ENVIRONMENTAL LAW INSTITUTE

Delaware Offshore Alternative Energy Framework Review & Recommendations

Prepared for the

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PREPARED BY
THE ENVIRONMENTAL LAW INSTITUTE

FOR THE
STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

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About this Report

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Executive Summary

Amid rising concerns about increasing energy prices, decreasing fossil fuel availability, and a changing climate, the United States has expressed commitment to the development of alternative energy both on- and offshore. Amongst the array of possible resources, much attention has been directed to the offshore wind energy potential in the Mid-Atlantic region. Offshore Delaware alone, a 2010 National Renewable Energy Laboratory study estimated the cumulative wind energy potential within 50 nautical miles of shore to be approximately 14.7 gigawatts, with 5.5 gigawatts located within 3 nautical miles (i.e., Delaware's state waters) and all but 3.5 gigawatts in water depths of less than 30 meters.

Although today there is much interest in them, many federal and state laws were not designed with offshore renewable energy resources in mind. Recognizing this, the five state members of the Mid-Atlantic Regional Council on the Ocean (MARCO) have engaged in individual and collective efforts to assess the strengths and weaknesses of their offshore legal frameworks with regard to renewable energy development. MARCO provides a forum for New York, New Jersey, Delaware, Maryland, and Virginia to work together to address numerous offshore issues, including siting and approval of renewable energy facilities, and to increase regional coordination and collaboration that may be essential to progress in offshore wind development.

This report specifically strives to assist Delaware with offshore renewable energy decision-making and participation in MARCO activities by providing an overview of the relevant federal, interstate, and state laws and regulations affecting renewable energy development offshore of Delaware. It also offers recommendations for strengthening Delaware's governing legal framework. As detailed in the final section, the framework may benefit from efforts to:

1. Strengthen Delaware's ability to plan prospectively for uses of its subaqueous lands, public lands, and other lands for offshore wind generation, transmission, and support facilities;
2. Improve state permitting and leasing programs to take into account the characteristics of offshore renewable energy facilities via the state Subaqueous Lands Act, Coastal Zone Act, Beach Preservation Act, Wetlands Act, Public Lands Laws, and/or enacting a unifying evaluation process;
3. Prioritize development and identification of ERES for offshore waters, as needed;
4. Adopt and strengthen habitat and wildlife protection measures and mitigation;
5. Improve coordination with counties/municipalities;
6. Efficiently coordinate Delaware's interaction with regional/interstate/federal bodies; and
7. Seek change in OCSLA revenue sharing.

Section I. Introduction

a. Purpose of this Report

The Mid-Atlantic Governor's Agreement on Ocean Conservation was signed in June 2009, establishing a framework for the Mid-Atlantic Regional Council on the Ocean (MARCO).[1] New York, New Jersey, Delaware, Maryland and Virginia committed to work together to address a number of important offshore issues, including siting and approval of renewable energy facilities. The relevant goal included in MARCO's Action Plan is "to promote sustainable development of offshore renewable energy resources by addressing regulatory barriers and regional issues regarding the potential impacts of development." The Action Plan divides this goal into three objectives:

1) Develop and finalize shared research and monitoring protocols for *assessing the construction and operations impacts* of energy development on ocean and coastal resources, and identify appropriate opportunities for integration into *permitting conditions.*
2) Define regulatory steps, time frames, and potential barriers to the development of the region's offshore renewable energy resources and identify appropriate coordinating measures.
3) Complete a comprehensive offshore use map and decision-support tool to facilitate siting of renewable energy projects to minimize adverse impacts to other ocean users and ecological communities.[2]

As a member of MARCO, Delaware has a specific interest in how these objectives are addressed, both at the state level and regionally. State, interstate, and federal laws, policies, and programs may affect offshore renewable energy development in the Mid-Atlantic region and offshore of Delaware specifically. This report provides an overview of the primary federal, interstate, and state laws and regulations governing energy development offshore of Delaware, and offers recommendations for strengthening Delaware's governing legal framework. Section II describes the relevant federal laws and regulations, and Section III further identifies interstate agreements that affect offshore energy development in the region. Section IV details Delaware laws, policies, and programs that may affect offshore renewable energy development. Section V offers recommendations to improve Delaware's ability to address the impacts and issues associated with offshore renewable energy activities.

[1] The MARCO website is available at http://www.midatlanticocean.org.
[2] MARCO, *Actions, Timelines, and Leadership to Advance The Mid-Atlantic Governors' Agreement on Ocean Conservation* (August 2009), *available at* http://www.midatlanticocean.org/summary-actions.pdf.

b. Overview of Offshore Wind Potential

Facing decreasing availability of, rising prices for, and increasing concern about the global effects of consumption of fossil fuels, the United States and many states have expressed a commitment to the development of alternative energy both on- and offshore. While traditional offshore energy resources include oil and natural gas, renewable offshore energy resources include wind, hydrokinetic (wave and tidal), algal biomass, and ocean thermal. Of these, offshore wind energy offers the greatest immediate opportunity on the Atlantic coast.

Aided by incentives such as tax credits and loan guarantees, onshore wind generating capacity expanded nationally by 39% in 2009 alone, bringing the national total installed wind generating capacity to just over 35,000 megawatts (MW) in 2009 and over 40,000 MW by the end of 2010.[3] The U.S. Department of Energy (DOE) estimates that the United States has almost 3,000 gigawatts (GW) of potential offshore wind energy resources. Wind is the leading candidate for developable offshore renewable energy in the Mid-Atlantic region. Between New Jersey and North Carolina there is an estimated 569.7 GW of offshore wind energy potential; roughly 298 GW from offshore sites with depths of 0–30 meters and 179 GW from sites in depths of 30–60 meters.[4] According to a 2010 study, the cumulative wind energy potential within 50 nautical miles of Delaware's shoreline is approximately 14.7 GW. Roughly one third (5.5 GW) of the energy potential is within 3 nautical miles of shore (i.e., within Delaware's state waters), and all but 3.5 GW of the energy is in water depths of less than 30 meters.[5]

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[3] *See* Global Wind Energy Council, Global Wind 2009 Report, at 62, *available at* http://www.gwec.net/fileadmin/documents/Publications/Global_Wind_2007_report/GWEC_Global_Wind_2009_Report_LOWRES_15th.%20Apr..pdf.; American Wind Energy Association, *U.S. Wind Industry Year-End 2010 Market Report* (January 2011).

[4] The remaining 92.5 GW is located in depths over 60 meters. The estimates are for offshore areas with annual average wind speeds of 7.0 meters/second or greater, at 90-meter elevations. Walter Musial & Bonnie Ram, Large-Scale Offshore Wind Power in the United States: Assessment of Opportunities and Barriers, NREL/TP-500-40745 (Sept. 2010), at 59 tbl. 4-2 (citing Schwartz et al., Assessment of Offshore Wind Energy, 2010), *available at* http://www.nrel.gov/wind/pdfs/40745.pdf.

[5] Marc Schwartz et al., *Assessment of Offshore Wind Energy Resources for the United States*, NREL/TP-500-45889 (June 2010), at 14, tbl. 2, *available at* http://www.nrel.gov/docs/fy10osti/45889.pdf. The MMS study on OCS wind energy potential was issued in 2006, well before this recent study, and cited wind estimates from a 2004 study that estimated wind potential between 5 and 50 nautical miles offshore, then pro-rated the estimated wind resources to account for potential exclusion zones (such as for shipping lanes and avian, marine mammal, fishery, and visual impact concerns). This resulted in smaller estimates of offshore wind potential. MMS, Technology White Paper on Wind Energy Potential on the U.S. Outer Continental Shelf (May 2006), at 3 tbl. 1, *available at* http://ocsenergy.anl.gov/documents/docs/OCS_EIS_WhitePaper_Wind.pdf; *see also* Walt Musial & Sandy Butterfield, *Future for Offshore wind Energy in the United States*, NREL/CP-500-36313 (June 2004). Schwartz (2010) does not account for possible exclusion zones, but rather attempts to comprehensively quantify offshore potential. *See* Schwartz, at 5.

Table 1. Wind Energy Potential Offshore Delaware[6]

Distance from Shore (nautical miles)

Water Depth (meters)	**0-3 nm**	**3-12 nm**	**12-50 nm**	***TOTAL***
0-30 m	5.4 GW	3.3 GW	2.5 GW	*11.2 GW*
30-60 m	0.1 GW	-	3.4 GW	*3.5 GW*
TOTAL	*5.5 GW*	*3.3 GW*	*5.9 GW*	*14.7 GW*

There is current substantial interest in siting new offshore wind facilities in this region. As of 2010 in the MARCO states, advancing offshore wind projects (i.e., projects that have taken concrete steps toward completion) represent 1950–2700 MW of new generating capacity. Proposed offshore wind projects (i.e., additional projects announced and in the planning stages) may offer another 1850–2250 MW.[7] Currently the only advancing project offshore of Delaware is the NRG Bluewater Wind Park, which may generate between 200–600 MW.[8]

c. Recent National, Mid-Atlantic, and Delaware Offshore Renewable Energy Activities

Congress delegated authority to the Secretary of the Interior to issue leases, easements, and rights-of-way for renewable energy on the Outer Continental Shelf (OCS) by enacting Section 388 of the Energy Policy Act of 2005.[9] Acting through the Minerals Management Service, reorganized in 2010 as the Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE), the Interior Department launched a sequence of actions to promote offshore renewable energy development.[10] The agency prepared a Programmatic Environmental Impact Statement on the potential effects of a nationwide program for alternative energy development and alternate use facilities on the OCS in 2007.[11] Based on this analysis, BOEMRE decided to

[6] *See* Schwartz, *supra* note 5, at 14, tbl 2. The estimates are for offshore areas with annual average wind speeds of 7.0–9.0 meters/second, at 90-metere elevations.
[7] National Wildlife Federation, Offshore Wind in the Atlantic (2010), at 21 fig. 4, 40–49, *available at* http://www.nwf.org/Home/Regional-Centers/~/media/PDFs/Global%20Warming/Reports/NWF-Offshore-Wind-in-the-Atlantic.ashx.
[8] *Id*. at 21 fig. 4, 44–45.
[9] Energy Policy Act of 2005, Pub. Law 109-58, 119 Stat. 744 (2005).
[10] For ease of reference, the term BOEMRE will be used to refer to both the Minerals Management Service and its successor agency.
[11] BOEMRE, Programmatic Environmental Impact Statement for Alternative Energy Development and Production and Alternate Use of Facilities on the Outer Continental Shelf, Final Environmental Impact Statement, MMS 2007-046 (Oct. 2007).

establish an Alternative Energy and Alternate Use (AEAU) Program for renewable energy on the OCS rather than to review proposed activities on a case-by-case basis.[12]

In late 2007, BOEMRE established an interim policy for approving five-year limited leases for offshore technology testing and data collection facilities.[13] Pursuant to this interim policy, it received 43 requests, 10 of which were in the Mid-Atlantic region. BOEMRE selected seven priority areas offshore of Delaware and New Jersey for these limited leases.[14] In June 2009, BOEMRE completed an environmental assessment (which tiered from the PEIS) on the seven priority lease areas.[15] Having received indications of interest in five of the lease areas, BOEMRE recommended issuing leases.[16] Of particular interest to Delaware, one of the lease blocks, known as Salisbury NJ 18-05 (Block 6325), was located approximately 15 miles from the Delaware shoreline, in approximately 40–60 feet of water.[17] After receiving an application for meteorological towers construction and site assessment activities from Bluewater Wind Delaware LLC, on November 1, 2009 BOEMRE executed a five-year limited lease on the block.[18] Three interim leases off New Jersey were also executed the same day.[19]

While pursuing the interim policy, BOEMRE developed regulations to govern the AEAU Program. After conducting an environmental assessment (tiered from the PEIS), BOEMRE promulgated the final regulations in April 2009.[20] In order to enhance coordination of OCS

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[12] Randall B. Luthi, Director, BOEMRE, Record of Decision: Establishment of an OCS Alternative Energy and Alternate Use Program (Dec. 2007), *available at* http://www.ocsenergy.anl.gov/documents/docs/OCS_PEIS_ROD.PDF.

