemre.gov/offshore/RenewableEnergy/PDFs/BOEMREAlternativeEnergyfactsheet.pdf

Responsible Agency(Agencies):
Federal Energy Regulatory Commission (FERC);

Contact information:
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Regulatory mandate:

Under the Natural Gas Act (NGA) (15 U.S.C. § 717, *et. seq.*), FERC issues certificates of public convenience and necessity for gas pipelines and authorizations for the import or export of natural gas. Under the Federal Power Act (16 U.S.C. § 792-823a), FERC has the authority to issue licenses for the construction and operation of hydrokinetic projects in state waters and on the OCS.

Existing Memoranda of Understanding (MOUs):

- BOEMRE and FERC (4/29/2009): The Participating Agencies recognize that: 1) the DOl's DOI's Minerals Management Service (MMS) (BOEMRE) has exclusive jurisdiction with regard to the production, transportation, or transmission of energy from non-hydrokinetic renewable energy projects on the OCS, including renewable energy sources such as wind and solar; 2) MMS (BOEMRE) has exclusive jurisdiction to issue leases, easements, and rights-of-way regarding OCS lands for hydrokinetic projects; and 3) the Commission has exclusive jurisdiction to issue licenses and exemptions for hydrokinetic projects located on the OCS. http://www.boemre.gov/offshore/RenewableEnergy/PDFs/DOI_FERC_MOU.pdf.

Existing delegations granted for regulatory action:

None were identified relevant to offshore wind energy

Existing studies and documents relevant to offshore wind energy since 2007:

Expanding Transmission For Wind: FERC's Role. Spring 2008 Renewable Energy Transmission by Sandy Smith. http://www.nawindpower.com/pdf/RET0804.pdf

Permitting requirements (links):

FERC does not issue permits for offshore wind energy, only for hydrokinetic energy.

Additional information:

None

Responsible Agency(Agencies):

U.S. Department of Energy (DOE)

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Regulatory mandate:

DOE supports the development of reliable, clean, and affordable energy and promotes scientific and technological innovation to help achieve that goal. DOE has offices that focus on both traditional and renewable energy, as well as energy efficiency. The Energy Policy Act of 2005 and the Department of Energy Organization Act (Pub. L. 95-91, as amended; 42 U.S.C. §7256) authorizes the Wind Energy Program to explore initial deployment issues for offshore wind turbines in the U.S., including assessing environmental conditions and working with the BOEMRE to develop offshore regulatory policy in accordance with Section 321 of EPAct 2005, Alternate Energy-Related Uses on the Outer Continental Shelf.

Existing Memoranda of Understanding (MOUs):

- DOE and BOEMRE: The United States Department of the Interior (DOI) Bureau of Ocean Energy, Management, Regulation, and Enforcement (BOEMRE), and the United States Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy (EERE) enter into this Memorandum of Understanding (MOU) in order to prioritize and facilitate environmentally-responsible deployment of commercial-scale offshore wind and marine and hydrokinetic (MHK) energy technologies on the Outer Continental Shelf (OCS) through collaborative efforts on issues of mutual interest. http://www.doi.gov/whatwedo/energy/loader.cfm?csModule=security/getfile&PageID=37040
- USDOE-EERE and NOAA (1/24/11): U.S. Department of Energy Office of Energy Efficiency and Renewable Energy and the U.S. Department of Commerce, National Oceanic and Atmospheric Administration Memorandum of Understanding on Weather-Dependent and Oceanic Renewable Energy Resource.

Existing delegations granted for regulatory action:

None were identified relevant to offshore wind energy.

Existing studies and other relevant to offshore wind energy since 2007:

Partnership projects funded in 2010 under the National Ocean Partnership Program: http://www.nopp.org/funded-projects/fy2010-projects/

- ENVIRONMENTAL BASELINE AND MONITORING

  Assessment of Offshore20% Wind Energy Resources for the United States. Marc Schwartz, Donna Heimiller, Steve Haymes, and Walt Musial. Technical Report. June 2010.by 2030. Increasing Wind Energy's Contribution to U.S. Electricity Supply. DOE/GO-102008-2567. July 2008. http://www.nrel.gov/docs/fy10osti/45889fy08osti/41869.pdf

  Draft Environmental Assessment for University of Maine's Deepwater Offshore Floating Wind Turbine Testing and Demonstration Project Gulf of Maine. U.S. Department of Energy. Office of Energy Efficiency and Renewable Energy. Golden Field Office. May 2011. http://nepa.energy.gov/documents/EA-1792D.pdf

- SOCIAL ECONOMICS

  2009 Wind Technologies Market Report. http://www1.eere.energy.gov/windandhydro/pdfs/2009_wind_technologies_market_report.pdf

- TECHNOLOGY ASSESSMENT AND SAFETY

  20% Wind Energy by 2030. Meeting the Challenges Proceedings of the Workshop. Wind and Hydropower Technologies Program Office of Energy Efficiency and Renewable Energy U.S. Department of Energy. October 6-7, 2008, Arlington, VA. May 2009. http://www1.eere.energy.gov/windandhydro/pdfs/20percent_wkshp_proceedings_5-19-09.pdf

  2009 Wind Technologies Market Report. http://www1.eere.energy.gov/windandhydro/pdfs/2009_wind_technologies_market_report.pdf

  A National Offshore Wind Strategy. Creating an Offshore Wind Energy Industry in the United States February 7, 2011.

http://www1.eere.energy.gov/windandhydro/pdfs/national_offshore_wind_strategy.pdf

Assessment of Offshore Wind Energy Resources for the United States. Marc Schwartz, Donna Heimiller, Steve Haymes, and Walt Musial. Technical Report. June 2010. http://www.nrel.gov/docs/fy10osti/45889.pdf

Draft Environmental Assessment for University of Maine's Deepwater Offshore Floating Wind Turbine Testing and Demonstration Project Gulf of Maine. U.S. Department of Energy. Office of Energy Efficiency and Renewable Energy. Golden Field Office. May 2011. http://nepa.energy.gov/documents/EA-1792D.pdf

Electrical Collection and Transmission Systems for Offshore Wind Power. Conference Paper NREL/CP-500-41135 March 2007. Preprint. J. Green, A. Bowen, L.J. Fingersh, and Y. Wan. National Renewable Energy Laboratory. To be presented at the 2007 Offshore Technology Conference Houston, Texas April 30 – May 3, 2007. http://www.nrel.gov/wind/pdfs/41135.pdf

Engineering Challenges for Floating Offshore Wind Turbines. Conference Paper NREL/CP-500-38776 September 2007. S. Butterfield, W. Musial, and J. Jonkman. National Renewable Energy Laboratory. P. Sclavounos. Massachusetts Institute of Technology. Presented at the 2005 Copenhagen Offshore Wind Conference. Copenhagen, Denmark October 26–28, 2005. http://gisceu.net/PDF/U444.pdf

Large-Scale Offshore Wind Power in the United States Assessment of Opportunities and Barriers. September 2010. http://www.nrel.gov/wind/pdfs/40745.pdf

Office of Wind and Hydropower Technologies Wind Energy Program 2008 Merit Review Report. June 2008. http://www1.eere.energy.gov/windandhydro/pdfs/FY08_wind_program_merit_review_report.pdf

Offshore Wind Energy Permitting: A Survey of U.S. Project Developers. FB Van Cleve. AE Copping. November 2010. http://www.pnl.gov/main/publications/external/technical_reports/PNNL-20024.pdf

Wind and Hydropower Technologies Program. New England Wind Forum. A Wind Powering America Project – Newsletter #5 – January 2010. http://www.nrel.gov/docs/fy10osti/46906.pdf

Wind and Hydropower Technologies Program. New England Wind Forum. A Wind Powering America Project – Newsletter #6 – September 2010. http://www.nrel.gov/docs/fy10osti/48687.pdf

Wind and Water Power Program. Advanced Wind Turbine Drivetrain Concepts: Workshop Report. June 29-30, 2010. http://www1.eere.energy.gov/windandhydro/pdfs/advanced_drivetrain_workshop_report.pdf

Wind and Water Power Program. Wind Power Today. 2010. http://www.nrel.gov/wind/pdfs/47531.pdf

- GENERAL

20% Wind Energy by 2030. Increasing Wind Energy's Contribution to U.S. Electricity Supply. DOE/GO-102008-2567. July 2008. http://www.nrel.gov/docs/fy08osti/41869.pdf

A National Offshore Wind Strategy. Creating an Offshore Wind Energy Industry in the United States February 7, 2011. http://www1.eere.energy.gov/windandhydro/pdfs/national_offshore_wind_strategy.pdf

Large-Scale Offshore Wind Power in the United States Assessment of Opportunities and Barriers. September 2010. http://www.nrel.gov/wind/pdfs/40745.pdf

Office of Wind and Hydropower Technologies Wind Energy Program 2008 Merit Review Report. June 2008. http://www1.eere.energy.gov/windandhydro/pdfs/FY08_wind_program_merit_review_report.pdf

Offshore Wind Energy Permitting: A Survey of U.S. Project Developers. FB Van Cleve. AE Copping. November 2010. http://www.pnl.gov/main/publications/external/technical_reports/PNNL-20024.pdf

Permitting requirements (links):

Authorizes the Wind Energy Program to explore initial deployment issues for offshore wind turbines in the U.S., including assessing environmental conditions and working with the DOI BOEMRE to develop offshore regulatory policy in accordance with Section 321 of EPAct 2005, Alternate Energy-Related Uses on the Outer Continental Shelf.

Additional information:

http://www.eere.energy.gov/topics/wind.html

Responsible Agency(Agencies):

U.S. Army Corps of Engineers (USACE)

Contact information:

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Regulatory Program Manager, North Atlantic Division
James.W.Haggerty@usace.army.mil

Regulatory mandate:

CWA, Section 404, as amended (33 USC 1344) requires a permit from the USACE before discharging dredged or fill material into waters of the United States, including wetlands.

Rivers and Harbors Appropriation Act of 1899 (33 USC 401 et seq.), Section 10 (33 USC 403) delegates to the USACE the authority to review and regulate certain structures and work that are located in or that affect navigable waters of the U.S. The OCSLA extends the jurisdiction of the USACE, under Section 10 to the seaward limit of Federal jurisdiction. 33 U.S.C. 401 et seq.; 33 U.S.C. 1344; 33 U.S.C. 1413

Existing Memoranda of Understanding (MOUs):

None were identified relevant to offshore wind energy.

Existing delegations granted for regulatory action:

None were identified relevant to offshore wind energy.

Existing studies and documents relevant to offshore wind energy since 2007:

None were identified relevant to offshore wind energy.

Permitting requirements (links):

http://www.usace.army.mil/CECW/Pages/reg_rel_res.aspx

Additional information:

None

Responsible Agency(Agencies):

U.S. Coast Guard (USCG)

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Regulatory mandate:

Ports and Waterways Safety Act, as amended (33 USC 1221 et seq.) authorizes the USCG to implement, in waters subject to the jurisdiction of the U.S., measures for controlling or supervising vessel traffic or for protecting navigation and the marine environment. Such measures may include but are not limited to: reporting and operating requirements, surveillance and communications systems, routing systems, and fairways.

Existing Memoranda of Understanding (MOUs):

- None were identified relevant to offshore wind energy.

Existing delegations granted for regulatory action:

None were identified relevant to offshore wind energy.

Existing studies and documents relevant to offshore wind energy since 2007:

Navigation and Vessel Inspection Circular No. 02-07. Guidance on the Coast Guard's Roles and Responsibilities for Offshore Renewable Energy Installations (OREI). Prepared by U.S. Department of Homeland Security, United States Coast Guard. http://www.uscg.mil/d17/d17%20divisions/dpw/docs/NVIC02-07.pdf

Offshore Renewable Energy Installations Impact on navigation and marine safety. By George W. Detweiler, Marine Transportation Specialist, U.S. Coast Guard Marine Transportation Systems Management Directorate. Spring 2011. http://www.uscg.mil/proceedings/Spring2011/articles/19_Detweiler.pdf

Permitting requirements (links):

Navigation and Vessel Inspection Circular No. 02-07. Guidance on the Coast Guard's Roles and Responsibilities for Offshore Renewable Energy Installations (OREI). Prepared by U.S. Department of Homeland Security, United States Coast Guard. http://www.uscg.mil/d17/d17%20divisions/dpw/docs/NVIC02-07.pdfNone were identified relevant to offshore wind energy.