[13] BOEMRE, Request for Information and Nominations of Areas for Leases Authorizing Alternative Energy Resource Assessment and Technology Testing Activities Pursuant to Subsection 8(p) of the Outer Continental Shelf Lands Act, as Amended, 72 Fed. Reg. 62673 (Nov. 6, 2007).

[14] BOEMRE, Notice of Nominations Received and Proposed Limited Alternative Energy Leases on the Outer Continental Shelf (OCS) and Initiation of Coordination and Consultation, 73 Fed. Reg. 21152 (Apr. 18, 2008); BOEMRE, Notice of Nominations Received and Proposed Limited Alternative Energy Leases on the Outer Continental Shelf (OCS) and Initiation of Coordination and Consultation; Correction, 73 Fed. Reg. 23490 (Apr. 30, 2008).

[15] BOEMRE, Environmental Assessment: Issuance of Leases for Wind Resource Data Collection on the Outer Continental Shelf Offshore Delaware and New Jersey, MMS 2009-025 (June 2009), *available at* http://www.boemre.gov/offshore/RenewableEnergy/PDF/FinalEA_MMS2009-025_IP_DE_NJ_EA.pdf.

[16] Walter D. Cruickshank, Acting Director, BOEMRE, Decision Action: Decisions on Issuance of Outer Continental Shelf (OCS) Limited Leases Under the Interim Policy (IP) Offshore Delaware and New Jersey (signed June 12, 2009), *available at* http://www.boemre.gov/offshore/RenewableEnergy/PDFs/DecisionMemoOffshoreDelaware-NewJersey.pdf.

[17] *See* BOEMRE*, supra* note 15, at 2, tbl. 1-1.

[18] MMS, Lease of Submerged Lands for Alternative Energy Activities on the Outer Continental Shelf, Lease No. OCS-A-0474, OMB 1010-0175 (Nov. 1, 2009), *available at* http://www.boemre.gov/offshore/renewableenergy/PDFs/LeaseA0474.pdf.

[19] BOEMRE, Interim Policy Projects, http://www.boemre.gov/offshore/RenewableEnergy/Projects.htm (last visited June 13, 2011).

[20] BOEMRE, Final Rule; Notice of Availability of the Final Environmental Assessment, Renewable Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf, 74 Fed. Reg. 19638 (Apr. 29, 2009). The regulations are discussed in more detail in the section on the federal framework for energy exploration and development. *See infra* Part II.c.

activities off Delaware, under the regulations, BOEMRE in October 2009 convened a Delaware Task Force representing relevant federal, state, local, and tribal agencies and governments.[21] Then in April 2010, BOEMRE issued a request for interest (RFI) to identify possible OCS alternative energy development lease areas offshore of Delaware.[22]

The Delaware Task Force met in July 2010, to discuss comments received in response to the RFI and the lease area nominations submitted by NRG Bluewater Wind Delaware LLC (Bluewater) and Occidental Development and Equities, LLC (Occidental).[23] Bluewater indicated interest in 11 full OCS blocks and 20 partial OCS blocks, and Occidental indicated interest in 2 full OCS blocks and 4 partial OCS blocks.[24] After a review of the submissions, however, BOEMRE found that Occidental had not demonstrated it was qualified to hold an OCS commercial lease at that time. Thus the agency determined there was no competitive interest in the proposed lease area, and following confirmation from Bluewater that it remained interested in the area, BOEMRE issued a notice of proposed lease area and a request for competitive interest (RFCI) on January 26, 2011.[25] Bluewater was the only party to respond to the second request, allowing BOEMRE to determine there was no competitive interest and to move forward and initiate the next steps of the leasing process, including environmental reviews and consultations.[26]

In November 2010 the Secretary of the Interior announced an agency "Smart from the Start" initiative to streamline responsible offshore wind energy projects on the Atlantic outer continental shelf.[27] The goal is to help BOEMRE expedite the leasing process so that leasing

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[21] *See* BOEMRE, Renewable Energy, State Activities: Delaware, http://www.boemre.gov/offshore/RenewableEnergy/StateActivities.htm#Delaware (last visited June 13, 2011); *see also* 30 C.F.R. 285.102.

[22] 75 Fed. Reg. 21653 (Apr. 26, 2010).

[23] BOEMRE Office of Offshore Alternative Energy Programs, *BOEMRE Delaware Renewable Energy Task Force July 15, 2010 Meeting Summary* (2010); Presentation by Erin Trager, BOEMRE Office of Offshore Alternative Energy Programs, BOEM Delaware Task Force Meeting, Lewes, Delaware (July 15, 2010). Comments received included those from the American Waterways Operators, Dann Marine Towing LC, US Coast Guard Fifth District, The Nature Conservancy in Delaware, and NOAA National Marine Fisheries Service—Habitat Conservation Division.

[24] BOEMRE, Commercial Leasing for Wind Power on the Outer Continental Shelf (OCS) Offshore Delaware—Request for Interest (RFI) Docket No. MMS-2010-OMM-0017 (July 2, 2010), *available at* http://www.boemre.gov/offshore/RenewableEnergy/PDFs/stateactivities/CommercialIndicationsofInterest_DE.pdf.

[25] 76 Fed. Reg. 4716, 4716–17 (Jan. 26, 2011). The proposed lease area includes 10 OCS lease full blocks, 116 OCS lease sub-blocks, and 18 OCS lease partial sub-blocks located in federal waters offshore Delaware.

[26] 76 Fed. Reg. 20367 (Apr. 12, 2011); *see also* Dep't of the Interior, Press Release: Interior Initiates Process for First "Smart from the Start" Lease for Commercial Wind Power Offshore Delaware, Mar. 24, 2011, *available at* http://www.doi.gov/news/pressreleases/Interior-Initiates-Process-for-First-Smart-from-the-Start-Lease-for-Commercial-Wind-Power-Offshore-Delaware.cfm.

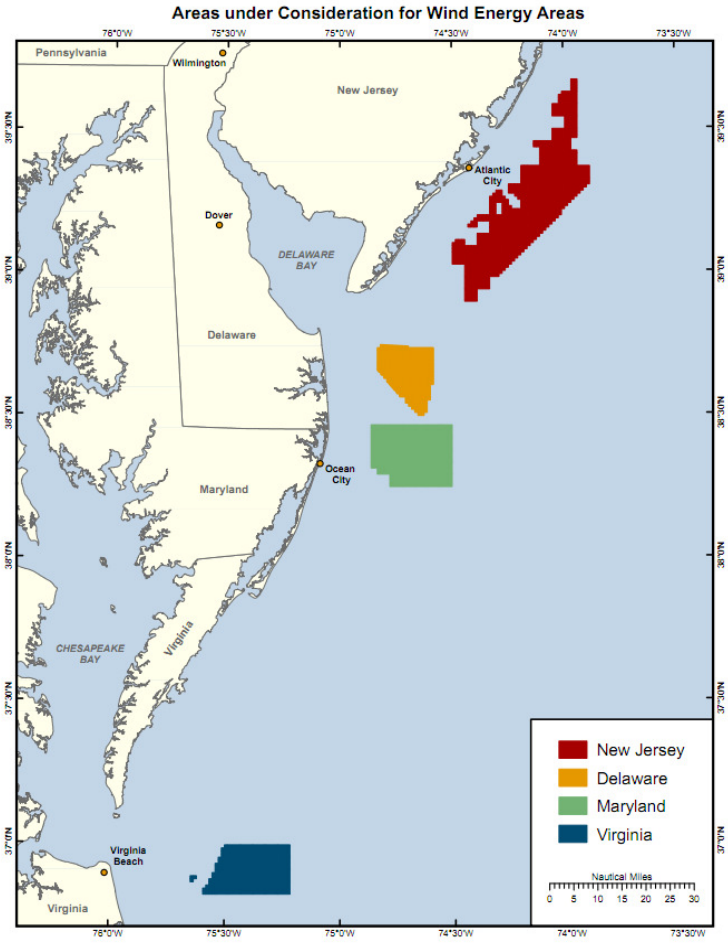
[27] Dep't of the Interior, Press Release: Salazar Launches 'Smart from the Start' Initiative to Speed Offshore Wind Energy Development off the Atlantic Coast, Nov. 23, 2010, *available at* http://www.doi.gov/news/pressreleases/Salazar-Launches-Smart-from-the-Start-Initiative-to-Speed-Offshore-Wind-Energy-Development-off-the-Atlantic-Coast.cfm; Dep't of the Interior, Overview: Offshore Wind Energy Development off the Atlantic Coast, *available at* http://www.doi.gov/news/pressreleases/loader.cfm?csModule=security/getfile&PageID=186636 (last visited June 13, 2011).

may occur in 2011 and 2012 and to increase coordination with federal, state, and local partners. For example, a final rule was issued in May 2011 that makes consistent the process for acquiring a lease noncompetitively whether it is initiated by unsolicited request or by BOEMRE through a request for interest; a second notice of request for interest was previously required for a BOEMRE-initiated process. This reduces up to a year the time it could take to obtain a noncompetitive lease if BOEMRE issues a request that only one party responds to.[28]

One of the primary components of Smart from the Start is identifying priority Wind Energy Areas (WEAs) that may be most suitable for development. The agency will then coordinate the collection of data and information about those areas, which will be made available to the public, to help make the leasing and permitting processes more efficient.[29] The first four WEAs were identified in consultation with other federal agencies and the state renewable energy task forces and announced on February 7, 2011. The announcement coincided with announcement of a joint Department of Interior-Department of Energy strategic plan to speed offshore wind energy development in the United States,[30] and was followed by the publication of a notice of intent to conduct an environmental assessment on the four WEAs.[31] The four WEAs are located offshore of Delaware, Maryland, New Jersey, and Virginia, and shown in figure 1.

[28] 76 Fed. Reg. 28178 (May 16, 2011); *see also* Dep't of the Interior, Press Release: Salazar, Bromwich Announce Elimination of Redundant Step for Offshore Renewable Energy Leasing, May 13, 2011, *available at* http://www.doi.gov/news/pressreleases/Salazar-Bromwich-Announce-Elimination-of-Redundant-Step-for-Offshore-Renewable-Energy-Leasing.cfm.
[29] Overview: Offshore Wind Energy Development off the Atlantic Coast, *supra* note 27.
[30] Dep't of Energy, Energy Efficiency & Renewable Energy, A National Offshore Wind Strategy: Creating an Offshore Wind Energy Industry in the United States (Feb. 2011), *available at* http://www1.eere.energy.gov/windandhydro/pdfs/national_offshore_wind_strategy.pdf; Dep't of the Interior, Press Release, Salazar, Chu Announce Major Offshore Wind Initiatives, Feb. 7, 2011, *available at* http://www.doi.gov/news/pressreleases/Salazar-Chu-Announce-Major-Offshore-Wind-Initiatives.cfm.
[31] 76 Fed. Reg. 7226 (Feb. 9, 2011).

Figure 1. Four offshore areas under consideration for WEAs, announced Feb. 7, 2011[32]



BOEMRE also recently signed a Memorandum of Understanding (MOU) with the National Oceanic and Atmospheric Administration (NOAA) regarding coordination and collaboration on decisions related to energy development on the OCS. The MOU focuses on ensuring such decisions are "based on the relevant scientific information and expertise of both agencies in order to fulfill the stewardship and conservation of living marine resources and ecosystems responsibilities that fall under the agencies' respective authorities."[33]

[32] BOEMRE, Smart from the Start, Map of Wind Energy Areas, http://www.boemre.gov/offshore/RenewableEnergy/PDFs/Wind_Energy_Areas_020711.pdf.

[33] Memorandum of Understanding on Coordination and Collaboration Regarding Outer Continental Shelf Energy Development and Environmental Stewardship between the U.S. Department of the Interior and U.S. Department of Commerce (May 19, 2011), *available at* http://www.boemre.gov/ooc/pdfs/MOU_BOEMRE_NOAA_May2011.pdf. As specifically related to renewable energy or alternate use activities, the MOU stipulates that BOEMRE will invite NOAA to engage in current and future intergovernmental task forces or other vehicles or initiatives; to participate in development and review of relevant environmental analyses; to consult with and involve NOAA experts in evaluation, drafting, and review of draft and final products; to provide NOAA with necessary information to allow informed participation in environmental reviews; and to coordinate with NOAA, as appropriate, on the DOI-DOE agreement on coordinated offshore renewable energy technology deployment, to promote tri-agency collaboration.

In May 2011, the Federal Energy Regulatory Commission (FERC) engaged in Mid-Atlantic offshore renewable energy activities by approving an above-market return on equity of 12.59% for the proposed Atlantic Wind Connection (AWC). FERC also approved AWC's request for inclusion of all construction work in progress in its rate base and added a conditional 2.5% (of the requested 3%) to the return on equity as incentives for project completion.[34] AWC is a private partnership focused on developing a backbone for Mid-Atlantic offshore wind energy transmission, led by Trans-Elect Development Corp. with Atlantic Grid Development as project developer and sponsored by Good Energies, Google, and Marubeni Corp. It is projected that the 250-mile project – which will include four 320 kV direct current cables buried approximately 20 miles offshore, 12 offshore converter platforms, and 8 onshore AC-DC terminals – will provide up to 6,000 MW of transmission capacity, come at an estimated cost of at least $5 billion, and could be completed by 2020.[35] AWC is currently waiting for BOEMRE to issue a decision on an unsolicited right-of-way application that the partnership filed in March 2011.[36]

Delaware's support for offshore wind energy dates back at least to its renewable energy portfolio standard, first enacted in 2005, when the state legislature required that 10% of Delaware's electricity come from renewable sources by 2019.[37] In 2007 the target was increased to 20% by 2019, with coordinating increases in per-year requirements. The 2007 act also created a solar set-aside that would grow to 2.005% by 2019, and made it possible for Delaware citizens to sell solar renewable energy certificates (RECs).[38] Then in 2010 the renewable energy portfolio standard was increased to 25% by 2025, with a mandatory minimum percent from solar equal to 3.5% by that time.[39] The 2010 legislation also established an 11-member Delaware Renewable Energy Task Force to "mak[e] recommendations about the establishment of trading mechanisms

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Conversely, for any OCS offshore energy development activity within NOAA's jurisdiction, NOAA will invite BOEMRE to be a cooperating agency on related issues.

[34] 135 FERC ¶ 61,144, Docket NO. EL 11-13-000 (May 19, 2011), *available at* http://www.ferc.gov/whats-new/comm-meet/2011/051911/E-7.pdf; Atlantic Wind Connection, Press Release: FERC Action Will Enable Offshore Transmission, Reduce Congestion, http://www.atlanticwindconnection.com/ferc/May2011/ (last visited June 13, 2011). The added incentive is described in basis points (2.5% equates to 250 basis points).

[35] 135 FERC ¶ 61,144, at II.A; *see also* Atlantic Wind Connection, http://atlanticwindconnection.com/uncategorized/news/ (last visited June 13, 2011).

[36] Atlantic Wind Connection, Press Release: Atlantic Wind Connection Files Unsolicited Right-of-Way Application with BOEM, http://www.atlanticwindconnection.com/ferc/BOEM/ROW%20application%20press%20release.pdf (last visited June 13, 2011).

[37] SB 74 (as amended by SA 1, 2, and 3 and HA 1), *An Act to Amend Title 26 of the Delaware Code Relating to Renewable Energy Portfolio Standards* (143rd General Assembly, 2005), *available at* http://www.legis.delaware.gov/LIS/lis143.nsf/vwLegislation/SB+74/$file/legis.html?open.

[38] SB 19 (as amended by HA 1), *An Act to Amend the Delaware Code to Increase the Renewable Energy Portfolio Standard* (144th General Assembly, 2007), *available at* http://www.legis.delaware.gov/LIS/lis144.nsf/vwLegislation/SB+19/$file/legis.html?open.

[39] SS 1 for SB 119, *An Act to Amend Title 26 of the Delaware Code Relating to the Renewable Energy Portfolio Standards* (145th General Asembly 2010), *available at* http://www.legis.delaware.gov/LIS/lis145.nsf/vwLegislation/SS+1+for+SB+119/$file/legis.html?open. The requirements are codified at DEL. CODE tit. 16, § 351 *et seq*.

and other structures to support the growth of renewable energy markets in Delaware."[40] Among other things, the Delaware Renewable Energy Task Force is to provide reports on annual progress towards the renewable energy portfolio standards and recommendations on establishing mechanisms to maximize in-state renewable energy production and revenue certainty for renewable energy investment.[41] It first met in September 2010 and generally has convened at least monthly since then.[42]

The Delaware state legislature further supported renewable energy with the enactment of the Electric Utility Retail Customer Supply Act in 2006. The Act required Delmarva Power to issue a competitive request for proposals (RFP) "for the construction of new generation resources within Delaware" and up to 25-year output contracts.[43] The RFP for new, cost-effective generation resources was issued in late 2006, and led to the signing of a contract in 2008 between Delmarva Power and Bluewater Wind Delaware, LLC. Delmarva agreed to purchase up to 200 MW of power from the planned Bluewater wind park for a period of 25 years (or December 1, 2039, whichever is sooner, except in prescribed circumstances).[44] The Bluewater wind park would be located 13 or more miles offshore of Rehoboth Beach; the proposed site extending from lower Cape Henlopen to lower Indian River Inlet.[45]

d. Atlantic Offshore Wind Energy Consortium

Because of the many technical, scientific, and resource issues involved in offshore wind in the Atlantic region, in June 2010, the Department of the Interior executed an MOU with Maine, New

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[40] SS1 for SB119, *supra* note 39, § 22.
[41] *Id.*
[42] DNREC, Delaware Energy office, Delaware Renewable Energy Task Force, Meeting Minutes, *available at* http://www.dnrec.delaware.gov/energy/information/Pages/RenewableEnergyTaskForce.aspx (last visited June 13, 2011). The current Task Force members are: Bill Andrew (DE Electric Cooperative), Dale Davis (DE Solar Energy Coalition), Sean Finnigan (DE Sustainable Energy Utility), Pat McCullar (DE Municipal Electric Companies), Arnetta McRae (DE Public Service Commission), Stanley Merritt (renewable energy research and development industry), Glen Moore (Delmarva Power & Light), Tom Noyes (DE Public Advocate), Michael Sheehy (DE Public Advocate), Carolyn Snyder (DNREC & Task Force chair), and Dan Tompkins (local renewable energy manufacturing industry). DNREC, Delaware Renewable Energy Taskforce Roster, http://www.dnrec.delaware.gov/energy/information/Documents/RPS%20Taskforce%20Roster.pdf (list visited June 13, 2011).
[43] HB 6 (as amended by HA 1 and SA 1 and 2), *An Act to Amend Title 26 of the Delaware Code Concerning the Oversight of Public Utilities that Distributed and Supply Electricity to Retail Electric Customers in the State* (143rd General Assembly 2006), *available at* http://www.legis.delaware.gov/LIS/lis143.nsf/vwLegislation/HB+6/$file/legis.html?open.
[44] Power Purchase Agreement between Delmarva Power & Light Co. and Bluewater Wind Delaware LLC (June 23, 2008), *available at* http://www.delmarva.com/_res/documents/FinalexecutedDPLBWWPPA.pdf. The contract originally stated that project installation and operation would need to begin by December 1, 2014, but that deadline was extended to December 1, 2016, by contractual amendment in August 2010. Delmarva News & Information, Delmarva Power, NRG Bluewater Wind Agree to Contract Extensions, Aug. 3, 2010, http://www.delmarva.com/welcome/news/releases/archives/2010/article.aspx?cid=1504 (last visited June 13, 2011).
[45] NRG Bluewater Wind, Delaware Project Facts, http://www.bluewaterwind.com/facts.htm?cat=delaware (last visited Feb. 2, 2011).