Additional information:

None

Responsible Agency(Agencies):

U.S. Environmental Protection Agency (EPA)

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Susan Bromm
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Regulatory mandate:

When applicable, EPA issues a Prevention of Significant Deterioration (PSD) permit for air emissions under the Clean Air Act (42 U.S.C. § 1701, et. seq.). EPA also issues National Pollutant Discharge Elimination System (NPDES) permits for discharges in federal offshore waters under the Clean Water Act (33 U.S.C. § 1251, et. seq.). Through its Clean Energy Programs, EPA works with state policy makers, electric and gas utilities, energy customers, and other key stakeholders to identify, design and implement clean energy policy and technology solutions. These programs provide useful, objective information and technical assistance for available clean energy technologies.

Existing Memoranda of Understanding (MOUs):

- None were identified relevant to offshore wind energy.

Existing delegations granted for regulatory action:

Some states have been granted authorization to issue NPDES permits.

Existing studies and documents relevant to offshore wind energy since 2007:

None were identified relevant to offshore wind energy.

Permitting requirements (links):

Prohibits, with certain exceptions, the dumping or transportation for dumping of materials, including, but not limited to, dredged material, solid waste, garbage, sewage, sewage sludge, chemicals, biological and laboratory waste, wrecked or discarded equipment, rock, sand, excavation debris, and other waste into ocean waters without a permit from the USEPA.

Requires USEPA (or an authorized State agency) to issue a permit before construction of any new major stationary source or major modification of a stationary source of air pollution. The permit-called a Prevention of Significant Deterioration (PSD) permit for stationary sources located in areas that comply with NAAQS and a Nonattainment Area Permit in areas that do not comply with NAAQS—must control emissions in the manner prescribed by USEPA regulations to either prevent significant deterioration of air quality (in attainment areas), or contribute to reducing ambient air pollution in accordance with an approved implementation plan (in nonattainment areas).

Requires the owner or operator of a stationary source that has more than a threshold quantity of a regulated substance in a process to submit a Risk Management Plan to USEPA.

Additional information:

None

Responsible Agency(Agencies):

U.S. Fish and Wildlife Service (USFWS)

Contact information:

David Cottingham
David_Cottingham@fws.gov

Regulatory mandate:

The USFWS is involved in the review of potential wind energy projects on public lands through the National Environmental Policy Act. This involvement may be as a cooperating agency or because of the Service's responsibilities under the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act, the Endangered Species Act. Service biologists also provide technical expertise regarding the potential wildlife impacts of proposed wind energy developments.

Existing Memoranda of Understanding (MOUs):

- BOEMRE and FWS: Memorandum of Understanding between the Department of the Interior U.S. Minerals Management Service (now BOMRE) and the Department of the Interior U.S. Fish and Wildlife Service (FWS) Regarding Responsibilities of Federal Agencies to Protect Migratory Birds. See http://www.boemre.gov/offshore/RenewableEnergy/PDFs/MMS-FWS_MBTA_MOU_6-4-09.pdf.

Existing delegations granted for regulatory action:

None were identified relevant to offshore wind energy.

Existing studies and documents relevant to offshore wind energy since 2007:

U. S. FWS Workshop on Marine Birds Science and Offshore Wind: June 21-23, 2011.

Birds, Bats and Offshore Wind Farms. Presentation Wing Goodale, BioDiversity Research Institute. http://www2.briloon.org/windpower/Goodale_BirdsBatsWindFarms.pdf

U.S. Fish and Wildlife Service Wind Turbine Guidelines Advisory Committee. Preamble to the Committee Recommendations, Committee Policy Recommendations, Committee Recommended Guidelines. Submitted to the Secretary of the Interior, March 4, 2010 by the Wind Turbine Guidelines Advisory Committee. http://www.abcbirds.org/abcprograms/policy/collisions/pdf/FWS_Wind_Guidelines.pdf

Wind Power Siting Regulations and Wildlife Guidelines in the United States. April 2007. Research Conducted by Jodi Stemler Consulting, Denver, CO. http://www.batsandwind.org/pdf/afwastsitsum.pdf

Whooping Cranes and Wind Farms- – Guidance for Assessment of Impacts. Draft. June 1, 2007. T. Stehn, USFWS.

Permitting requirements (links):

Federal agencies are required to consult with the USFWS to ensure that proposed Federal actions are not likely to jeopardize the continued existence of any species listed at the Federal level as endangered or threatened, or result in the destruction or adverse modification of critical habitat designated for such species.

Additional information:

None

Responsible Agency(Agencies):

National Oceanic and Atmospheric Administration (NOAA)
National Marine Fisheries Service (NMFS)
National Ocean Service (NOS)
National Weather Service (NWS)
Oceanic and Atmospheric Research (OAR)
National Environmental Satellite, Data and Information Service (NESDIS)

Contact information:

Stephen Brown
stephen.k.brown@noaa.gov

Ashley Chappell
Ashley.Chappell@noaa.gov

Trevor Lavoie
Trevor.Lavoie@noaa.gov

Monica Medina
monica.medina@noaa.gov

Sally Yozell
sally.yozell@noaa.gov

Regulatory mandate:

- National Environmental Policy Act (NEPA) (42 U.S.C. § 7401, et seq.). NOAA assists lead agencies to develop applicable environmental review documents under NEPA.
- Endangered Species Act (ESA) (16 U.S.C. § 1531, et seq.). If an energy project may affect endangered species listed under the ESA or habitat of listed species, then the lead agencies must consult with NOAA's National Marine Fisheries Service (NMFS), under Section 7 of the ESA.
- Marine Mammal Protection Act (MMPA) (16 U.S.C. § 1361, et seq.). If an energy project would harm, harass or take a marine mammal, then the applicant may need an incidental take authorization from NMFS.
- Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) (16 U.S.C. § 1801, et seq.). If an energy project may adversely affect "essential fish habitat," then the lead federal agencies must consult with NMFS before issuing the license.
- Fish and Wildlife Coordination Act. Requires that all federal agencies consult with NMFS, the U.S. Fish and Wildlife Service and state wildlife agencies to reduce environmental impacts to migratory, estuarine, and marine fisheries and their habitats. Requires that fish and wildlife resources receive equal consideration to other features in proposed water resource development projects, and that these resources be improved. Federal agencies must consider effects that projects would have on fish and wildlife development and provide for resource improvement.
- National Marine Sanctuaries Act (NMSA) (16 U.S.C. § 1431, et seq.). An energy project may be prohibited from being located in a National Marine Sanctuary. In other cases a permit from NOAA would be required. If an energy project were likely to injure or destroy sanctuary resources, then the lead agencies must consult with NOAA's National Marine Sanctuaries Program.
- Coastal Zone Management Act (CZMA) (16 U.S.C. § 1451, et seq.). An energy project applicant must provide affected coastal states with a consistency certification, pursuant to 15 C.F.R. Part 930, subpart D. If a State objects, then the authorizing federal agency cannot issue the license, unless the applicant appeals the state's objection to the Secretary of Commerce and the Secretary overrides the state's objection, pursuant to 15 CFR Part 930, subpart H.
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. § 9601, et seq.) and the Oil Pollution Act (OPA) (33 U.S.C. § 2701, et seq.). If an environmental accident occurs at a coastal or offshore energy project, then NOAA's Damage Assessment and Restoration Program may have restoration and damage assessment authority under CERCLA and OPA.

Existing Memoranda of Understanding (MOUs):

- BOEMRE and National Oceanic and Atmospheric Administration (NOAA) (5/19/2011): The MOU specifies how BOEMRE and NOAA will cooperate and coordinate by:
    - Defining specific processes to ensure effective and timely communication of agency priorities and upcoming activities;
    - Identifying and undertaking critical environmental studies and analyses;
    - Collaborating on scientific, environmental and technical issues related to the development and deployment of environmentally sound and sustainable offshore renewable energy technologies; and
    - Increasing coordination and collaboration on decisions related to OCS activities, including with respect to research and scientific priorities.
    - See http://www.boemre.gov/ooc/pdfs/MOU_BOEMRE_NOAA_May2011.pdf.
- USDOI and U.S. Department of Commerce (5/19/11): U.S. Department of the Interior and U.S. Department of Commerce Memorandum of Understanding on coordination and collaboration regarding outer continental shelf energy development and environmental stewardship.
- USDOE-EERE and NOAA (1/24/11): U.S. Department of Energy Office of Energy Efficiency and Renewable Energy and the U.S. Department of Commerce, National Oceanic and Atmospheric Administration Memorandum of Understanding on Weather-Dependent and Oceanic Renewable Energy Resource.

Existing delegations granted for regulatory action:

None were identified relevant to offshore wind energy.

Existing studies and documents relevant to offshore wind energy since 2007:

Data Needs to Assess Impacts of Offshore Wind Development. October 22, 2010. Presentation by Pete Colosi, NOAA Fisheries Service, Habitat Conservation Division, Northeast Regional Office.

NOAA's Capabilities in Wind Energy. NCAR-Xcel-NOAA Meeting, May 11-12, 2010, Boulder, CO. Presentation by Melinda Marquis, Ph.D., NOAA Earth System Research Laboratory.

NOAA's Role in the Future of Offshore Wind Energy. January/February 2010. Volume 44, Number 1. Richard W. Spinrad, Assistant Administrator, Oceanic and Atmospheric Research, National Oceanic and Atmospheric Administration and Rochelle Plutchak, NOAA Communications Specialist.

Offshore measurements of wind flow characteristics aloft for wind energy using ship-borne High-Resolution Doppler Lidar. March 17, 2011. Presentation by Y. Pichugiana with Cooperative Institute for Research in Environmental Sciences (CIRES) of Colorado University, Boulder, CO, and R. Banta, A. Brewer, M. Hardesty, and S. Sandberg of Earth System Research Laboratory, National Oceanic and Atmospheric AdministrationAdmininistration (ESRL/NOAA), Boulder, CO. Sustainable Energy and Atmospheric Sciences Seminar.

Permitting requirements (links):

Conduct environmental consultations and manage conservation of marine fisheries, marine mammals, endangered and threatened species, fisheries habitat, and coastal wetlands and evaluates the potential and actual impacts of coastal and ocean energy and energy infrastructure projects.

Additional information:

http://www.energy.noaa.gov/renewable-energy/

National Marine Fisheries Service (NMFS): NMFS' primary energy-related roles are to provide federal agencies responsible for regulating energy and related infrastructure projects with science-based information, conservation recommendations and consultations, including proposing changes to energy project alternatives to better conserve NOAA trust resources and habitat.

National Ocean Service (NOS): NOS provides important services related to energy policy and energy project review for other federal agencies and the energy industry, including oil spill containment, environmental assessment and response.

National Weather Service (NWS): NWS conducts real-time data collection, quality control, assimilation, and distribution of observations describing the weather, climate, atmosphere, water, space, and ocean. These data and products and NWS' modeling and forecasting capabilities enable power producers to predict generation capacity; support the energy industry's supply, demand, and production models; and help managers maintain stability on the grid.

Oceanic and Atmospheric Research (OAR): OAR's science and technology innovations improve weather, water, and climate modeling and analysis, and advance forecast and prediction capabilities relied upon by renewable and established energy sources on land and in the ocean.

National Environmental Satellite, Data and Information Service (NESDIS): NESDIS provides limited direct support to national energy-related efforts. However, the Line Office supplies a variety of remote Earth observations that provide indirect support to energy production and distribution.

Responsible Agency(Agencies):

Advisory Council on Historic Preservation (ACHP);
State or Tribal Historic Preservation Officer

Contact information:

Caroline D. Hall
Assistant Director, Office of Federal Agency Programs
Advisory Council on Historic Preservation
202-606-8524
chall@achp.gov

Regulatory mandate:

National Historic Preservation Act of 1966, as amended (16 USC 470-470t); Archaeological and Historical Preservation Act of 1974 (16 USC 469-469c-2) requires each Federal agency to take into account the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the Federal undertaking. Certain parties may have consultive roles in the Section 106 process such as State Historic Preservation officers and Tribal Historic Preservation Officers; authorizes Interior Secretary to undertake salvage of archaeological data if it is determined that such data is significant and is being or may be irrevocable lost or destroyed due to a federally licensed activity or program.

Existing Memoranda of Understanding (MOUs):

- Agencies consult with SHPOs when developing Memoranda of Agreement.
- No existing MOUs were identified relevant to offshore wind energy.

Existing delegations granted for regulatory action:

State Historic Preservation Officers (SHPOs) administer the national historic preservation program at the State level, review National Register of Historic Places nominations, maintain data on historic properties that have been identified but not yet nominated, and consult with Federal agencies during Section 106 review. SHPOs are designated by the governor of their respective State or territory. Federal agencies seek the views of the appropriate SHPO when identifying historic properties and assessing effects of an undertaking on historic properties.

Existing studies and documents relevant to offshore wind energy since 2007:

Energy Development and Historic Preservation: ACHP Recommendations. June 5, 2010. (available from Caroline P. Hall chall@achp.gov)

What About a Wind Farm Project Triggers Section 106? Updated March 4, 2011. http://www.achp.gov/news_windfarmproject.html

Permitting requirements (links):

It is the responsibility of each federal agency to determine whether a proposed federal project or a non-federal project requiring federal assistance or authorization should be considered an undertaking subject to Section 106 review.

ACHP's training courses provide additional training in Section 106 compliance: http://www.achp.gov/106select.html

Additional information:

None

Responsible Agency(Agencies):

Council on Environmental Quality (CEQ)

Contact information:

Mary Boatman
Ocean Policy Advisor
National Ocean Council
mary_c_boatman@ostp.eop.gov

Regulatory mandate:

The Council on Environmental Quality (CEQ) has regulatory oversight of all federal agencies for NEPA and has interpreted minimum guidelines. Requires Federal agencies to prepare an EIS to evaluate the potential environmental impacts of any proposed major Federal action that would significantly affect the quality of the human environment, and to consider alternatives to such proposed actions.

Existing Memoranda of Understanding (MOUs):

None were identified relevant to offshore wind energy.

Existing delegations granted for regulatory action:

None were identified relevant to offshore wind energy.

Existing studies and documents relevant to offshore wind energy since 2007:

None were identified relevant to offshore wind energy.

Permitting requirements (links):

The Council on Environmental Quality (CEQ) coordinates Federal environmental efforts and works closely with agencies and other White House offices in the development of environmental policies and initiatives. CEQ was established within the Executive Office of the President by Congress as part of the National Environmental Policy Act of 1969 (NEPA) and additional responsibilities were provided by the Environmental Quality Improvement Act of 1970. NEPA assigns CEQ the task of ensuring that Federal agencies meet their obligations under the Act.

Additional information:

CEQ has created an online reading room at www.whitehouse.gov/administration/eop/ceq/foia/readingroom

Responsible Agency(Agencies):

Federal Aviation Administration (FAA)

Contact information:

Sheri Edgett Baron
Manager, Obstruction Evaluation Group, AJV-15
202-267-9354
sheri.edgett-baron@faa.gov

Regulatory mandate:

Federal Aviation Act of 1958 (49 USC 44718); 14 CFR 77 requires that, when construction, alteration, establishment, or expansion of a structure is proposed, adequate public notice be given to the FAA as necessary to promote safety in air commerce and the efficient use and preservation of the navigable airspace.

The FAA conducts aeronautical studies on proposed construction out to 12 NM (territorial seas). There is a gap between the territorial seas and development of the outer continental shelf (out to 240 NM). This means that the FAA does not evaluate and determine impacts to the navigable airspace beyond 12 NM.

Existing Memoranda of Understanding (MOUs):

- None were identified relevant to offshore wind energy.

Existing delegations granted for regulatory action:

None were identified relevant to offshore wind energy.

Existing studies and documents relevant to offshore wind energy since 2007:

FAA Wind Tower Relevant Legislations. Code of Federal Regulations. Title 14: Aeronautics and Space. Part 77 – Safe, Efficient Use, and Preservation of the Navigable Airspace. http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&rgn=div5&view=text&node=14:2.0.1.2.9&idno=14None were identified relevant to offshore wind energy.

Permitting requirements (links):

File a Notice of Proposed Construction or Alteration (Form 7460-1)
Aeronautical studies are conducted based on information provided by proponents.

Any person/organization who intends to sponsor any of the following construction or alterations must notify the Administrator of the FAA:

- any construction or alteration exceeding 200 ft above ground level
- any construction or alteration:
  - within 20,000 ft of a public use or military airport which exceeds a 100:1 surface from any point on the runway of each airport with its longest runway more than 3,200 ft
  - within 10,000 ft of a public use or military airport which exceeds a 50:1 surface from any point on the runway of each airport with its longest runway no more than 3,200 ft
  - within 5,000 ft of a public use heliport which exceeds a 25:1 surface
- any highway, railroad or other traverse way whose prescribed adjusted height would exceed the above noted standards
- when requested by the FAA
- any construction or alteration located on a public use airport or heliport regardless of height or location.

Additional information:

https://oeaaa.faa.gov

Responsible Agency(Agencies):

Occupational Safety and Health Administration (OSHA)

Contact information:
Brian Sturtecky
Sturtecky.Brian@dol.gov

Regulatory mandate:

With the Occupational Safety and Health Act of 1970, Congress created the Occupational Safety and Health Administration (OSHA) to ensure safe and healthful working conditions for working men and women by setting and enforcing standards and by providing training, outreach, education and assistance. OSHA is part of the United States Department of Labor. The administrator for OSHA is the Assistant Secretary of Labor for Occupational Safety and Health. OSHA's administrator answers to the Secretary of Labor, who is a member of the cabinet of the President of the United States.

Existing Memoranda of Understanding (MOUs):

None were identified relevant to offshore wind energy.

Existing delegations granted for regulatory action:

None were identified relevant to offshore wind energy.

Existing studies and documents relevant to offshore wind energy since 2007:

None were identified relevant to offshore wind energy.

Permitting requirements (links):

None were identified relevant to offshore wind energy.

Additional information:

None

Responsible Agency(Agencies):

Delaware

Contact information:

Collin O'Mara, Secretary
Delaware Department of Natural Resources and Environmental Control (DNREC)
89 Kings Highway
Dover, Delaware 19901
302-739-9000
Collin.OMara@state.de.us

Philip Cherry, Director of Policy and Planning
Office of the Secretary, DNREC
89 Kings Highway
Dover, Delaware 19901
302-739-9000
Philip.Cherry@state.de.us

Regulatory mandate:

The Delaware Renewable Energy Task Force was established through Senate Substitute #1 to Senate Bill 119 to provide recommendations on establishing renewable energy trading mechanisms and other structures to support the growth of renewable energy in Delaware.

Existing Memoranda of Understanding (MOUs):

- BOEMRE and Atlantic States (ME, NH, MA, RI, NY, NJ, DE, MD, VA, NC) (6/8/2010): Memorandum of Understanding to create an Atlantic offshore wind energy consortium to coordinate issues of regional applicability for the purpose of promoting the efficient, expeditious, orderly and responsible development of the wind resources of the Atlantic OCS. http://www.boemre.gov/ooc/PDFs/AtlanticConsortiumMOU.pdf
- States of Delaware and Maryland and the Commonwealth of Virginia (11/9/2009): Memorandum of Understanding related to common interests associated with offshore wind energy development.

Existing delegations granted for regulatory action:

None were identified relevant to offshore wind energy.

Existing studies and documents relevant to offshore wind energy since 2007:

Delaware Opinion on Offshore Wind Power. By Jeremy Firestone, Willett Kempton and Andrew Krueger. University of Delaware College of Marine and Earth Studies. Final Report. January 2008. http://www.ceoe.udel.edu/windpower/docs/FinalDNRECOpinionReport.pdf

Issuance of Leases for Wind Resource Data Collection on the Outer Continental Shelf Offshore Delaware and New Jersey. Environmental Assessment. June 2009. Published by U.S. Department of the Interior, Minerals Management Service, Environmental Division. OCS EIS/EA, MMS 2009-025. http://www.boemre.gov/offshore/renewableenergy/PDF/FinalEA_MMS2009-025_IP_DE_NJ_EA.pdf

Permitting requirements (links):

A Framework for Regulation of Offshore Wind Power in Delaware State Waters. By Amardeep Dhanju and Jeremy Firestone. University of Delaware College of Marine and Earth Studies. Final Report. January 2008. http://www.ceoe.udel.edu/windpower/docs/FinalRegulationFrameworkReport.pdf

Additional information:

http://www.dnrec.delaware.gov/energy/information/Pages/DelawareEnergyPlan.aspx
http://www.dnrec.delaware.gov/energy/information/Pages/RenewableEnergyTaskForce.aspx

Responsible Agency(Agencies):

Florida (East Coast)

Contact information:

Jim Murley, Director
Center for Urban and Environmental Solutions
Florida Atlantic University
111 East Las Olas Boulevard, AT 709
Fort Lauderdale, Florida 33301
954-762-5255
jmurley@fau.edu

Regulatory mandate:

The Program Development and Support Section is responsible for developing and amending the regulatory and proprietary rules that are used to implement the Environmental Resource/Wetland Resource Permit Program and that govern authorizations to use submerged lands owned by the State of Florida. These programs are authorized under Chapters 253, 258, and 373, of the Florida Statutes. In addition, Chapter 403 of the Florida Statutes is used as part of this program to govern activities which may pollute Florida's ground and surface waters, including wetlands. Currently, approximately 30 separate rules of the Department and the water management districts have been adopted to implement this program. For more information, go to Guide to the Rules used by the Department of Environmental Protection to Implement the Environmental Resource Permit program. Rulemaking to adopt these rules is done in accordance with Chapter 120 of the Florida Statutes. For more information on current rules under development and the status of the rules, visit our On-going Rule Development page. http://www.dep.state.fl.us/water/wetlands/erp/rules/ruledvlp.htm

Existing Memoranda of Understanding (MOUs):

- None were identified relevant to offshore wind energy.

Existing delegations granted for regulatory action:

None were identified relevant to offshore wind energy.

Existing studies and documents relevant to offshore wind energy since 2007:

COAPS Center for Ocean-Atmospheric Prediction Studies. The Power of Wind: New Investigations into the Viability of Harnessing Offshore Wind Energy for Florida. July 2010. http://www.coaps.fsu.edu/docs/offshorewindenergyfactsheet.pdf

Powell, Mark, et al. Offshore Wind Energy: Prospects for Florida and the Gulf of Mexico. Presentation. September 2010. http://www.coaps.fsu.edu/docs/news/201009powell.pdf

Permitting requirements (links):

http://www.dep.state.fl.us/water/wetlands/docs/erp/overview.pdf

Environmental Resource Permit (ERP) is required before beginning any construction activity that would affect wetlands, alter surface water flows, or contribute to water pollution.

Submerged Lands Authorization is required for any construction on or use of submerged lands owned by the State.

Additional information:

None

Responsible Agency(Agencies):

Georgia

Contact information:

Georgia Wind Working Group
http://www.gawwg.org/

Georgia Department of Natural Resources
http://coastalgadnr.org/

Regulatory mandate:

The Georgia Wind Working Group started in Spring 2005 through a partnership involving Southern Alliance for Clean Energy, Georgia Institute of Technology's Strategic Energy Institute, and the Georgia Environmental Finance Authority. The Georgia Wind Working Group promotes responsible development and use of wind power. Fifty members including utilities, wind developers, government, universities, and other stakeholders. Oversees a Georgia offshore-coastal wind committee.