Hampshire, Massachusetts, Rhode Island, New York, New Jersey, Delaware, Maryland, Virginia, and North Carolina. The parties agreed to undertake collaborative activities and consultation "to achieve region-wide strategies and produce specific recommendations to facilitate the development of Atlantic offshore wind resources."[46] This MOU has a four-year term, and is intended to foster decision making on offshore wind in federal waters, but may affect consideration of related facilities in state waters, including transmission and support facilities. The MOU specifically contemplates that the states will, with the support of federal agencies (although not necessarily funding) focus on research and coordination in three areas:

- **Permitting and Regulatory Process** – Activities will include clarifying permitting responsibilities and authorities among federal and state agencies, evaluating opportunities to expedite leasing, evaluating the feasibility of pilot or "lead" projects to expedite the process, and promoting effective interagency and intergovernmental communication.
- **Data and Science** – Activities will include inventorying available data on resource characterization, avian and cetacean migration patterns, critical marine and near-shore habitats, geology, and other marine uses; evaluating and addressing research gaps; creating efficient processes to share and leverage technical research and environmental data; and developing effective models to inform state and federal review of wind development in *state* waters.
- **Investment and Infrastructure** – Activities will include addressing investment challenges and other financial barriers to Atlantic offshore wind development and identifying strategies for reducing such barriers; evaluating and proposing solutions for deficiencies in deployment and maintenance infrastructure, including, but not limited to, domestic marine vessels, production and staging areas, installation equipment, and workforce needs; identifying opportunities to reduce project development costs and increase system reliability; examining regional offshore wind transmission strategies, and producing specific recommendations to address relevant planning and siting processes; and other purposes.[47]

In February 2011, eight months after the formation of the Atlantic Offshore Wind Energy Consortium, the parties finalized an Action Plan that identifies actions to help facilitate offshore

[46] MEMORANDUM OF UNDERSTANDING between THE UNITED STATES DEPARTMENT OF THE INTERIOR and THE STATES OF MAINE, NEW HAMPSHIRE, MASSACHUSETTS, RHODE ISLAND, NEW YORK, NEW JERSEY, DELAWARE, MARYLAND, VIRGINIA, and NORTH CAROLINA, 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 OUTER CONTINENTAL SHELF (June 2010), *available at* http://www.boemre.gov/ooc/PDFs/AtlanticConsortiumMOU.pdf.

[47] *Id.* Compare the energy agenda of the MARCO states, *supra* note 2.

wind development in conjunction with and complementary to the Department of Interior's Smart from the Start initiative.[48] Focused on "breaking down jurisdictional barriers, bringing stakeholders together, and implementing programs that will result in the responsible development" of offshore wind, the actions are divided between those that will affect the regulatory and permitting process, and those that are focused on coordination and collaboration in obtaining critical data and science. The Action Plan also emphasizes the importance of cross-cutting investment and infrastructure issues and challenges, and notes that DOI and DOE will collaborate to continue discussion and action on that front.[49]

Table 2. AOWEC Action Plan initiatives, with stated consortium benefits.[50]

Regulatory & Permitting Process	Data & Science
New York offshore planning pilot project This would provide a model process for states seeking to assemble existing information, which will be used to help developers satisfy Federal regulatory requirements.	**Atlantic Offshore Wind Interagency Working Group** Cross-agency coordination on, and clarification of existing Federal and state data on natural resources and other activities needed to facilitate the development of offshore wind energy projects, as well as responsiveness and information on issues of concern.
Rhode Island marine spatial planning efforts pilot This model could provide a methodology to assess a series of potential sites to select the most optimal for leasing. States and DOI could use this framework to plan for major projects in the offshore environment while minimizing conflicts and optimizing site location.	**Development of offshore siting criteria and best management practices** A white paper(or other appropriate reference document) for BMPs could assist state and regional offshore planning and related efforts to provide a more consistent and predictable siting process. This would guide the regulated community toward areas with the greatest potential for development.
Maine deep-water wind energy pilot project The lessons learned in this pilot project will benefit the entire country and establish a leasing, permitting and review process that facilitates evaluation of new technology and is far less time-consuming, cumbersome, and complex.	**Enhanced communication and collaboration** A plan containing specific mechanisms to enhance ongoing coordination, communication and funding across the various federal, regional, and state entities involved in offshore wind development will ensure that priority issues are addressed and communicated, allowing Consortium objectives to be reached earlier.

[48] Atlantic Offshore Wind Energy Consortium: Action Plan (Feb. 2011), at 1 (on file with authors).
[49] *Id.* at 1–2.
[50] *Id.* at 3–12.

Regulatory and statutory reforms A reduction in permitting timelines will benefit all members of the AOWEC by accelerating the development of Atlantic offshore wind.	

e. Offshore Wind Technologies and Environmental Effects

i. Offshore Wind Technologies

Current offshore wind energy projects typically include numerous turbines that transmit electricity to a common offshore transformer, which then transmits onshore for connection to the grid. As summarized by the European Wind Energy Association, "[o]ffshore wind projects are more complex than onshore ones. Offshore developments include platforms, turbines, cables, substations, grids, interconnection and shipping, dredging and associated construction activity. The operation and maintenance activities include the transport of employees by ship and helicopter and occasional hardware retrofits."[51]

Each individual facility begins with a foundation, to which the turbine is attached. A tower extends from the base and is capped by the nacelle, a case that encloses the gearbox, generator, and blade hub, and which wind direction sensors rotate to face into the wind. The gearbox attaches to a shaft that extends horizontally and connects the rotor (the blades and blade hub). The rotation of the blades turns the gearbox and powers the generator, creating electricity. The electricity is then transmitted via submarine cable system to a central offshore electric service platform. The electricity is converted to high voltage, and then transmitted via submarine cable system to an onshore substation and the electrical grid.[52] As compared to their onshore counterparts, offshore wind turbines typically have stronger towers and enhanced nacelles to compensate for the strength of wind-wave interactions and salted air corrosion. They generally have automated lubrication systems and preheating/cooling systems. In addition, they often are enhanced with aerial and maritime navigation aids. Finally, offshore turbines are typically larger than those sited onshore.[53]

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[51] Carmen Lago et al., *Environmental Issues*, *in* WIND ENERGY THE FACTS 336 (European Wind Energy Association, ed., 2009), *available at* http://www.wind-energy-the-facts.org/documents/download/Chapter5.pdf.

[52] *See* Offshore Wind Turbine Foundations – Current & Future Prototypes, http://www.offshorewind.net/Other_Pages/Turbine-Foundations.html (last visited June 13, 2011); MMS, Technology White Paper on Wind Energy Potential, *supra* note 5, at 4–6; NREL, Wind Turbine Schematic Diagram, http://ocsenergy.anl.gov/includes/dsp_photozoom.cfm?imgname=largeturbine_full.gif&caption=Wind%20Turbine%20Schematic%20Diagram&callingpage=/guide/wind/index.cfm&callingttl=Offshore%20Wind%20Energy&source=Credit:%20National%20Renewable%20Energy%20Laboratory (last visited June 13, 2011).

[53] MMS, Technology White Paper on Wind Energy Potential, *supra* note 5, at 5.

The type of foundation used for a turbine depends on soil and water conditions. In waters less than 30 meters deep (shallow waters), two common bases are monopile foundations, in which a single pile is driven approximately 32–64 feet into the seabed, and gravity foundations, in which a heavy, flat base rests on the sea floor. In waters 30–60 meters deep (transitional depths) designs include tripod foundations, which expand the base of the monopile design by creating a square pyramid at the seafloor; tripile foundations, which have three piles that connect about the surface of the water (for use in waters up to 50 meters deep); and jacket foundations, in which a lattice jacket is attached to the seabed by driving in four piles (for use in waters more than 40 meters deep). In waters more than 60 meters deep (deep water) emerging technologies include floating structures, rather than facilities with fixed foundations.[54]

ii. Offshore Wind Environmental Effects

In its 2009 environmental assessment of the potential environmental and socioeconomic effects of issuing wind energy leases offshore Delaware and New Jersey, BOEMRE considered the potential impacts on air quality, water quality, coastal habitats, benthic reserves, marine mammals, sea turtles, birds, bats, fish resources and essential fish habitat, offshore cultural resources, recreational resources, demographics, land use and coastal infrastructure, and commercial and recreational fishing activities.[55] It is not a dispositive list, but table 3 summarizes some of the potential impacts to these resources during the construction, installation, and operation of offshore wind and transmission facilities.

[54] AWS Truewind LLC, Offshore Wind Technology Overview (Sept. 2009), at 8–11, *available at* http://www.linycoffshorewind.com/PDF/AWS%20Truewind%20Offshore%20Wind%20Technology%20Final%20Report.pdf; Schwartz, *supra* note 5, at 9; Offshore Wind Turbine Foundations – Current & Future Prototypes, *supra* note 52.

[55] BOEMRE, Environmental Assessment, *supra* note 15, at 3–5.

Table 3. Summary of Some of the Potential Impacts of Offshore Wind Activities[56]

Phase	Possible Activity	Potential Impacts
Turbines & Platforms		
Construction	Seabed excavation for foundations	Benthic organisms
	Removal of boulders	Benthic organisms
	Significant noise increase	Marine mammals, seabirds, sea turtles, and/or fish
	Increased turbidity	Decreased plankton photosynthesis
	Placement of foundation	Benthic organisms
Operation	Facility foundation	Limited artificial habitat
	Blade rotation and visual presence (including lighting)	Seabird and bat collisions; seabird area avoidance and migration disruption; bat attraction or avoidance
	Mechanical sound near continuous transmission underwater	Fish and marine mammal area avoidance
	Aerodynamic sound above water	Onshore human communities; seabird avoidance or attraction
	Marine and air traffic air emissions, vessel leakage, ballast exchange, increased noise, and anchoring	Air quality; water quality; invasive species; collisions, strikes, and spills; benthic organisms
Undersea Cables		
Installation	Placement and burial under rocks or in trenches (offshore)	Benthic organisms; moving epifauna may be struck
	Placement and burial under rocks or in trenches (nearshore)	Habitat alteration; expanded marshland erosion areas; seabird activities
	Minor noise increase	(Likely minimal impact)
	Land-sea connection excavation	Habitat alteration and loss; increased erosion, destabilization, and vegetation loss; bentonite drilling fluid discharge
Operation	Electronic currents	Demersal fish avoidance and possible unknown effects; fauna navigation and orientation
Onshore Facility		
Construction	Land-sea connection excavation	Habitat alteration and loss; increased erosion, destabilization, and vegetation loss; bentonite drilling fluid discharge

[56] This table summarizes some of the potential impacts that may result from offshore wind energy development. It is not comprehensive in coverage. The table was adapted from information summarized in ELI, Virginia Offshore Energy Development Law and Policy Review and Recommendations (2008), at 8–14, and BOEMRE, Alternative Energy and Alternate Use Guide, Environmental Considerations, http://ocsenergy.anl.gov/guide/wind/index.cfm (last visited June 13, 2011). *See also* BOEMRE, Environmental Assessment, *supra* note 15.