The Shore Protection Act (O.C.G.A. 12-5-230, et seq.) is the primary legal authority for protection and management of Georgia's shoreline features including sand dunes, beaches, sandbars, and shoals, collectively known as the sand-sharing system. Its jurisdiction includes the submerged shoreline lands out to the three mile limit of State ownership, the sand beaches to ordinary high water mark, and the "dynamic dune field," which is defined as the dynamic area of the beach and sand dunes. The ocean boundary of the dynamic dune field extends to the ordinary high water mark, and the landward boundary of the dynamic dune field is the first occurrence of either a live native tree 20 ft in height or greater, or a structure existing on 1 July 1979.

Existing Memoranda of Understanding (MOUdMOUs):

- None were identified relevant to offshore wind energy.

Existing delegations granted for regulatory action:

None were identified relevant to offshore wind energy.

Existing studies and documents relevant to offshore wind energy since 2007:

Presentation from Georgia Wind Working Group Offshore Wind Energy Technology Meeting for Coastal Scientists. The UGA Marine Extension Service Marine Education Center and Aquarium. May 3, 2011. http://www.gawwg.org/savcoastalsciencemtng.html

Presentations from Georgia Wind Working Group Public Forum on Offshore Wind Energy http://www.gawwg.org/resources/pastevents.html

Southern Winds. Summary Project Report 2007. A study of wind power generation potential off the Georgia coast. http://www.southerncompany.com/planetpower/pdfs/WindReport.pdf

Tapping Georgia's Offshore and Coastal Wind Energy Resources. An overview by the Georgia Wind Working Group. Presented by: Rita Kilpatrick, Southern Alliance for Clean Energy and Georgia Wind Working Group, Georgia Environmental Conference, August 29, 2008. http://www.georgiaenet.com/repository/Topic%2059%20-%20Rita%20Kilpatrick.pdf

Permitting requirements (links):

None were identified relevant to offshore wind energy.

Additional information:

None

Responsible Agency(Agencies):

Maine

Contact information:

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Maine State Planning Office
38 State House Station
Augusta, Maine 04333
207-287-3144
kathleen.leyden@maine.gov

Todd Burrowes
State Planning Office
38 State House Station
Augusta, Maine 04333
207-287-1496
Todd.Burrows@maine.gov

Regulatory mandate:

The Maine Wind Energy Act finds that it is in the public interest to explore opportunities for and encourage the development, where appropriate, of wind energy production in the State in a manner that is consistent with high environmental standards and that achieves reliable, cost-effective, sustainable energy production on those sites in the State that will attract investment and permit the development of viable wind energy projects. The Legislature finds that the development of the wind energy potential in the State needs to be integrated into the existing energy supply and transmission systems in a way that achieves system reliability, total capital cost-effectiveness and optimum short-term and long-term benefits to Maine people.

Existing Memoranda of Understanding (MOUs):

BOEMRE and Atlantic States (ME, NH, MA, RI, NY, NJ, DE, MD, VA, NC) (6/8/2010): Memorandum of Understanding to create an Atlantic offshore wind energy consortium to coordinate issues of regional applicability for the purpose of promoting the efficient, expeditious, orderly and responsible development of the wind resources of the Atlantic OCS. http://www.boemre.gov/ooc/PDFs/AtlanticConsortiumMOU.pdf

Existing delegations granted for regulatory action:

None were identified relevant to offshore wind energy.

Existing studies and documents relevant to offshore wind energy since 2007:

- ENVIRONMENTAL BASELINE AND MONITORING

  Draft Environmental Assessment for University of Maine's Deepwater Offshore Floating Wind Turbine Testing and Demonstration Project Gulf of Maine. U.An Analysis of the Maine Coast: Potential Wind Farm Locations. 2008. Presentation by S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Golden Field Office. May 2011. http://www.go.doe.gov/PDFs/ReadingRoom/NEPA/1792d/UMaine_Draft_EA_1792-FINAL-web.pdfNewbury, ES212, Colby College.
- FLYING ANIMALS

  Birds, Bats and Coastal Wind Farm Development in Maine: A Literature Review, Report BRI 2009-18. W. Goodale and T. Divoll, BioDiversity Research Institute, Gorham, Maine.

  Feasibility Study of Potential Avian Risk from Wind Energy Development, Western Ohio Lakeshore Region, Lucas, Ottawa, Sandusky, Erie, and Lorain Counties, Ohio. October 17, 2007. Report prepared for AWS Truewind, LLC. Prepared by J. Guarnaccia and P. Kerlinger, Currey & Kerlinger, L.L.C., Cape May Point, NJ.
- GENERAL

  Reference Materials available on Maine's website: http://www.maine.gov/doc/mfs/windpower/reference.shtmlAn Analysis of the Maine Coast: Potential Wind Farm Locations. 2008. Presentation by S. Newbury, ES212, Colby College.

  Deepwater Offshore Wind in Maine: the Plan, the Timeline. Presentation by Dr. H. J. Dagher, P.E. Director, Advanced Structures and Composites Center. University of Maine. June 18, 2009. http://www2.umaine.edu/aewc/images/stories/web_uploads/wind_test_center.pdf

  Draft Environmental Assessment for University of Maine's Deepwater Offshore Floating Wind Turbine Testing and Demonstration Project Gulf of Maine. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Golden Field Office. May 2011. http://www.go.doe.gov/PDFs/ReadingRoom/NEPA/1792d/UMaine_Draft_EA_1792-FINAL-web.pdf

  Feasibility Study of Potential Avian Risk from Wind Energy Development, Western Ohio Lakeshore Region, Lucas, Ottawa, Sandusky, Erie, and Lorain Counties, Ohio. October 17, 2007. Report prepared for AWS Truewind, LLC. Prepared by J. Guarnaccia and P. Kerlinger, Currey & Kerlinger, L.L.C., Cape May Point, NJ.

  Federal Permitting on the Outer Continental Shelf Maine Wind Energy Conference. Augusta, Maine, January 25, 2011.

Presentation by Peter Browne, Sr. Consultant, Renewable Energy Services, HDR Engineering. http://www.communityenergypartners.com/windenergy/2011/Browne-Federal-Permitting.pdf

Final Report of the Ocean Energy Task Force to Governor John E. Baldacci. Appendices. December 2009. http://www.maine.gov/spo/specialprojects/OETF/Documents/finalappendices_123109.pdf

Final Report of the Ocean Energy Task Force to Governor John E. Baldacci. December 2009. http://www.maine.gov/spo/specialprojects/OETF/Documents/finalreport_123109.pdf

Final Report of the Ocean Energy Task Force. Appendix 11: Overview of Wind, Tidal and Wave Power Permitting Requirements. 2009. http://www.maine.gov/spo/specialprojects/OETF/Documents/finalappendices_123109.pdf

Final Report of the Ocean Energy Task Force. Appendix 12: FERC/State Tidal Power MOU. 2009. http://www.maine.gov/spo/specialprojects/OETF/Documents/finalappendices_123109.pdf

Gulf of Maine Offshore Wind Energy Development Initiative. Updated Content of the Gulf of Maine Offshore Wind Energy Geographic Information System (OWEGIS) – DRAFT. March 12, 2009. Authors: Dr. Susan A. Elston, Dr. Melissa M. Landon, Dr. Habib J. Dagher (University of Maine), & Matthew E. Nixon M.M.A. (State Planning Office). http://www.maine.gov/spo/specialprojects/OETF/Documents/Sub_Committees/Subc1_Environmental/UM%20GoM%20Wind%20-%20Siting%20Geographic%20Data%20System%20Mar12.pdf

Maine Deepwater Offshore Wind Report. Authored by: The University of Maine and James W. Sewall Company. Funded by: U.S. Department of Energy. February 23, 2011. http://www.deepcwind.org/docs/OfficialOffshoreWindReport-22311.pdf

Maine Offshore Wind Energy. Wind Resources, Technologies, and Energy Production. School of Economics Discussion Paper. Garry L. Hunt, School of Economics, University of Maine. November 2009. An Act to Improve the Permitting Process for Wind Energy Developments and to Protect Maine's Quality of Place. SP0450, LR 1256, item 1, First Regular Session – 125th Maine Legislature. 2010. http://e-lobbyist.com/gaits/text/266660/266660.pdf

Reference materials from the Governor's Task Force on Wind Power Development. http://www.maine.gov/doc/mfs/windpower/reference.shtml

Report of the Governor's Task Force on Wind Power Development: Finding Common Ground for a Common Purpose. Final Report. February 2008. http://www.maine.gov/doc/mfs/windpower/pubs/report/wind_power_task_force_rpt_final_021408.pdf

Permitting requirements (links):

An Act To Stimulate Demand for Renewable Energy (http://www.maine.gov/doc/mfs/windpower/pubs/pdf/PUBLIC403.pdf)

DEP process and decision making criteria - Current guidance document on issues [related process information under development] http://www.maine.gov/dep/blwq/docstand/windpower.pdf

Examples of wind power ordinances: Rockport, Maine wind power project ordinance(pdf); and model ordinance from Wisconsin (pdf)

Federal Permitting on the Outer Continental Shelf Maine Wind Energy Conference. Augusta, Maine, January 25, 2011. Presentation by Peter Browne, Sr. Consultant, Renewable Energy Services, HDR Engineering. http://www.communityenergypartners.com/windenergy/2011/Browne-Federal-Permitting.pdf

Final Report of the Ocean Energy Task Force. Appendix 11: Overview of Wind, Tidal and Wave Power Permitting Requirements. 2009. http://www.maine.gov/spo/specialprojects/OETF/Documents/finalappendices_123109.pdf

LURC process and decision making criteria - Current guidance documents on decision making criteria and process http://www.maine.gov/tools/whatsnew/index.php?topic=lurcfiles&id=2642&v=tplfiles

Selections from *Overcoming Obstacles to Wind Power Development in Maine*, Emily Berry, Erica Bickford, Danielle Fitzpatrick, Eric Ford, Theresa Paladino and Patricia Rouleau, University of Maine, December 2005 - http://www.umaine.edu/nrc/Curriculum/2005%20Wind%20Paper.pdf

SPO memo outlining local decision-making role regarding wind power (pdf | Word | text)

Examples of wind power ordinances: Rockport, Maine wind power project ordinance(pdf); and model ordinance from Wisconsin (pdf)

Additional information:

In order to facilitate the development of alternative ocean energy in Maine, the Governor's Ocean Energy Task Force recommended and drafted L.D. 1465 (.pdf), which was passed unanimously by the Maine State Legislature in June 2009. The legislation directed the Maine Department of Conservation, in consultation with the Maine State Planning Office, to select up to five locations within Maine state waters to be designated as "Ocean Energy Testing Areas." Through comprehensive review of available map information and numerous meetings with the public and interest groups, three sites were designated by MDOC on 15 December 2009. http://www.maine.gov/doc/initiatives/oceanenergy/oceanenergy.shtml

Responsible Agency(Agencies):

Maryland

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Regulatory mandate:

Maryland has direct regulatory and management jurisdiction over activities occurring in its own state waters and on its lands and submerged lands. Thus, lands under the Chesapeake Bay, the Atlantic Coastal Bays, and the Atlantic Ocean within three nautical miles of the coastline along Maryland's 32 miles of Atlantic coastline are directly under state jurisdiction and authority; however, certain federal permitting requirements will also apply to specific activities on these lands and waters.

For the Atlantic Ocean outer continental shelf (OCS) beyond the three-nautical-mile limit, the federal government has exclusive jurisdiction. Maryland's ability to affect actions on the federal OCS will depend in substantial part on its participation in federal processes including environmental impact review under the National Environmental Policy Act and federal consistency review provisions of the Coastal Zone Management Act that enable the state to review federal actions outside the state's coastal zone that have effects on land or water uses or natural resources within the coastal zone.

Maryland also retains jurisdiction over the portions of OCS energy projects and their support facilities that are within state waters or lands. Thus, for example, although the federal Minerals Management Service may issue an oil and gas lease or alternative energy (wind or wave) lease on the OCS following environmental impact analysis and coastal consistency, state permitting and approvals may still be needed for shore-based facilities or for pipelines and transmission lines traversing state submerged lands. Maryland's energy policies affecting electric power distribution within the state, and its renewable energy portfolio standards will also play a role in the types and likelihood of offshore electric generation facilities, and the siting of electric transmission lines within the state. Federal authority applies to energy distribution where interstate electric transmission and interstate natural gas pipelines are involved.

Existing Memoranda of Understanding (MOUs):

- BOEMRE and Atlantic States (ME, NH, MA, RI, NY, NJ, DE, MD, VA, NC) (6/8/2010): Memorandum of Understanding to create an Atlantic offshore wind energy consortium to coordinate issues of regional applicability for the purpose of promoting the efficient, expeditious, orderly and responsible development of the wind resources of the Atlantic OCS. http://www.boemre.gov/ooc/PDFs/AtlanticConsortiumMOU.pdf
- States of Delaware and Maryland and the Commonwealth of Virginia (11/9/2009): Memorandum of Understanding related to common interests associated with offshore wind energy development.

Existing delegations granted for regulatory action:

Delegation of air permit authority to the Maryland Department of the Environment may occur.

Existing studies and documents relevant to offshore wind energy since 2007:

- ENVIRONMENTAL BASELINE AND MONITORING

  Maryland Center for Integrative Environmental Research. Coastal Atlas, the work product of MD's marine spatial planning efforts. http://www.dnr.state.md.us/map_template/coastalmaps/coastal_atlas.html

- SOCIAL ECONOMICS

  Catching the Wind Harnessing the Potential of Offshore Wind Power to Clean Our Air and Create Jobs in Maryland. Environment Maryland, Research & Policy Center, United Steelworkers. Tony Dutzik, Rob Kerth and Ben Davis, Frontier Group. Brad Heavner, Environment Maryland. Research & Policy Center. Jim Strong, United Steelworkers. March 2011. http://www.environmentmaryland.org/uploads/0f/58/0f586e65653ed3b508b83afc04f56fa5/Catching-the-Wind.pdf

  Maryland Offshore Wind Report. PreparedCenter for National Wildlife Federation and Environment Maryland. Prepared by Sage Energy Consulting, LLC and La Capra Associates, Inc. March 2011. Integrative Environmental Research. Coastal Atlas, the work product of MD's marine spatial planning efforts. http://sageenergyconsulting.com/files/OSWReport031611final.pdfhttp://www.dnr.state.md.us/map_template/coastalmaps/coastal_atlas.html

- GENERAL

  Maryland Offshore Energy Framework. Prepared by The Environmental Law Institute. For the Maryland Coastal Zone Management Program, Maryland Department of Natural Resources. September 30, 2009 (revised November 30, 2009). http://www.dnr.state.md.us/irc/docs/00014565.pdf

  Maryland Offshore Wind Development: Regulatory Environment, Potential Interconnection Points, Investment Model, and Select Conflict Areas. Center for Integrative Environmental Research (CIER), University of Maryland. October 2010. http://www.cier.umd.edu/documents/Maryland-Offshore-Wind-Report.pdf

  Maryland Offshore Wind Energy Act of 2011: Facts & Figures. Maryland Energy Administration. http://www.governor.maryland.gov/documents/offshorewindfactsheet.pdf

  Maryland Offshore Wind Report. Prepared for National Wildlife Federation and Environment Maryland. Prepared by Sage Energy Consulting, LLC and La Capra Associates, Inc. March 2011. http://sageenergyconsulting.com/files/OSWReport031611final.pdf

  Maryland Response to Department of Interior Offshore Wind Request for Interest. Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE), Docket No. BOEM-2010-0038, Commercial Leasing for Wind Power on the Outer Continental Shelf (OCS) Offshore Maryland – Request for Interest (RFI). January 10, 2011. http://www.boemre.gov/offshore/renewableenergy/PDFs/stateactivities/MD/StateMaryland.pdf

  Maryland's Offshore Wind Power Potential. A Report Sponsored by the Abell Foundation and Prepared by the University of Delaware's Center for Carbon-free Power Integration, College of Earth, Ocean, and Environment. Authors: Jeremy Firestone, Associate Professor and Senior Research Scientist, Willett Kempton, Professor and Center Director, Blaise Sheridan, Research Assistant, Scott Baker, Research Assistant. February 1, 2010. http://offshorewind.net/Other_Pages/Links%20Library/MarylandsOffshorewindPowerPotential-feb2010.pdf

  The Power of Offshore Wind A Source of Clean, Reliable, Affordable Electricity for Maryland's Future. Written by: Travis Madsen and, Frontier Group. Brad Heavner, Environment Maryland Research & Policy Center. November 2009. http://www.environmentmaryland.org/uploads/d5/3c/d53ceaec4259276536051bee93934a83/Power-of-Offshore-Wind.pdf

Permitting requirements (links):

Maryland Offshore Energy Framework: http://www.dnr.state.md.us/irc/docs/00014565.pdf

Additional information:

http://www.dnr.state.md.us/

Responsible Agency(Agencies):

Massachusetts

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Regulatory mandate:

The Massachusetts Environmental Policy Act (MEPA) Office is part of the Executive Office of Energy and Environmental Affairs (EEA), an agency of the Commonwealth of Massachusetts. EEA is led by Secretary Richard K. Sullivan, Jr. On behalf of Secretary Sullivan, the MEPA Office conducts reviews of the environmental impacts of development projects and other activities that require one or more State Agency Actions and that exceed MEPA review thresholds, as specified in the MEPA regulations. State Agency Actions include the granting of state permits or licenses, providing state financial assistance, or transferring state-owned land.

Existing Memoranda of Understanding (MOUs):

BOEMRE and Atlantic States (ME, NH, MA, RI, NY, NJ, DE, MD, VA, NC) (6/8/2010): Memorandum of Understanding to create an Atlantic offshore wind energy consortium to coordinate issues of regional applicability for the purpose of promoting the efficient, expeditious, orderly and responsible development of the wind resources of the Atlantic OCS. http://www.boemre.gov/ooc/PDFs/AtlanticConsortiumMOU.pdf

Existing delegations granted for regulatory action:

Massachusetts delegated regulation of some offshore wind development to local officials in the Ocean Management Plan http://www.env.state.ma.us/eea/mop/final-v1/v1-complete.pdf

Existing studies and documents relevant to offshore wind energy since 2007:

Commonwealth of Massachusetts. Goals for Offshore Renewable Energy and Request for Additional Information. December 28, 2010. http://www.mass.gov/Eoeea/docs/doer/renewables/wind/offshore_wind_development.pdf

Massachusetts Ocean Management Plan. Volume 1, Appendix 3 - Wind Energy Screening. December 2009. http://www.env.state.ma.us/eea/mop/final-v1/v1-text.pdf

Offshore Renewable Energy Leasing: Massachusetts. February 2011. Presentation by Maureen A. Bornholdt, Program Manager, Offshore Alternative Energy Programs, Bureau of Ocean Energy Management, Regulation and Enforcement. http://www.boemre.gov/offshore/renewableenergy/PDFs/stateactivities/MA/MAStakeholderMeetings.pdf

Port and Infrastructure Analysis for Offshore Wind Energy Development. February 2010. Prepared for Massachusetts Clean Energy Center. By Tetra Tech EC, Inc. http://www.masscec.com/index.cfm/pk/download/id/11693/pid/11151

Permitting requirements (links):

http://www.mass.gov/czm/permitguide/index.htm

Project construction certifications and permits include:

- Secretarial Certificate issued by the Massachusetts Environmental Policy Act (MEPA) Unit.
- Order of Conditions issued by the local Conservation Commission.
- 401 Water Quality Certification issued by the Department of Environmental Protection (MassDEP).
- Chapter 91 license issued by MassDEP.
- Federal consistency concurrence issued by the Massachusetts Office of Coastal Zone Management (CZM).

Additional information:

Massachusetts Ocean Plan:
http://www.mass.gov/?pageID=eoeeaterminal&L=3&L0=Home&L1=Ocean+%26+Coastal+Management&L2=Massachusetts+Ocean+Plan&sid=Eoeea&b=terminalcontent&f=eea_oceans_mop&csid=Eoeea

http://www.mass.gov/?pageID=eoeeasubtopic&L=4&L0=Home&L1=Energy%2c+Utilities+%26+Clean+Technologies&L2=Renewable+Energy&L3=Wind&sid=Eoeea

Responsible Agency(Agencies):
New Jersey

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Regulatory mandate:

On 7 September 2010, the DEP published in the New Jersey Register the adoption of amendments to the Coastal Permit Program rules, Coastal Zone Management rules and Flood Hazard Area Control Act rules that were proposed on 8 September 2009. The following is a brief overview of the adoption for the benefit of the public but in no way overrides, interprets or otherwise modifies the regulations.

Under the Coastal Permit Program rules, the adopted amendments add a new permit-by-rule and two new coastal general permits for the construction of wind turbines on land; add a new permit-by-rule for the construction of solar panels; and describe the situations in which construction of a wind turbine or solar panel does not require a coastal permit. The adopted amendments to the Coastal Zone Management rules modify setbacks for wind and solar development, identify particular areas where construction of large scale wind turbines would not be appropriate, and set forth monitoring, habitat evaluation and impact assessment requirements for birds, bats and marine organisms. The adopted amendments also allow the construction of a demonstration wind energy facility in the ocean waters of the State to assist in assessing the impacts of such a facility. The adopted amendments to the Flood Hazard Area Control Act rules, N.J.A.C. 7:13, add a new permit-by-rule for the construction of wind turbines on land.

The new rules and adopted amendments are accompanied by a technical manual containing the Department's monitoring guidelines. These guidelines consist of survey protocols to evaluate the impacts of wind turbines on birds and bats in the coastal region.

Rule Adoption: http://www.nj.gov/dep/cmp/wind-solar-energy-adopt.pdf
Technical Manual for Evaluating Wildlife Impacts of Wind Turbines Requiring Coastal Permits: http://www.nj.gov/dep/cmp/wind-monitoring-protocol.pdf
Large Scale Wind Turbine Siting Map Report (PDF) : http://www.nj.gov/dep/cmp/windreport090908f.pdf
Large Scale Wind Turbine Siting Map: http://www.nj.gov/dep/gis/stateshp.html#WTS

Existing Memoranda of Understanding (MOUs):

BOEMRE and Atlantic States (ME, NH, MA, RI, NY, NJ, DE, MD, VA, NC) (6/8/2010): Memorandum of Understanding to create an Atlantic offshore wind energy consortium to coordinate issues of regional applicability for the purpose of promoting the efficient, expeditious, orderly and responsible development of the wind resources of the Atlantic OCS. http://www.boemre.gov/ooc/PDFs/AtlanticConsortiumMOU.pdf

Existing delegations granted for regulatory action:

None were identified relevant to offshore wind energy.