Section II. Federal Jurisdiction

Delaware and the MARCO states are dealing with offshore alternative energy development within the context of a complex framework of federal laws and programs. This section briefly summarizes the relevant federal framework in order to provide a fuller view of state opportunities and constraints.

a. Jurisdiction over Submerged Lands, Marine Waters, and Ocean Resources

States have jurisdiction over waters and submerged lands within their borders, but also exercise jurisdiction out to three nautical miles of their coasts, although certain federal permitting requirements may apply within the three-mile limit for various activities.[57] Beyond the three-mile limit in the area referred to as the Outer Continental Shelf (or OCS), however, the federal government has exclusive jurisdiction out to 200 miles from shore. These distinct but sometimes overlapping jurisdictional zones mean that state and federal authorities are inherently intertwined, including as they relate to offshore alternative energy. A state's influence on activities conducted on the OCS is dependent on the state's participation in associated federal processes, such as environmental impact reviews (pursuant to the National Environmental Policy Act) and federal consistency review (pursuant to the Coastal Zone Management Act). These processes enable a state to review federal actions located both inside and outside of its coastal zone if they may affect its natural resources.[58]

The following section provides an overview of some of the key federal policies, laws, and regulations that may affect offshore energy development.

b. National Ocean Policy and Framework for Coastal and Marine Spatial Planning

On July 19, 2010, President Obama issued Executive Order 13,547, which established a national ocean policy and adopted in full (except where otherwise noted) the final recommendations of the Interagency Ocean Policy Task Force.[59] The final recommendations included a vision,

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[57] The federal government approved and confirmed state jurisdiction out to three miles through the Submerged Lands Act. 43 U.S.C. § 1312. In Texas and West Florida this jurisdiction extends to three marine leagues, or nine nautical miles, just over 10 statute miles.

[58] 42 U.S.C. § 4321 *et seq.* (NEPA); 16 U.S.C. § 1456(c) (CZMA).

[59] *Stewardship of the Ocean, Our Coasts, and the Great Lakes*, Exec. Order 13,547 (July 19, 2010); Council on Environmental Quality, Final Recommendations of the Interagency Ocean Policy Task Force (July 19, 2010) [*hereinafter Final Recommendations*], *available at* http://www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf. The Interagency Ocean Policy Task Force was established by Presidential memorandum on June 12, 2009. Memorandum of June 12, 2009, for the Heads of Executive Departments and Agencies on National Policy for the Oceans, Our Coasts, and the Great Lakes, 74 Fed. Reg. 28,591 (June 17, 2009). For more information, see Council on Environmental Quality, Interagency Ocean Policy Task Force, http://www.whitehouse.gov/administration/eop/ceq/initiatives/oceans (last visited June 13, 2011).

policy, coordination framework, and implementation strategy for stewardship of the U.S. oceans, coasts, and Great Lakes. In addition, they included a framework for coastal and marine spatial planning (CMSP). The Executive Order, and thus the national ocean policy and CMSP framework, is binding on federal agencies as they carry out their statutory and discretionary functions. While state and local entities are not bound by the order or the policy, they may benefit from engaging in the process to ensure that their interests are incorporated in the decisions that emerge.

The CMSP framework envisions federal oversight of a regionally based process by the new National Ocean Council.[60] It accordingly divides the nation into nine regions, including a Mid-Atlantic Region composed of Delaware, Maryland, New Jersey, New York, Pennsylvania, and Virginia. The Task Force based the regional divisions on existing regional governance structures with the exception of the Mid-Atlantic Region; Pennsylvania was added to the MARCO states in the Mid-Atlantic Region because it "has a coastline on the Delaware River that would, under the defined geographic scope, be included in the CMSP regional planning area."[61] The framework defines the geographic scope of CMSP as extending from the mean high-water line out to the edge of Exclusive Economic Zone (200 nautical miles); it will also include inland bays and estuaries as deemed necessary in light of the interconnectedness of upstream activities and the ocean, coasts, and Great Lakes.[62] Thus, the planning areas include both state and federal waters.

A Regional Planning Body (RPB) consisting of federal, state, and tribal authorities will be formed in each region. The RPBs will lead the implementation of the CMSP process and development of the plans.[63] Among other things, the CMSP process will include identifying regional objectives and existing efforts that the Plan can draw from or build upon, as well as the development and evaluation of a range of alternative future spatial management scenarios based on gathered information. The CMS Plan ultimately developed will draw upon the alternatives analysis, and include a summary of the regional regulatory context and a regional assessment of existing and predicted future conditions, uses, and characteristics. The CMS Plan will include "spatial determinations for conservation and uses, at the appropriate scale," and a strategy for integrating or coordinating decision-making and addressing use conflicts.[64] The planning effort is intended to follow a prescribed sequence of steps:

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[60] The National Ocean Council consists of numerous cabinet secretaries, the Administrators of EPA, NOAA, and NASA, the Chair of the Council on Environmental Quality, and White House policy staff. *See* National Ocean Council, About the National Ocean Council, http://www.whitehouse.gov/administration/eop/oceans/about (last visited June 13, 2011).

[61] *Final Recommendations*, *supra* note 59, at 53 n.11.

[62] *Id.* at 49.

[63] *Id.*

[64] *Id.* at 52–59.

1) Identify regional objectives
2) Identify existing efforts that should help shape the plan throughout the process
3) Engage stakeholders and the public at key points throughout the process
4) Consult scientists and technical and other experts
5) Analyze data, uses, services, and impacts
6) Develop and evaluate alternative future spatial management scenarios and tradeoffs
7) Prepare and release for public comment a draft CMS Plan with supporting environmental impact analysis documentation
8) Create a final CMS Plan and submit it for National Ocean Council review
9) Implement, monitor, evaluate, and modify (as needed) the NOC-certified CMS Plan

Each regional CMS Plan would contain the following elements:

- Regional Overview and Scope of Planning Area
- Regulatory Context
- Regional Assessment
- Objectives, Strategies, Methods, and Mechanisms for CMSP
- Compliance Mechanisms
- Monitoring and Evaluation Mechanisms
- Incorporation of the Dispute Resolution Process.[65]

The CMSP process may affect the planning and siting of offshore alternative energy projects in the Mid-Atlantic region, because it must describe the "spatial determinations for conservation and uses."[66] The plan will further national objectives determined by the NOC and regional objectives agreed upon by the RPB.[67] The federal CMSP framework states that all nine U.S. regions are encouraged to have CMS Plans completed within three years (i.e., by November 2014) and that implementation will start by mid-2015.[68] Of course this national-level anticipated planning schedule actually lags behind offshore wind energy leasing already underway in the MARCO region, which presents some issues of coordination.

Federal agencies are required to participate in CMSP, but Delaware and the other MARCO states can choose whether or not they want to engage in the process.[69] If a state chooses to participate, the plan is intended to be binding on the state to the extent possible under existing law.[70] It is

[65] *Id.*
[66] *Id.* at 59.
[67] *See id.* at 55, 59.
[68] *Id.* at 74.
[69] "In the event that a particular State or tribe opts not to participate in the development or implementation of a CMS Plan, the development or implementation of the CMS Plan would continue." *Id.* at 60.
[70] Each entity participating in the CMSP process will be asked to sign a regional Development Agreement, which will be "an express commitment to work cooperatively to engage in CMSP and develop eventual CMS Plans, identify the regional planning body members for each of the partners, and define ground rules, roles, and

important to note that if the state chooses to abstain, the plan will nevertheless bind certain activities of the federal agencies and entities that have licensing and permitting authority over offshore energy activities.

c. Energy

There are two primary federal laws regulating offshore energy development: the Outer Continental Shelf Lands Act, which regulates traditional and renewable energy-related activities from 3–200 miles, and the Federal Power Act, which regulates interstate power transmission, interstate wholesale electricity sales, and non-federal hydrokinetic activities from 0–200 miles.[71]

i. Energy Exploration and Development

Under the Outer Continental Shelf Lands Act (OCSLA),[72] the Secretary of the Interior has authority to manage the resources of the OCS, including oil and gas exploration, leasing, and development. Formerly managed by the Minerals Management Service, implementation of this law is now overseen by the Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE). BOEMRE is being organized into three divisions: the Bureau of Ocean Energy Management, the Bureau of Safety and Environmental Enforcement, and the Office of Natural Resources Revenue. Upon finalization, the Bureau of Ocean Energy Management will bear primary responsibility for energy-related planning and leasing.[73]

1. Oil and Gas

OCSLA requires that oil and gas leases be offered according to a five-year plan. The five-year plan is prepared by BOEMRE and subject both to public comment and to environmental impact review. Until recently, a Congressional legislative moratorium prevented new leasing of OCS oil and gas resources off most states; however, the moratorium lapsed and the Executive Order establishing it was removed in 2008. In March 2010, Secretary of the Interior Ken Salazar and

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responsibilities of the partners." *Id.* at 54. The expectation is that the participating entities will bind themselves to the resulting CMS Plan. "Signing onto the CMS Plan would be an express commitment by the partners to act in accordance with the CMS Plan, within the limits of applicable statutory, regulatory, and other authorities, and respecting critical emergency response and homeland and national security needs." *Id.* at 61.

[71] OCSLA, 43 U.S.C. §§ 1331 *et seq.*; FPA, 16 U.S.C. §§791 *et seq.* In addition, the Ocean Thermal Energy Conversion Act of 1980 (OTEC) endowed the National Oceanic and Atmospheric Administration (NOAA) with authority for licensing the construction, ownership, location, and commercial operation of plants to generate energy from ocean temperature gradients. 42 U.S.C. § 9111. NOAA had not received a license application by 1996, and disbanded the OTEC licensing program; however, renewed interest was spurred by rising oil prices and NOAA anticipates receiving pilot and commercial facility applications in the near future. Demonstration projects can be authorized directly by the Department of Energy. *See* NOAA, Office of Ocean and Coastal Resource Management, Ocean Thermal Energy Conversion, http://coastalmanagement.noaa.gov/programs/otec.html (last visited June 13, 2011).

[72] 43 U.S.C. §§ 1331 *et seq*.

[73] Order No. 3299 (May 19, 2010), issued by Secretary of the Interior Ken Salazar.

President Barack Obama announced a comprehensive offshore oil and gas strategy that would open certain U.S. areas to oil and gas development, and increase exploration off the Mid-Atlantic.[74] Shortly thereafter, however, the Gulf of Mexico BP Deepwater Horizon disaster began, and in December 2010 Secretary Salazar announced that the Atlantic region will not be part of the next five-year plan.[75]

The offshore leasing process typically begins with a Call for Interest and Information/Nominations. An oil and gas lease may be offered for competitive bidding following preparation of an environmental impact statement under the National Environmental Policy Act. If an applicant successfully obtains a lease, he must submit an Exploration Plan before any activities begin. Then prior to development or production activity, operators must submit a Development Plan for approval. At each of these stages, affected states have the opportunity to review the action for consistency with their coastal zone management plans.

2. Alternative Energy

In 2005, the Energy Policy Act amended OCSLA and established Section 8(p). Section 8(p) grants the Secretary of the Interior authority over leases, easements, and rights-of-way on the OCS for non-oil and gas energy activities, as well as alternate uses of existing facilities.[76] The Secretary cannot, however, approve such activities in a National Park, National Wildlife Refuge, National Marine Sanctuary, or National Monument.[77] The Energy Policy Act also required the Secretary to issue regulations necessary to support the policies and objectives of the new provisions.[78] BOEMRE (then known as MMS) released a final Programmatic Environmental Impact Statement for an alternative energy and alternate use activities program on the OCS in 2007.[79] Then in 2009, BOEMRE promulgated implementing regulations and associated guidelines.[80]

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[74] *See* Department of the Interior, Press Release: Secretary Salazar Announces Comprehensive Strategy for Offshore Oil and Gas Development and Exploration (Mar. 31, 2010), http://www.doi.gov/news/pressreleases/2010_03_31_release.cfm.