Existing studies and documents relevant to offshore wind energy since 2007:

- ENVIRONMENTAL BASELINE AND MONITORING

An Assessment of the Potential Costs and Benefits of Offshore Wind Turbines. A Report For The State of New Jersey. Global Insight Energy, Lexington, MA. September 2008. http://www.njcleanenergy.com/files/file/Renewable_Programs/Economic%2520Assessment%2520of%2520NJ%2520OSWT-03Sept08.pdf

BOEMRE New Jersey Task Force Meeting. Renewable Energy Uses of the Outer Continental Shelf, Trenton, New Jersey. May 12, 2010. Presentation by Will Waskes, Office of Offshore Alternative energy Programs, BOEMRE. http://www.boemre.gov/offshore/renewableenergy/PDFs/stateactivities/NJ/NJ_TaskForceMeetingRFIPresentationFinal.pdf

Issuance of Leases for Wind Resource Data Collection on the Outer Continental Shelf Offshore Delaware and New Jersey Environmental Assessment. June 2009. Published by U.S. Department of the Interior, Minerals

Management Service, Environmental Division. OCS EIS/EA, MMS 2009-025. http://www.boemre.gov/offshore/renewableenergy/PDF/FinalEA_MMS2009-025_IP_DE_NJ_EA.pdf

Large Scale Wind Turbine Siting Map Report. New Jersey Department of Environmental Protection. September 8, 2009. http://www.nj.gov/dep/landuse/forms/wind_report090908f.pdf

Ocean/Wind Power Ecological Baseline Studies January 2008 – December 2009. Final Report. Volume I: Overview, Summary, and Application. July 2010. Prepared by Geo-Marine, Inc. Plano, TX. http://www.nj.gov/dep/dsr/ocean-wind/final-volume-1.pdf

Ocean/Wind Power Ecological Baseline Studies January 2008 – December 2009. Final Report. Volume II: Avian Studies. July 2010. Prepared by Geo-Marine, Inc. Plano, TX. http://www.nj.gov/dep/dsr/ocean-wind/final-volume-2.pdf

Ocean/Wind Power Ecological Baseline Studies January 2008 – December 2009. Final Report. Volume III: Marine Mammal and Sea Turtle Studies. July 2010. Prepared by Geo-Marine, Inc. Plano, TX. http://www.nj.gov/dep/dsr/ocean-wind/final-volume-3.pdf

Ocean/Wind Power Ecological Baseline Studies January 2008 – December 2009. Final Report. Volume IV: Fish and Fisheries Studies. July 2010. Prepared by Geo-Marine, Inc. Plano, TX. http://www.nj.gov/dep/dsr/ocean-wind/final-volume-4.pdf

- SOCIAL ECONOMICS

An Assessment of the Potential Costs and Benefits of Offshore Wind Turbines. A Report For The State of New Jersey. Global Insight Energy, Lexington, MA. September 2008. http://www.njcleanenergy.com/files/file/Renewable_Programs/Economic%2520Assessment%2520of%2520NJ%2520OSWT-03Sept08.pdf

- GENERAL

Large Scale Wind Turbine Siting Map Report. New Jersey Department of Environmental Protection. September 8, 2009. http://www.nj.gov/dep/landuse/forms/wind_report090908f.pdf

MMS New Jersey Task Force Meeting. Renewable Energy Uses of the Outer Continental Shelf, Trenton, New Jersey. May 12, 2010. Presentation by Will Waskes, Office of Offshore Alternative energy Programs, Minerals Management Service. http://www.boemre.gov/offshore/renewableenergy/PDFs/stateactivities/NJ/NJ_TaskForceMeetingRFIPresentationFinal.pdf

Permits and Approvals for Construction of Offshore Wind Facilities. December 2007. http://www.nj.gov/dep/pcer/docs/windoffshore.pdf

Permitting requirements (links):

Below is a list of the permits and approvals that are most likely to be required from the New Jersey Department of Environmental Protection and similar permits and approvals required.

Construction within State Waters (Within 3 geographic or approximately 3.5 statute miles of shore)

- Waterfront Development permit (N.J.S.A. 12:5-3)
- Tidelands Conveyance (N.J.S.A. 12:3-1)
- Concurrence with Federal Consistency determination (16 USC § 1456)
- Water Quality Certificate under Section 401 of the Clean Water Act for any discharge
- Environmental review provisions of New Jersey Executive Order No. 215 of 1989 (EO #215) may be triggered if the New Jersey Board of Public Utilities grants at least 20% financial assistance and an Environmental Impact Statement under NEPA is not required

Construction within Federal Waters (More than 3 geographic or approximately 3.5 statute miles from shore)

- Concurrence with Federal Consistency determination (16 USC § 1456)
- Environmental review provisions of NJ Executive Order No. 215 of 1989 (EO #215) may be triggered if the New Jersey Board of Public Utilities grants at least 20% financial assistance and an Environmental Impact Statement under NEPA is not required

Construction of Associated Onshore Facilities such as Electrical Substations, Cables and Transmission Lines

- CAFRA permit (N.J.S.A. 13:19-1 et seq.)
- Upland Waterfront Development permit (N.J.S.A. 12:5-3)
- Freshwater Wetlands permit (N.J.S.A. 13:9B-1 et seq.)
- Coastal Wetlands permit (N.J.S.A. 13:9A-1 et seq.)
- Flood Hazard Area Control Act permit (N.J.S.A. 58:16A-1 et seq.)
- Water Quality Certificate under Section 401 of the Clean Water Act for any discharge of dredged or fill material
- Environmental review provisions of NJ Executive Order No. 215 of 1989 (EO #215) may be triggered if the New Jersey Board of Public Utilities grants at least 20% financial assistance and an Environmental Impact Statement under NEPA is not required

For more information regarding permitting:
http://www.nj.gov/dep/pcer/docs/pifupdate.pdf
http://www.nj.gov/dep/pcer/extension.htm

Additional information:

New Jersey's Energy Master Plan (EMP) calls for a minimum of 1,000 megawatts of off shore wind (OSW) capacity to be developed in New Jersey by 2012 and a minimum of 3,000 MW of off-shore wind by 2020. In order to further the goals set by the Energy Master Plan, the Board has established a public stakeholder process to begin the development of amendments to the Renewable Portfolio Standards (RPS) rules (N.J.A.C. 14:8-1.2) to set minimum percentages for off-shore wind energy. This working group will provide input on the RPS amendments and related questions.
http://www.njcleanenergy.com/main/clean-energy-council-committees/offshore-wind

Responsible Agency(Agencies):

New York

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Regulatory mandate:

As home to New York's coastal program, the Department of State (DOS) has New York's only decisional authority that applies in federal waters. As such, DOS leads the state's involvement in matters pertaining to the leasing of offshore waters for wind development. DOS has engaged in a number of efforts to facilitate the state's involvement in licensing any future projects that would be located offshore the state.

Through the Coastal Zone Management Act and consistent with BOEMRE's offshore leasing process, DOS has initiated an offshore planning process to identify potentially appropriate sites for offshore wind development; these sites may be forwarded to BOEMRE for issuance of Requests for Commercial Interest and the state may request certain sites to be considered as Wind Energy Areas under the Smart from the State initiative.

Existing Memoranda of Understanding (MOUs):

- BOEMRE and Atlantic States (ME, NH, MA, RI, NY, NJ, DE, MD, VA, NC) (6/8/2010): Memorandum of Understanding to create an Atlantic offshore wind energy consortium to coordinate issues of regional applicability for the purpose of promoting the efficient, expeditious, orderly and responsible development of the wind resources of the Atlantic OCS. http://www.boemre.gov/ooc/PDFs/AtlanticConsortiumMOU.pdf
- DOS leads the state's participation in the New York – BOEMRE Offshore Renewable Energy Task Force. In addition to regulatory coordination on a project-by-project basis, the New York-BOEMRE Task Force will also be used as a vehicle for involving other local, state, and federal government entities in our offshore planning process. (BOEMRE New York Task Force Statement).
- New York was the principle convener of the Mid-Atlantic Regional Council on the Ocean, a five-state partnership to improve coordination on shared ocean issues, including offshore wind development. DOS leads New York's participation in MARCO, and our Deputy Secretary of State, George Stafford, represents the Mid-Atlantic on the National Ocean Council's Governance Coordinating Committee. (Signed Mid-Atlantic Governors Agreement).

Existing delegations granted for regulatory action:

None were identified relevant to offshore wind energy.

Existing studies and documents relevant to offshore wind energy since 2007:

Assessment of Offshore Wind Power Resources. August 22, 2007. Prepared by PACE Global Energy Services, Fairfax, VA. Prepared for: Long Island Power Authority. http://www.lipower.org/newscenter/pr/2007/pace_wind.pdf

Joint Con Edison – LIPA Offshore Wind Power Integration Project Feasibility Assessment. March 20, 2009. http://www.linycoffshorewind.com/PDF/Feasibility%20Study.pdf

Offshore Wind Technology Overview. NYSERDA PON 995, Task Order No. 2, Agreement No. 9998. For the Long Island – New York City Offshore Wind Collaborative. Submitted by: AWS Truewind, LLC, Albany, NY. September 17, 2009. http://www.linycoffshorewind.com/PDF/AWS%20Truewind%20Offshore%20Wind%20Technology%20Final%20Report.pdf

Permitting requirements (links):

DOS is amending its Coastal Management Program (CMP), under the authority of the federal Coastal Zone Management Act (CZMA) of 1972, to appropriately site offshore wind energy facilities and provide greater protection of ocean habitats. http://www.nyswaterfronts.com/downloads/pdfs/NYS_CMP_Amendment.pdf

Additional information:

None

Responsible Agency(Agencies):
North Carolina

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Regulatory mandate:

The Coastal Resources Commission, or CRC, was created when the General Assembly adopted the Coastal Area Management Act in 1974. The CRC establishes policies for the North Carolina Coastal Management Program and adopts implementing rules for both CAMA and the North Carolina Dredge and Fill Act. The commission designates areas of environmental concern, adopts rules and policies for coastal development within those areas, and certifies local land-use plans.

Existing Memoranda of Understanding (MOUs):

BOEMRE and Atlantic States (ME, NH, MA, RI, NY, NJ, DE, MD, VA, NC) (6/8/2010): Memorandum of Understanding to create an Atlantic offshore wind energy consortium to coordinate issues of regional applicability for the purpose of promoting the efficient, expeditious, orderly and responsible development of the wind resources of the Atlantic OCS. http://www.boemre.gov/ooc/PDFs/AtlanticConsortiumMOU.pdf

Existing delegations granted for regulatory action:

None were identified relevant to offshore wind energy.

Existing studies and documents relevant to offshore wind energy since 2007:

- SOCIAL ECONOMICS

  General Assembly of North Carolina Session 2011 S 1 Senate Bill 747 Short Title: Offshore Wind Jobs and Economic Development. (Public) Sponsors: Senators Hartsell, Stein, Bingham; Rouzer and Vaughan. Referred to: Commerce. April 20, 2011. http://www.ncga.state.nc.us/Sessions/2011/Bills/Senate/PDF/S747v1.pdf

- GENERAL

  Carlson, David. The Application of Ocean Zoning Management for Offshore Energy Development in North Carolina. April 2009. dukespace.lib.duke.edu/dspace/handle/10161/965

  Coastal Wind: Energy for North Carolina's Future. A Study of the Feasibility of Wind Turbines in the Pamlico and Albemarle Sounds and in Ocean Waters off the North Carolina Coast. Prepared for the North Carolina General. Assembly by the University of North Carolina at Chapel Hill. June 2009. http://www.climate.unc.edu/coastal-wind/Coastal%20Wind-%20Energy%20for%20NC2019s%20Future.pdf

  Considerations For Siting Offshore Wind Farms Off North Carolina. Presentation by Michael Ernst, Jennifer Ghiloni, Tetra Tech. November 5, 2010. http://www.energync.net/wdocs/weatherization/11-05-2010_TetraTechNCSlides.pdf

  General Assembly of North Carolina Session 2011 S 1 Senate Bill 747 Short Title: Offshore Wind Jobs and Economic Development. (Public) Sponsors: Senators Hartsell, Stein, Bingham; Rouzer and Vaughan. Referred to: Commerce. April 20, 2011. http://www.ncga.state.nc.us/Sessions/2011/Bills/Senate/PDF/S747v1.pdf

  Offshore Wind Energy Development in North Carolina: Discussion of the Legal Framework. From the North Carolina Coastal Resources Law, Planning and Policy Center. Legal Tides. Spring/Summer 2008. By Lisa C. Schiavinato, J.D.; Law, Policy and Community Development Specialist, North Carolina Sea Grant; Co-Director, North Carolina Coastal Resources Law, Planning and Policy Center. http://www.nccoastallaw.org/legaltides/lt_springsummer_08.pdf

  Offshore Wind for North Carolina Information for State Leaders and Task Force Members. Presented to North Carolina State Leadership. 5 November 2010. http://www.energync.net/resources/docs/11-05-2010_OffshoreWindPresentation.pdf

  Offshore Wind in North Carolina Advisory Subcommittee – Offshore Energy Exploration. April 27, 2009. Bob Leker, Renewables Program Manager, State Energy Office. http://www.ncleg.net/documentsites/committees/OEESC/4-27-09%20Meeting/NC%20Offshore%20Wind.pdf

  Quantitative Assessment of Ocean-Based Renewable Energy Zones in North Carolina. University of North Carolina at Chapel Hill Department of Marine Sciences. May 21, 2010. Prepared for the North Carolina State Energy Office,

Georgia Environmental Finance Authority, Southern Alliance for Clean Energy, and U.S. Department of Energy by Dr. Harvey Seim and Chris Calloway. http://nccoos.org/projects/nc-wind-economics/study-report