[75] *See* Juliet Eilperin, *Obama Administration Reimposes Offshore Oil Drilling Ban*, WASH. POST, Dec. 1, 2010, http://voices.washingtonpost.com/post-carbon/2010/12/obama_administration_will_ban.html.

[76] 43 U.S.C. § 1337(p)(1); Energy Policy Act of 2005, Pub. Law 109-58, § 388(a) (amending OCSLA § 8(p)(1)). "Alternate uses" are defined as "energy- or marine-related use" of existing OCS facilities (such as oil and gas platforms) for activities not otherwise authorized by the renewable energy leasing regulations or other laws. 30 C.F.R. § 285.112.

[77] 43 U.S.C. § 1337(p)(10).

[78] *Id.* (p)(8).

[79] BOEMRE, Programmatic EIS for Alternative Energy and Alternate Uses on the OCS, *supra* note 11.

[80] Renewable Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf, 74 Fed. Reg. 19638 (Apr. 29, 2009) [hereinafter *Renewable Energy and Alternate Use Regulations*], codified at 30 C.F.R. Part 285; MMS, Guidelines for the Minerals Management Service Renewable Energy Framework (July 2009), *available at* http://www.boemre.gov/offshore/renewableenergy/PDFs/REnGuidebook_03August2009_3_.pdf.

There are four types of leases or grants that can be sold or awarded for OCS alternative energy:

- Commercial lease – for long-term renewable energy production and sale (for 25 years of operation);
- Limited lease – for renewable energy site assessment and testing (for 5 years);
- Rights-of-use and easement (RUE) grant and right-of-way (ROW) grant – to support renewable energy activities on another lease (duration indefinite or as specified); and
- Alternate use rights-of-use and easement (Alternate Use RUE) – for use of an existing facility for an energy- or marine-related purposes (duration indefinite or as specified).[81]

Unlike the leasing process for oil and gas, alternative energy leases, easements, and rights-of-way do not have to be granted pursuant to a five-year plan. The regulations state that alternative energy leases can be granted via a competitive or noncompetitive process depending on the amount of competitive interest in the site.[82] A commercial lessee must submit a Site Assessment Plan within six months after the award of a competitive lease, or within 60 days of the determination to award a noncompetitive lease and before the noncompetitive lease is actually granted. The Site Assessment Plan is followed by a Construction and Operation Plan (within five years for either).[83] For limited leases, right-of-way grants, or right-of-use and easement grants (e.g., for a transmission line) crossing part of the OCS, the applicant must submit a General Activities Plan.[84] There is a five-year limit on limited leases for testing renewable energy production technology and for site assessment.[85] The leasing processes are subject to environmental impact review under the National Environmental Policy Act and to federal consistency review under the Coastal Zone Management Act, both discussed below.

The regulations detail the federal agency's intentions to ensure "coordination and consultation" with affected state governors, or executives of affected local governments or Indian tribes, and that BOEMRE may invite such parties to join a "task force or other joint planning or coordination agreement."[86] BOEMRE "envision[s] that such task forces could be useful and

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[81] 30 C.F.R. § 285.235.

[82] *Id.* As part of a recently announced Department of the Interior initiative referred to as "Smart from the Start," discussed previously, *supra* text surrounding note 27–32, the regulatory process was amended on November 26, 2010, to eliminate a perceived superfluous step in the noncompetitive leasing process. BOEMRE, Renewable Energy Alternate Uses of Existing Facilities on the Outer Continental Shelf—Acquire a Lease Noncompetitively, 75 Fed. Reg. 72679 (Nov. 26, 2010). The Smart from the Start initiative is intended to allow BOEMRE to speed the leasing process so that leasing may occur in 2011 and 2012, to identify priority wind energy areas in the mid-Atlantic region, and to increase coordination with federal, state, and local partners. Dep't of the Interior, Press Release: Salazar Launches 'Smart from the Start' Initiative to Speed Offshore Wind Energy Development off the Atlantic Coast, Nov. 23, 2010, *available at* http://www.doi.gov/news/pressreleases/Salazar-Launches-Smart-from-the-Start-Initiative-to-Speed-Offshore-Wind-Energy-Development-off-the-Atlantic-Coast.cfm.

[83] 30 C.F.R. § 285.600, 605–13, 620–29.

[84] *Id.* § 285.600, 640–48.

[85] *Id.* § 285.235–36.

[86] *Id.* § 285.102(e). The joint planning provision is modeled on a similar provision in the regulations for leasing of nonfuel minerals on the OCS.

applicable to any phase of the OCS Alternative Energy Program, form preliminary studies and lease sale formulation, through site assessment and construction, to decommissioning.[87] Further, the regulations require BOEMRE to ensure that authorized activities provide for "[c]oordination with relevant Federal agencies (including, in particular, those agencies involved in planning activities that are undertaken to avoid conflicts among users and maximize the economic and ecological benefits of the OCS, including multifaceted spatial planning efforts)."[88] The 10-state Atlantic Offshore Wind Energy Consortium, as well as the individual state task forces, such as the Delaware Task Force, are intended to help BOEMRE fulfill these obligations and derive the benefits of consultation.

Finally, the regulations (in accordance with the statute) provide for limited revenue sharing: OCSLA requires that coastal states receive 27 percent of the revenue from OCS energy projects sited wholly or partially within three nautical miles of state submerged lands (i.e., six nautical miles from shore).[89] This revenue sharing is rather seriously limited for Delaware's and MARCO's purposes, given that most of the interest in offshore wind in the Mid-Atlantic lies beyond this six nautical mile range.

ii. Energy Transmission

Under the Federal Power Act (FPA),[90] the Federal Energy Regulatory Commission (FERC) is responsible for overseeing interstate power transmission and wholesale sales of electricity.[91] It oversees interstate transmission and wholesale sales primarily through recognized Regional Transmission Organizations and Independent System Operators (RTOs/ISOs).[92] One of the primary functions of such entities is to enhance and expand regional transmission capacity. In the Mid-Atlantic region, there are two primary RTOs and ISOs: PJM Interconnect, LLC (PJM), which covers the District of Columbia and 13 states, including New Jersey, Delaware, Maryland, and Virginia; and the New York Independent System Operator (NYISO), which as its name suggests covers New York. PJM is the largest competitive wholesale electricity market, overseeing 56,499 miles of transmission lines and offering 164,895 MW to a population of 51

[87] Renewable Energy and Alternative Use Regulations, 74 Fed. Reg. 19638, 19653 (Apr. 29, 2009).
[88] 30 C.F.R. § 285.102. This stipulation is reiterated in a subsequent section detailing whom the agency must consult and coordinate with before issuing a lease. *Id.* § 285.203.
[89] 43 U.S.C. § 1337(p)(2).
[90] FPA, 16 U.S.C. §§ 791 *et seq*.
[91] *Id.* § 824, 824(b)(1). FERC also has exclusive jurisdiction over liquefied natural gas (LNG) terminals and their siting in state and federal waters. *See* Natural Gas Act, 15 U.S.C. § 717(b). A federal court decision struck down a Baltimore County ordinance that prohibited LNG terminals, except by special zoning exception, as a violation of FERC's preemptive authority. AES Sparrows Point LNG, LLC v. Smith, 470 F. Supp. 2d 586, 601 (D. Md. 2007); *see also* AES Sparrows Point LNG, LLC v. Smith, 527 F.3d 120, 125 (4th Cir. 2008) (striking down a subsequent ordinance attempting to prohibit LNG facilities in a critical area because the amendment was not part of Maryland's approved coastal management plan).
[92] *See generally* FERC, Industry Activities, RTO/ISO, http://www.ferc.gov/industries/electric/indus-act/rto.asp (last visited June 13, 2011).

million; NYISO oversees 10,893 miles of transmission lines, offering 40,685 MW to 19 million people.[93] The FPA required FERC to issue rules to encourage cogeneration, small power production, and geothermal small power production, and utilities must offer to buy or sell energy to such facilities.[94] Either of its own initiative or pursuant to a state request, FERC can order any utility or federal power marketing agency to connect a cogeneration facility, small power production facility, or transmission facility, if doing so is in the public interest and intended to encourage energy or capital conservation, maximize efficiency, or improve system reliability.[95]

The Federal Power Act also provides FERC with authority to issue licenses for non-federal hydrokinetic (wave and tidal) projects in both state and federal navigable waters.[96] In state waters, FERC is the sole federal authority; in federal waters, FERC and MMS signed a Memorandum of Understanding clarifying how their jurisdiction interacts on the OCS.[97] Marine hydrokinetic projects are under development along the western coast of the United States, but to date have not been the focus of development efforts in the Mid-Atlantic.

d. Navigable Waters & Coastal Barriers

i. Excavation or Deposition of Materials In or Over Navigable Waters

Section 10 of the Rivers and Harbors Act (RHA) prohibits the construction, excavation, or deposition of materials in or over navigable waters in a manner that alters or modifies its course, location, condition, or capacity, unless recommended and authorized by the US Army Corps of Engineers (Army Corps).[98] Similarly, Section 404 of the Clean Water Act (CWA) requires an Army Corps permit for any projects that require the "discharge of dredged or fill material into navigable waters."[99] Section 404 applies out to three nautical miles from shore, [100] while Section

[93] ISO/RTO Council, http://www.isorto.org/site/c.jhKQIZPBImE/b.2604455/k.C323/Members.htm (last visited June 13, 2011). PJM is the largest ISO/RTO in North America; the only entity of nearly comparable size is the Midwest Independent Transmission System Operator (MISO), which covers 55,090 miles of transmission and 159,000 MW of installed generation, serving 40 million people.
[94] 16 U.S.C. § 824a-3(a); 18 C.F.R. Part 292, § 292.303.
[95] FPA, 16 U.S.C. § 824i(a)-(c); 18 C.F.R. § 32.1–32.4. "Small power production facility" refers to an eligible solar, wind, waste, or geothermal facility that produces electric energy and has a capacity no greater than 80 MW. 16 U.S.C. § 796(17).
[96] FPA, 16 U.S.C. § 817(1).
[97] In short, the MMS-FERC MOU explains that MMS has sole jurisdiction over non-hydrokinetic alternative energy projects on the OCS, as well as jurisdiction to issues leases, easements, and rights-of-way for hydrokinetic projects; FERC does not have authority relevant to non-hydrokinetic alternative energy projects, but has jurisdiction to issues licenses and exemptions in both state and federal waters. Through the MOU the agencies then agreed that MMS would make OCS hydrokinetic leases (and easements and rights-of-way) contingent on receiving a subsequent license or exemption from FERC; and FERC agreed it would not issue a license or exemption on the OCS unless the applicant had received an MMS lease/etc. Memorandum of Understanding between the U.S. Department of the Interior and Federal Energy Regulatory Commission (Apr. 9, 2009).
[98] 33 U.S.C. § 403.
[99] 33 U.S.C. § 1344.

10 applies out to the full 200-mile exclusive economic zone.[101] Furthermore, the Ocean Dumping Act (Titles I and II of the Marine Protection, Research, and Sanctuaries Act) prohibits the dumping into the ocean of material that would unreasonably degrade or endanger human health of the environment.[102] If it will not do so, EPA (or the Army Corps, if it is dredged material) may issue a permit for the dumping, according to sites designated according to a site management plan.[103]

If an offshore energy project or any of its components is located in US navigable waters, associated development and construction activities will be subject to environmental impact review and permitting. For example, the installation of offshore turbines and the connection of offshore transmission cables to the onshore electric grid may require dredging and filling, excavation and disposal.[104]

In February 2011, the Army Corps issued for public comment a proposed rule that included a possible new nationwide permit for water-based renewable energy generation pilot projects.[105] As proposed, pursuant to RHA Section 10 and/or CWA Section 404, the permit would authorize structures, work, and discharges of dredged or fill material in waters of the United States "for the construction, expansion, and modification of hydrokinetic or wind energy generation pilot projects and their attendant features." Covered projects may be up to ½-acre in size and result in the loss of no more than 300 linear feet of stream bed. Although the projects would be automatically authorized under such a permit, if adopted and if a state approved its use in Delaware waters under section 401(see below), pre-construction notification will still be required.[106]

ii. Water Quality

The CWA was passed to help restore and maintain the chemical, physical, and biological integrity of US waters. In addition to the dredge and fill requirements noted above, the CWA may affect offshore alternative energy development in three ways: through requirements for a Construction Stormwater Permit for construction sites greater than one acre, water quality standards, and state water quality certifications.

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[100] The term "navigable waters" is defined in the Clean Water Act as "the waters of the United States, including the territorial seas." *Id.* § 1362(7). The term "territorial seas" is defined as "extending seaward a distance of three miles" from shore. *Id.* § 1362(8).
[101] 43 U.S.C. § 1333(e). Judicial precedent affirms the Army Corps' authority to issue permits on the OCS, finding that OCSLA extended the Corps' authority to grant Section 10 permits on the OCS. *See* Alliance to Protect Nantucket Sound, Inc. v. US Dep't of the Army, 288 F. Supp. 2d 64, 72–73 (D. Mass. 2003), aff'd, 398 F.3d 105 (1st Cir. 2005).
[102] 33 U.S.C. § 1412(a), 1413(a).
[103] *Id.* § 1412(a), 1412(c), 1413(a).
[104] MMS, Cape Wind Energy Project Draft Environmental Impact Statement 5–12 (Jan. 2008).
[105] 76 Fed. Reg. 9174 (Feb. 16, 2011).
[106] *Id.* at 9184.

Pursuant to CWA section 402, a National Pollutant Discharge Elimination System (NPDES) permit is required for any discharge of a pollutant into waters of the United States from a point source.[107] Within state waters (0-3 miles), the permits are implemented by approved state programs; beyond state waters (3-200 miles) EPA has authority over the permitting process.[108] Through both jurisdictions, an issued NPDES permit must comply with EPA guidelines for determining whether a discharge would unreasonably degrade marine waters.[109] These permit requirements may be triggered if the facilities are found to discharge any pollutants. Discharges of substances such as various oils, hydraulic fluids, lubricants, paints, or other chemicals are not expected from wind energy facilities, except in "minor amounts" or in the event of an accident.[110] Among the types of NPDES permits that may be required is a permit for construction activities for stormwater discharges.[111] For example, the Massachusetts Cape Wind project's proposed transmission line, which is 5.9 miles long, requires a NPDES permit to address these construction discharges.[112]

States must establish, with EPA review, water quality standards for all water bodies within their borders under Section 303 of the CWA.[113] This includes both internal and state marine waters out to three miles. Among other things, water quality standards must designate uses for water bodies; set water quality criteria (i.e., the maximum concentration of pollutants that may occur in water bodies without impairing attainment or maintenance of a designated use); and establish a policy to prevent the degradation of existing designated uses.[114] In addition, states must establish a "total maximum daily load" of pollutants for water bodies that do not meet, or are expected to fall short of, a state's water quality standards.[115] As pertinent to offshore facilities, water quality standards may be set for turbidity. For example, the Oregon Department of Environmental Quality establishes turbidity standards to protect marine flora and fauna, as well as human uses such as drinking water and recreation.[116] The construction (and decommissioning) of offshore facilities may temporarily increase marine turbidity.[117]

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[107] 33 U.S.C. § 1342; 40 C.F.R. § 122.1(b).
[108] *See* 33 U.S.C. §§ 1342(a)(5), 1343(b).
[109] *Id.* § 1343(a). For further discussion of ocean discharge criteria and CWA Section 403, see Robin Kundis Craig & Sarah Miller, *Ocean Discharge Criteria and Marine Protected Areas: Ocean Water Quality Protection Under the Clean Water Act*, 29 B.C. ENVTL. AFF. L. REV. 1 (2001).
[110] *See* BOEMRE, Programmatic EIS for Alternative Energy and Alternate Uses on the OCS, *supra* note 11, at 5–17.
[111] 40 C.F.R. § 122.26(b)(15)(i).
[112] *See* Cape Wind Energy Project Final Environmental Impact Report/Development of Regional Impact 8-3 (Feb. 15, 2007), *available at* http://www.capewind.org/downloads/feir/FEIR%20Report_Final.pdf.
[113] 33 U.S.C. § 1313.
[114] *Id.*; 40 C.F.R. § 131.6.
[115] 33 U.S.C. § 1313(d)(1)(C).
[116] Oregon Department of Environmental Quality, Water Quality, Standards, Turbidity, http://www.deq.state.or.us/wq/standards/turbidity.htm (last visited June 15, 2011).
[117] *See* Lago et al., *supra* note 51, at 340–41.

Finally, Section 401 of the CWA requires states to review federal actions and certify that they will not violate state water quality standards.[118] Thus, federal activities that pollute state waters can be blocked where the state denies certification. In 2008 the U.S. Court of Appeals for the Second Circuit upheld Connecticut's denial of a 401 water quality certification for a plan to build a natural gas pipeline across Long Island Sound. The court found that the record supported the finding that pipeline installation techniques would violate state water quality standards by eliminating a significant area of near-shore waters from use for shellfishing, and that the company failed to show that it would restore the scarred seabed within a reasonable time to its pre-installation condition.[119]

iii. Safe Navigation

Similar to the FAA's authority in the air, the Coast Guard determines whether facilities on navigable waters would obstruct or create a hazard to navigation.[120] The District Commander of the Coast Guard is permitted to recommend and require markings, lights, and other navigational tools to provide for safe navigation. As offshore energy projects will likely create an obstruction in navigable waters, this will likely apply to them. In addition, the use of vessels in construction and transport of materials and workers to offshore energy projects will require the use of navigable waterways regulated by Coast Guard vessels.[121] The Cape Wind project sought permits from the Coast Guard for the establishment and operation of a Private Aid to Navigation (PATON) to a fixed structure.[122]

The Ports and Waterways Safety Act (PWSA) endows the Coast Guard with authority to control vessel traffic in U.S. navigable waters out to 12 nautical miles, and to protect navigation and the marine environment out to 200 miles.[123] The Coast Guard may control vessel traffic in jurisdictional waters that it determines to suffer from vessel congestion, reduced visibility, adverse weather, or otherwise hazardous conditions,[124] and designate vessel fairways to provide safe access routes for ports or other facilities.[125] When designating fairways, the Coast Guard must "to the extent practicable, reconcile the need for safe access routes with the needs of all other reasonable uses of the area involved."[126] Before making a designation the Coast Guard

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[118] 33 U.S.C. § 1341.
[119] Islander E. Pipeline Co. v. McCarthy, 525 F.3d 141 (2d Cir. May 2, 2008), *cert. denied* 2008 US Lexis 8566 (US, Dec. 1, 2008).
[120] 33 C.F.R. Parts 62, 64, and 66.
[121] Cape Wind Energy Project, *supra* note 112, at 3-85.
[122] *Id.* tbl. 1-2.
[123] 33 U.S.C. §§ 1222(1), 1222(5), 1223(a)(1).
[124] *Id.* § 1223(a)(4).
[125] *Id.* § 1223(c)(1).
[126] *Id.* § 1223(c)(3)(C); US Dep't of Homeland Security, US Coast Guard, Navigation and Vessel Inspection Circular No. 02-07, COMDTPUB P16700.4 (Mar. 9, 2007).

must consult with, among others, the governors of affected states; furthermore, a designation cannot deprive anyone of a right granted by an existing vested lease or permit.[127]

iv. Coastal Barriers

The purpose of the Coastal Barrier Resources Act is to, among other things, minimize the damage to fish, wildlife, and other natural resources associated with the coastal barriers along the Atlantic and Gulf Coasts. It restricts future federal expenditures and financial assistance (including contracts, loans, grants, and cooperative agreements) that encourages the development of coastal barriers.[128] The Act establishes a Coastal Barrier Resources System consisting of undeveloped coastal barriers as well as other coastal areas identified on maps on file with the Secretary of the Interior. Within these areas the Act prohibits the direct or indirect federal funding of various projects that might support development.[129] Thus federal funding for a wind turbine project, for example, may be blocked if the turbine is located at a location listed as an undeveloped coastal barrier in the System. However, the Act provides for limited exceptions, one of which is the allowance of funding after consultation with the Secretary for "any use or facility necessary for the exploration, extraction, or transportation of energy resources which can be carried out only on, in, or adjacent to a coastal water area because the use or facility requires access to the coastal water body."[130] This exception may allow federal support for certain offshore and coastal energy facilities, even on parts of the system.

e. Project Reviews

i. Environmental Review

The federal National Environmental Policy Act (NEPA) requires federal agencies to undertake a comprehensive assessment of any "major federal action significantly affecting the quality of the human environment."[131] While NEPA requires agencies to collect information on the environmental impacts of proposed actions and to consider alternatives, it does not require them ultimately to choose the alternative with the least environmental impacts. The purpose of the statute is simply to enable informed decisions by making sure available information is gathered, alternatives are identified and considered by the decisionmaker, and that there is sufficient opportunity for the public to engage with the process including making the decision-making process transparent. Federal agencies must prepare an environmental impact statement (EIS) detailing the impacts of the proposed action, any adverse environmental effects which cannot be avoided if the proposal is implemented, alternatives to the proposed action, the relationship

[127] *Id.* § 1223(c)(2), 1223(c)(3)(B).
[128] 16 U.S.C. § 3501(b).
[129] 16 U.S.C. §§ 3501–3506.
[130] *Id.* § 3505(a)(1).
[131] 42 U.S.C. § 4332.

between local short-term uses of the environment and the maintenance and enhancement of long-term productivity, and any irreversible and irretrievable commitments of resources involved in the proposed action if it is implemented.[132] An Environmental Assessment may be used to determine whether or not an EIS is needed; if the EA leads to a "finding of no significant impact," then an EIS need not be prepared.[133]

In addition to actions taken directly by the federal government, "federal actions" also include federal leases and activities requiring or receiving federal permits, funding, or other approval.[134] Major federal actions include the issuance of a federal oil and gas or alternative energy lease on the OCS, or a permit under the Rivers and Harbor Act or Section 404 of the Clean Water Act. For offshore oil and gas and alternative energy projects on the OCS, BOEMRE is the lead agency for NEPA purposes. If an EIS is required, BOEMRE will hold a scoping meeting to identify issues and then will prepare a draft EIS, accept public comments, and prepare a final EIS. BOEMRE has indicated that for competitive commercial leases for alternative energy on the OCS there will be two successive NEPA reviews: one for the lease sale and site assessment plan, and another for the construction and operations plan.[135]

Any person, including states or state agencies, may comment on scoping and on draft EISs. Under implementing regulations issued by the Council on Environmental Quality, states and Indian tribes may also seek to become "cooperating agencies," which allows them more continuous access to the review process and ongoing evaluation being conducted by the federal "lead agency" responsible for preparing the EIS.[136]

ii. Coastal Consistency

The Coastal Zone Management Act (CZMA) uses two primary incentives to encourage states to implement state coastal management programs (CMPs). The first is sustained funding via a NOAA-administered federal grant program. The second is the use of federal consistency review by states as a management and oversight tool and a check on federal activities.[137] A state with an approved coastal zone management program may review federal actions within its lands and waters or elsewhere that affect the state's coastal zone (federal consistency), as well as federal actions in another state's lands or waters if the action will affect uses or resources in its own coastal zone (interstate consistency).