Wind Over North Carolina Waters: The State's Preparedness to Address Offshore and Coastal Water-Based Wind Energy Projects. Joseph J. Kalo And Lisa C. Schiavinato. 9 September 2009. http://www.nccoastallaw.org/pubs/Kalo_Schiavinato_windNC09.pdf

Permitting requirements (links):

http://portal.ncdenr.org/web/deao/start/overview

There is no North Carolina statutory or regulatory framework currently in place that governs offshore wind energy. However, there are current statutes that may apply and permits that may need to be obtained. The potentially relevant states laws include the Coastal Area Management Act (CAMA), North Carolina Environmental Policy Act (NCEPA), North Carolina Dredge and Fill Act, North Carolina Public Utilities Act, and North Carolina Archives and History Act. However, it is not clear-cut which law would control the permitting process.
http://www.nccoastallaw.org/legaltides/lt_springsummer_08.pdf

Additional information:

None

Responsible Agency(Agencies):

Rhode Island

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Regulatory mandate:

- Coastal Resources Management Council's (CRMC) enabling act, R.I.G.L. §§ 46-23-1 *et seq.*
- CRMC Coastal Zone Management Act Federal Consistency Review
- Rhode Island Endangered Species Act
- Rhode Island Aquaculture Regulations
- Fisheries Management
- Energy Facility Siting Act
- The Rhode Island Bays, Rivers, and Watersheds Coordination Team

Existing Memoranda of Understanding (MOUs):

BOEMRE and Atlantic States (ME, NH, MA, RI, NY, NJ, DE, MD, VA NC) (6/8/2010): Memorandum of Understanding to create an Atlantic offshore wind energy consortium to coordinate issues of regional applicability for the purpose of promoting the efficient, expeditious, orderly and responsible development of the wind resources of the Atlantic OCS. http://www.boemre.gov/ooc/PDFs/AtlanticConsortiumMOU.pdf

Existing delegations granted for regulatory action:

None were identified relevant to offshore wind energy.

Existing studies and documents relevant to offshore wind energy since 2007:

Ocean Special Area Management Plan. 10/19/2010 Approved Ocean SAMP. Chapter 8: Renewable Energy and Other Offshore Development. http://seagrant.gso.uri.edu/oceansamp/pdf/samp_approved/800_renewable_OCRMchanges_5.4_Clean.pdf

Ocean Zoning and Offshore Wind Farms in Rhode Island. December 2008. The Commerical Fisheries Center of Rhode Island. Special Edition Newsletter. http://www.cfcri.com/pdf/specnews.pdf

Rhode Island Offshore Wind Stakeholders Final Report. February 2008. Prepared for Rhode Island Governor Carcieri and the Rhode Island Office of Energy Resources. Prepared by Peregrine Energy Group, Inc., Boston, MA. http://www.energy.ri.gov/documents/renewable/RI_Offshore_Wind_Stakeholders_Final_Report_February_2008.pdf

Summary Report Riwinds (Rhode Island Energy Independence 1) Phase I Siting Study. Prepared By: Applied Technology And Management, Inc., Loria Emerging Energy Consulting, LLC. September 2007. http://www.energy.ri.gov/documents/renewable/RIWINDS_RANKING.pdf

Permitting requirements (links):

http://seagrant.gso.uri.edu/oceansamp/pdf/samp_approved/1000_existingpolicies_APPROVED_5.4_Clean.pdf

Additional information:

Rhode Island Ocean Special Area Management Plan
http://seagrant.gso.uri.edu/oceansamp/

Responsible Agency(Agencies):

South Carolina

Contact information:

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Regulatory mandate:

The South Carolina Coastal Management Program was established under the guidelines of the national Coastal Zone Management Act (1972) as a state-federal partnership to comprehensively manage coastal resources. It was authorized in 1977 under South Carolina's Coastal Tidelands and Wetlands Act (CTWA) with the goal of achieving balance between the appropriate use, development, and conservation of coastal resources in the best interest of all citizens of the state.

DHEC's Office of Ocean and Coastal Resource Management (DHEC-OCRM) is the designated state coastal management agency and is responsible for the implementation of the state's Coastal Management Program. Implementation includes the direct regulation of impacts to coastal resources within the critical areas of the state including coastal waters, tidelands, beaches and beach dune systems; and indirect certification authority over federal actions and state permit decisions within the eight coastal counties.

The South Carolina Regulatory Task Force for Coastal Clean Energy was established under the 2008 grant from the U.S. Department of Energy. The goal of the Regulatory Task Force is to foster a regulatory environment conducive to wind, wave and tidal energy development in state waters. The Regulatory Task Force is comprised of the full spectrum of state and federal regulatory and resource protection agencies, universities, private industry and utility companies.

Existing Memoranda of Understanding (MOUs):

- Public Service Commission & SC Coastal Council (1978): Memorandum of Agreement that may need to be strengthened and updated

Existing delegations granted for regulatory action:

None were identified relevant to offshore wind energy.

Existing studies and documents relevant to offshore wind energy since 2007:

Offshore Wind Transmission Study. June 2010. Prepared by: Clemson University Electric Power Research Association. http://www.energy.sc.gov/publications/CUEPRA_Offshore_Wind_Transmission_Report_%207-10.pdf

Potential for OffshoreOffshroe Wind Development in the Southeast and South Carolina; Workshop on Offshore Wind Energy Development March 24, 2010. Presentation by Dr. Nicholas C. Rigas. http://www.energy.sc.gov/UserFiles/File/ThePotentialforWindEnergyDevelopment-NRigas.pdf

Regulatory Task Force for Coastal Clean Energy; Workshop on Offshore Wind Energy Development March 24, 2010. http://www.energy.sc.gov/index.aspx?m=6&t=85&h=904

South Carolina Regulatory Task Force for Coastal Clean Energy Response to the U.S. Department of Energy Request for Information DE-FOA-EE0000384 DOE Offshore Wind Program – Input Requested for Demonstration Projects. July 14, 2010.

South Carolina's Role in Offshore Wind Energy Development. Prepared in response to Act 318 of 2008 A Joint Resolution Requiring Recommendations from the Wind Energy Production Farms Feasibility Study Committee. http://www.energy.sc.gov/publications/Wind%20Energy%20Production%20Farms%20Feasibility%20Study%20Committee%20Final%20Report%2012-09%20(2).pdf

Permitting requirements (links):

http://www.scdhec.gov/administration/library/CR-003631.pdf

The Regulatory Task Force analyzed how the existing state and federal regulatory framework would apply to a potential offshore wind project in state waters. The Regulatory Task Force first reviewed the Minerals Management Service's *Programmatic Environmental Impact Statement*, which includes a listing of the potential resource impacts from offshore wind projects. The Regulatory Task Force reviewed each resource impact and identified relevant existing regulations and the responsible agency(s). Then, the group identified lead permitting authorities and timeframes associated with those regulations.

As a result of this analysis, the Regulatory Task Force concluded that no major regulatory gaps currently exist for permitting an offshore wind project in state waters. While recognizing that certain aspects of offshore projects may benefit from new regulation development, such as standards and procedures for transmission lines, siting, etc., the Regulatory Task Force was also able to identify a regulatory path and clarify the timeframes associated with the existing regulatory process. While the Regulatory Task Force concluded that these initial findings provide a strong foundation for possible wind energy developments in state waters, it identified four recommended actions that South Carolina should take in order to facilitate the development of offshore wind energy in the state.

Additional information:

The article on pages 4 andand 5 in this publication of the U.S. Army Corps of Engineers summarizes some of the regulatory work that has been conducted in South Carolina regarding offshore wind energy development. http://www.saj.usace.army.mil/Divisions/Executive/Branches/CCO/spectrum.htm

The Palmetto Wind Research Project is designed to physically measure and refine the modeling of the spatial variation of the wind field within Long Bay. http://bccmws.coastal.edu/projects/palmetto-wind-research-project

South Carolina is in the process of forming a state-federal BOEMRE task force.

Responsible Agency(s):

Virginia

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Regulatory mandate:

In its 2009 legislative session, the General Assembly passed SB1350, which enlarges on the existing authority of the Virginia Marine Resources Commission (VMRC) to lease subaqueous lands in state waters, specifically authorizing leases for the purpose of commercial production or transmission of marine renewable energy, including but not limited to offshore wind power. SB1350 has four enactment clauses, described below:

1. The first enactment clause amends § 28.2-1208 in Chapter 766 of the Code of Virginia on granting easements in or leasing subaqueous lands in state waters, as follows:
   - Adds new language for marine renewable energy generation and transmission
   - Specifies lease terms not to exceed 30 years; purchase payments for easements and production-based royalties remain to be determined
   - Requires all production-based royalties from generation or transmission of electrical or compressed air energy from marine renewable resources to be appropriated to VCERC
2. The second enactment clause directs the VMRC to:
   - Identify 100 acres suitable for use by VCERC as a research test bed
   - Determine if sufficient subaqueous lands exist in state waters to support commercial generation and transmission of offshore wind energy
   - Submit report of above findings to the General Assembly by 1 March 2010
3. The third enactment clause states that if such land exists, the VMRC shall offer the land for development in a lease auction pursuant to requirements and provisions of subsections A and B of § 28.2-1208
4. The fourth enactment clause states that nothing in this act requires or prohibits auctions of leases for generation or transmission of renewable energy in federal waters of the outer continental shelf (OCS)

Existing Memoranda of Understanding (MOUs):

- BOEMRE and Atlantic States (ME, NH, MA, RI, NY, NJ, DE, MD, VA NC) (6/8/2010): Memorandum of Understanding to create an Atlantic offshore wind energy consortium to coordinate issues of regional applicability for the purpose of promoting the efficient, expeditious, orderly and responsible development of the wind resources of the Atlantic OCS. http://www.boemre.gov/ooc/PDFs/AtlanticConsortiumMOU.pdf
- States of Delaware and Maryland and the Commonwealth of Virginia (11/9/2009): Memorandum of Understanding related to common interests associated with offshore wind energy development.
- The Mid Atlantic Council on the Oceans (MARCO) is developing a Mapping and Planning Portal as an online tool that allows state, federal, and local decision-makers and the public to visualize, query, map, and analyze ocean and coastal data in the Mid-Atlantic region. The five MARCO states agreed to work together to develop a regional, web-based portal as part of their 2009 action plan. In response to this need, the Virginia Coastal Zone Management Program (www.deq.state.va.us/coastal/ocean.htm) provided funding (through their CZM Award from the National Oceanic and Atmospheric Administration [NOAA]) for creation of this prototype mapping and planning portal for the Mid-Atlantic region. The portal was developed by a team of representatives from each of the Mid-Atlantic States, NOAA, and The Nature Conservancy and is available at http://maps.tnc.org/MARCO/index.html
- The Virginia Offshore Wind Coalition (VOW) was formed in late 2009 to bring together industry stakeholders such as manufacturers, utilities, localities, developers and other supply chain members. VOW has worked to encourage the development of offshore wind energy in Virginia as well as promoting Virginia as the hub for the industry. http://www.vowcoalition.org

Existing delegations granted for regulatory action:

Projects must conform to approved plans for achieving National Ambient Air Quality Standards. Requires the EPA - or authorized state agencies - to issue a permit before the construction of, or major modification to, any major stationary source of air pollution. www.access.gpo.gov/nara/cfr/waisidx_02/40cfr50_02.html

Existing studies and documents relevant to offshore wind energy since 2007:

- TECHNOLOGY ASSESSMENT AND SAFETY

  Atlantic Wind Energy Science and Technology Workshop: Virginia Activities. (Compiled by Ken Jurman Ken.Jurman@dmme.virginia.gov).

  Geary, Ryan D. A Review of Offshore Wind Technology and the Development of the Virginia Coastline and Outer Continental Shelf. M.S. Thesis. James Madison University. December 2009. http://www.lib.jmu.edu/general/etd/2009/Masters/Geary_RyanD/gearyrd_masters_12-10-2009_01.pdf

  Meteorological Tower Placement Report to the Virginia Offshore Wind Development Authority (VOWDA), Virginia Department of Mines, Minerals, and Energy. December 7, 2010. http://www.dmme.virginia.gov/DE/VOWDA/MeteorologicalTowerPlacementReport.pdf

- GENERAL

  Atlantic Wind Energy Science and Technology Workshop: Virginia Activities. (Compiled by Ken JurmanNavigating DEQ's Wind Energy Permit by Rule. Presentation by Carol C. Wampler, Virginia Department of Environmental Quality, Virginia Wind Energy Collaborative, State Wind Energy Symposium, James Madison University. June 16, 2010. Ken.Jurman@dmme.virginia.govhttp://vwec.cisat.jmu.edu/workshop/Presentations/Wampler%20-%20Navigating%20Wind%20PBR.pdf).

  Offshore Wind Development Potential and Possible Timetables on Virginia's OCS. Virginia Offshore Wind Coalition Board Meeting. Virginia Beach Department of Economic Development, Virginia Beach, VA. 12 January 2009. George Hagerman, VCERC Director of Research, Virginia Tech Advanced Research Institute, Arlington, VA. http://www.vcerc.org/VCERC_Final_Report_Offshore_Wind_Studies_Full_Report_new.pdf

  Report of the Virginia Marine Resources Commission Opportunities for Offshore Wind Energy in State Territorial Waters. To the Governor and the General Assembly of Virginia, Senate Document No. 10, Commonwealth of Virginia, Richmond. 2010. Virginia Offshore Wind Studies, July 2007 to March 2010, Final Report. 20 April 2010.

  Timeline of Offshore Wind In Virginia. 2010. http://www.dmme.virginia.gov/DE/VOWDA/VAOffshoreWindTimeline.pdf

  Virginia Offshore Wind Integration Study. Dominion Virginia Power, Electric Transmission Planning Department. November 30, 2010. http://www.dmme.virginia.gov/DE/VOWDA/DominionOffShoreWindStudyReport.pdf

  Virginia Offshore Wind Studies, July 2007 to March 2010. Final Report 20 April 2010. Virginia Coastal Energy Research Consortium. http://www.vcerc.org/VCERC_Final_Report_Offshore_Wind_Studies_Full_Report_newest.pdf

  Virginia's Capstone Response to Request for Information DE-FOA-EE0000385 "DOE Offshore Wind Program – Input Requested for Demonstration Projects." July 14, 2010. http://media2.wavy.com/html/PDFs/71410%20Virginia%20DOE%20Offshore%20Wind%20RFI%20Response%20Final.pdf

Permitting requirements (links):

Permit By Rule (Not relevant in federal waters, but comes into play for near-shore and on-shore turbine testing: http://vwec.cisat.jmu.edu/workshop/Presentations/Wampler%20-%20Navigating%20Wind%20PBR.pdf

Virginia Marine Resource Commission has authority to grant permits in Virginia waters. This will come into play bringing transmission onto shore: http://www.mrc.state.va.us.

Navigating DEQ's Wind Energy Permit by Rule. Presentation by Carol C. Wampler, Virginia Department of Environmental Quality, Virginia Wind Energy Collaborative, State Wind Energy Symposium, James Madison University. June 16, 2010. http://vwec.cisat.jmu.edu/workshop/Presentations/Wampler%20-%20Navigating%20Wind%20PBR.pdf

Additional information:

The 2010 General Assembly passed legislation creating the Virginia Offshore Wind Development Authority (VOWDA) as a body corporate and a political subdivision of the Commonwealth of Virginia. VOWDA is charged with collecting meteorological, oceanographic, avian, and marine environmental data by working with NOAA to upgrade its equipment on the Chesapeake Light Tower, and/or establishing a public-private partnership to design, fabricate, and install new offshore data acquisition towers, among other efforts that would be intended to promote the development and deployment of offshore wind energy systems in Virginia: http://www.dmme.virginia.gov/DE/vowda.shtml.

2010 – General Assembly passes legislation allowing utilities to receive triple credit toward meeting the renewable energy portfolio standard for energy derived from offshore wind: http://leg1.state.va.us/cgi-bin/legp504.exe?101+ful+CHAP0850+pdf.

Dominion has announced plans to implement a more detailed scoping study for an offshore transmission line. Dominion plans to complete the study this year, evaluating options to best support multiple offshore wind projects off the coast of Virginia. The company would work with PJM Interconnection through its Regional Transmission Expansion Planning process. The Virginia State Corporation Commission would have to approve any power line project as well.

Additional studies not specific to an Agency relevant to offshore wind energy since 2007:

- SOCIAL ECONOMICS

  Firestone, Jeremy and Willett Kempton. Public opinion about large offshore wind power: Underlying factors. Energy Policy 35 (2007) 1584–1598. June 2006. http://www.ceoe.udel.edu/windpower/docs/FireKemp07-PubOpinUnderly.pdf

  Lilley, Meredith Blaydes, Jeremy Firestone and Willett Kempton. The Effect of Wind Power Installations on Coastal Tourism. http://www.mdpi.com/1996-1073/3/1/1/pdf

  Offshore Wind in the Atlantic. Growing Momentum for Jobs, Energy Independence, Clean Air, and Wildlife Protection. National Wildlife Federation 2010. http://www.environmentamerica.org/uploads/5f/dd/5fdd4efa76afd8f9cd65f55acd6a7eb8/NWF-OSW-report-FINAL.pdf

- TECHNOLOGY ASSESSMENT AND SAFETY

  Sheppard, R.E. and F.J. Puskar. Inspection Guidance for Offshore Wind Turbine Facilities. Proceedings of the Offshore Technology Conference. May 2010. http://www.energoeng.com/Documents/Energo-OTC2010_20656_Inspection_Guidance_for_Offshore_Wind_Turbine_Facilities.pdf

  Shim, Sangyun. Coupled Dynamic Analysis Of Floating Offshore Wind Farms. M.S. Thesis, Texas A & M University. December 2007. http://repository.tamu.edu/bitstream/handle/1969.1/ETD-TAMU-2564/SHIM-THESIS.pdf?sequence=1

- FLYING ANIMALS

  Watts, Bryan D. Wind and Waterbirds: Establishing sustainable mortality limits within the Atlantic Flyway. Center for Conservation Biology Technical Report Series, CCBTR-10-05. College of William and Mary/Virginia Commonwealth University, Williamsburg, VA. 43pp. http://www.ccb-wm.org/news/paper/CCBTR1005_wind_birds.pdf

- GENERAL

  Campbell, Holly Victoria Pink Campbell. The Development of an Institutional and Regulatory Policy Framework for Offshore Renewable Energy. Ph.D. dissertation, Oregon State University. March 15, 2011. http://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/20868/CampbellHollyVP2011.pdf?sequence=3

  Center for Regulatory Effectiveness. Smart From the Start: Not The Smartest Solution To Ocean Zoning. April 8, 2011. http://www.thecre.com/creipd/wp-content/uploads/2011/04/CRE-report-on-Coastal-and-Marine-Spatial-Planning.pdf

  CRS Report for Congress. Wind Power in the United States: Technology, Economic, and Policy Issues. June 20, 2008. Jeffrey Logan and Stan Mark Kaplan, Specialists in Energy Policy, Resources, Science, and Industry Division. http://www.fas.org/sgp/crs/misc/RL34546.pdf

  Dhanju, Amardeep and Jeremy Firestone. Access System Framework for Regulating Offshore Wind Power in State Waters. Coastal Management 37(5): 441-478. September 2009. Wind Energy: Offshore Permitting. Adam Vann, Legislative Attorney. August 11, 2010. Congressional Research Service. http://www.cnie.org/nle/crsreports/10Sep/R40175.pdf http://www.ceoe.udel.edu/windpower/docs/DhanjuFire09-AccessFramework-OW.pdf

  FAA Wind Tower Relevant Legislations. Code of Federal Regulations. Title 14: Aeronautics and Space. Part 77 – Safe, Efficient Use, and Preservation of the Navigable Airspace. http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&rgn=div5&view=text&node=14:2.0.1.2.9&idno=14

  Federal and State Measures Expedite Offshore Permitting. By Jim Lanard & Daron Threet. Offshore Wind. Spring 2011 supplement. http://www.dicksteinshapiro.com/files/Publication/04e5a369-5c1f-4e1b-80b3-ce0a5627bfcb/Presentation/PublicationAttachment/7208013a-8289-431e-89b9-d30b81f25c55/Federal_State__Measures_Offshore_Permitting.pdf

  Firestone, Jeremy and Willett Kempton. Public opinion about large offshore wind power: Underlying factors. Energy Policy 35 (2007) 1584–1598. June 2006. http://www.ceoe.udel.edu/windpower/docs/FireKemp07-PubOpinUnderly.pdf

  Great Expectations. U.S. Wind Energy Development Governors' Wind Energy Coalition's 2010 Wind Energy Recommendations. March 2010. http://www.governorswindenergycoalition.org/assets/files/GWC%202010%20Recommendations%20(FINAL%203-16-10).pdf

  Lilley, Meredith Blaydes, Jeremy Firestone and Willett Kempton. The Effect of Wind Power Installations on Coastal Tourism. http://www.mdpi.com/1996-1073/3/1/1/pdf

  Mikhail, Amir. Wind Energy in the Southeast: Offshore and Land-Based Potential. Georgia Tech – Clean Energy Speaker Series. Southeast Wind Energy: Is an Answer Blowing in the Wind? September 29, 2010. http://www.secleanenergy.org/files/Mikhail.pdf

  Offshore Wind in the Atlantic. Growing Momentum for Jobs, Energy Independence, Clean Air, and Wildlife Protection. National Wildlife Federation 2010. http://www.environmentamerica.org/uploads/5f/dd/5fdd4efa76afd8f9cd65f55acd6a7eb8/NWF-OSW-report-FINAL.pdf

  Regulatory Uncertainty Hinders Offshore Wind Development. Electric Light & Power. by Patricia Fleischauer, TRC

Cos. Inc. http://www.trcsolutions.com/NewsRoom/Articles/Documents/ELP%20offshore%20wind.pdf
Sheppard, R.E. and F.J. Puskar. Inspection Guidance for Offshore Wind Turbine Facilities. Proceedings of the Offshore Technology Conference. May 2010. http://www.energoeng.com/Documents/Energo-OTC2010_20656_Inspection_Guidance_for_Offshore_Wind_Turbine_Facilities.pdf
Shim, Sangyun. Coupled Dynamic Analysis Of Floating Offshore Wind Farms. M.S. Thesis, Texas A & M University. December 2007. http://repository.tamu.edu/bitstream/handle/1969.1/ETD-TAMU-2564/SHIM-THESIS.pdf?sequence=1
Snyder, Brian and Mark J. Kaiser. Ecological and economic cost-benefit analysis of offshore wind energy. Renewable Energy 34 (2009) 1567–1578. http://course.bnu.edu.cn/course/hjdx/JXZY/dixuewenxian/2.pdf
Status of U.S. Offshore Wind Development Activity by State. September 2008. U.S. Offshore Wind Collaborative. http://offshorewind.net/Other_Pages/Links%20Library/Sept%202008%20Status%20of%20US%20Offshore%20Wind%20Development%20by%20State.pdf
U.S. Offshore Wind Collaborative. State Offshore Wind Initiatives/ Proposed Projects. August 2010. http://www.usowc.org/pdfs/State_Initiatives_8_3_10.pdf
U.S. Offshore Wind Energy: A Path Forward. A Working Paper of the U.S. Offshore Wind Collaborative. October 2009. http://www.usowc.org/pdfs/PathForwardfinal.pdf
Watts, Bryan D. Wind and Waterbirds: Establishing sustainable mortality limits within the Atlantic Flyway. Center for Conservation Biology Technical Report Series, CCBTR-10-05. College of William and Mary/Virginia Commonwealth University, Williamsburg, VA. 43pp. http://www.ccb-wm.org/news/paper/CCBTR1005_wind_birds.pdf
Weber, Lucas. Offshore Wind Energy Permitting. Spring 2007. Coastal and Oceans Law. http://offshorewind.net/Other_Pages/Links%20Library/Offshore%20Wind%20Energy%20Permitting.pdf