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[132] *Id.* § 4332(2)(C).
[133] 40 C.F.R. §§ 1501.4, 1508.9.
[134] *See* 40 C.F.R. § 1508.18.
[135] *See Renewable Energy and Alternate Use Regulations*, 74 Fed. Reg. 19638, 19685, 19689–90 (Apr. 29, 2009). These statements were issued by BOEMRE's predecessor agency, MMS. For alternative energy commercial leases, BOEMRE anticipates preparing an EIS for the lease sale and site assessment "to include the SAP activities." The agency also anticipates that "initially, all commercial development projects will require an EIS for the COP." *Id.*
[136] 40 C.F.R. §§ 1501.6, 1508.5.
[137] 16 U.S.C. §§ 1455–1456.

1. Federal Consistency Generally

Federal consistency review is the authority granted to states under CZMA Section 307 to review federal actions in order to determine whether they are compliant with the state's approved CMP. Through this process, Delaware and each of the other MARCO states can review federal actions that will have reasonably foreseeable effects on its coastal resources and uses to ensure that they are consistent with the state's enforceable policies "to the maximum extent practicable."[138] This includes both activities within and outside state boundaries, as long as they affect the state's coastal zone (including waters). Federal actions include direct federal activities (e.g. a BOEMRE lease sale for alternative energy on the OCS); federally licensed, permitted, otherwise approved actions (e.g., an Army Corps permit under Clean Water Act Section 404); or the federal provision of financial assistance to state and local governments (e.g., funding for a wastewater treatment plant).[139] "Enforceable policies" refers to the state's legally binding policies (including its relevant laws, policies, regulations, and plans), which must have been approved by NOAA as part of its CMP.[140]

A state with an approved CMP in place may review any federal action that may affect its coastal zone. For example, offshore activities on the OCS may affect the coastal zone through water pollution, air pollution, noise pollution, or a variety of other mechanisms, and thus are subject to consistency review.[141] BOEMRE's regulations require two successive consistency reviews for alternative energy projects on the OCS, at the same points that NEPA reviews are required: one for the lease sale and Site Assessment Plan, and another form the Construction and Operations Plan.[142]

The distinction between direct federal actions versus federally approved actions comes into play in that it triggers a somewhat different state response process and review standards.

- <u>For direct federal actions</u> – like OCS lease sales – the federal agency must provide the state with an opportunity to concur or object to the federal determination within 60 days. If the state objects to consistency for a direct federal action, the federal agency may not proceed unless it determines that, and explains how, federal law prohibits the agency action from being fully consistent.[143]

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[138] *Id.* § 1456(c).
[139] *See generally* 15 C.F.R. Part 930, Subparts C–F.
[140] Coastal Zone Management Act Federal Consistency Regulations, 71 Fed. Reg. 788, 789 (Jan. 5, 2006).
[141] BOEMRE, Programmatic EIS for Alternative Energy and Alternate Uses on the OCS, *supra* note 11, at 5-27.
[142] *Renewable Energy and Alternate Use Regulations*, 74 Fed. Reg. at 19690.
[143] 15 C.F.R. § 930.32(a)(1) (defining what it means that the action must be consistent "to the maximum extent practicable"); 16 U.S.C. § 1456(c)(1)–(2). If there is a dispute, the Secretary of Commerce may mediate. 16 U.S.C. § 1456(c), (h). If a federal court order finds the federal agency activity is not in compliance, the President may still exempt those elements of the action he determines to be in the "paramount interest of the United States."

- For activities requiring federal permits or licenses – including plans for exploration, development, and production of energy from an OCS lease – a slightly different approach is used. Here the applicants provide the state with a certification of consistency and supporting data, and then the state has three months (with a three month extension) to concur, issue a concurrence with conditions, or object.[144] An inconsistency finding can be overturned by the Secretary of Commerce if he finds that the activities to which the state has lodged the objection are either consistent with the objectives of the CZMA, or are otherwise necessary in the interest of national security.[145]

Under NOAA's consistency regulations, state coastal management agencies are "strongly encouraged to *list* in their management programs Federal agency activities which . . . will have reasonably foreseeable coastal effects and therefore may require a Federal agency consistency determination."[146] Listed federal agency activities "shall be described in terms of the specific type of activity involved" and if outside the state's coastal zone (e.g., in federal waters or waters of another state), the state "shall also describe the geographic location of such activities."[147] NOAA has approved Delaware's list of enforceable laws and policies, which are used to conduct federal consistency review. The summary of Delaware's Coastal Management Program (CMP) was originally drafted in 1979 and recently updated in 2010.[148] The laws and policies cover a broad range of habitat types and activities.

The DCMP Summary also includes a specific list of the federally permitted and licensed activities that require federal consistency certification.[149] As relevant to offshore energy facilities, the list includes FERC licenses and permits such as orders for the interconnection of electric transmission lines, EPA NPDES and other CWA permits for federal installations, CAA permits, and RCRA permits. As for OCSLA, Delaware's list up until the end of 2010 only specifically included leases and permits related to pipelines, gathering and flow lines, and associated structures and activities, to the extent not covered by an OCS plan. Those listed provisions would not appear to cover alternative energy activities, but the Delaware Coastal Management Program also cites the federal regulatory requirements that all OCS exploration and

[144] 15 C.F.R. Part 930, subparts C–E.
[145] 16 U.S.C. § 1456(c)(3). NOAA regulations provide that a project is "consistent with the objectives" of the CZMA if it satisfies all three regulatory elements required for such a finding: (1) the activity furthers the national interest, as set forth in CZMA sections 302 or 303, in a significant or substantial manner; (2) the national interest furthered by the activity outweighs the activity's adverse coastal effects, when those effects are considered separately or cumulative; and (3) there is no reasonable alternative that would permit the activity to be conducted in a manner consistent with the enforceable policies of the state's coastal management program. 15 C.F.R. 930.121(a)–(c).
[146] 15 C.F.R. § 930.34(b). Similar requirements apply to federal license and permit activities that the state agency wishes to review for consistency. 15 C.F.R. § 930.53. This latter requirement particularly applies to OCS plans and related license or permit activities on the OCS. 15 C.F.R. § 930.74.
[147] 15 C.F.R. § 930.34(b).
[148] Delaware Coastal Management Program, Comprehensive Update and Routine Program Implementation (Feb. 2010).
[149] *Id.* § 3.2.8.

development and production plans, as well as any associated licenses or permits described in detail within them, be subject to federal consistency review.[150] This broad scope should include alternative energy activities.[151]

Moreover, in October 2010 the DCMP submitted a routine program change to NOAA, which proposed to modify its list of federally-permitted and licensed activities subject to consistency review. The request was approved, with modifications, in February 2011.[152] First, the updated program deletes the listing of (i) leases, permits to drill wells, and permits to construct and maintain pipelines, gathering and flow lines, and associated structures, and (ii) permits and rights of use and easements required for pipeline corridors and associated activities. In its place Delaware lists all authorizations made under OCSLA, "including oil and gas activities, alternative energy activities, and alternate uses of existing facilities." This includes testing facilities for alternative energy devices, but excludes meteorological data collection facilities such as towers or buoys. In addition, the list includes FERC licenses, authorizations, and exemptions for activities on the OCS, including hydrokinetic energy devices.[153]

The geographical locations specified for offshore alternative energy activities, which are routinely subject to federal consistency review, include federal waters out to the edge of the contiguous zone (24 nautical miles) off the coasts of Delaware, New Jersey, and Maryland, beginning at Hereford Inlet and ending at the BOEMRE administrative boundary between Maryland and Virginia. The request explained that waters within that range are less than 100 meters deep and thus, in accordance with BOEMRE's Alternative Energy Programmatic Environmental Impact Statement, potentially suitable for alternative energy facility siting. The same waters offshore Virginia were included in DCMP's request, but excluded in NOAA's approval. Geographic locations for review of oil and gas activities were not specified.[154]

2. Interstate Consistency

Interstate consistency is a form of consistency review for federal actions occurring in one state that will affect uses or resources in the coastal zone of another state. The latter state may conduct consistency review if it has included the relevant activities on a list of activities that it

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[150] *Id.* § 3.4.

[151] The requirement applies to "[l]icense and permit activities that are described in the OCS plan, such as, permits to drill, and rights-of-use and easements for the construction and maintenance of structures, platforms, gathering and flow lines," and to "OCS-related licenses and permits, such as for pipeline corridors, artificial islands or other fixed structures, transport of dredged materials, and discharges or emissions subject to the Clean Water Act of 1987 or the Clean Air Act of 1990." *Id.* § 3.4.1; *see also* 16 U.S.C. § 1456(c)(3)(B).

[152] Delaware Coastal Management Program, Routine Program Change - Request for Concurrence (October 2010); Letter from John King, Chief, Coastal Programs Division, NOAA, to Sarah W. Cooksey, Administrator, Delaware Coastal Management Program (Feb. 3, 2011) (on file with authors).

[153] DCMP, Routine Program Change, *supra* note 152, at 7–11; Letter from John King to Sarah Cooksey, *supra* note 152, tbl. 1.

[154] *Id.*

"intends to routinely review for consistency." For each listed activity the state must provide descriptions of geographic locations and demonstrate the activity's reasonably foreseeable coastal effects. The list is submitted to and reviewed by NOAA as a routine program change.[155]

NOAA has developed a conceptual map delineating the consequences of listing or not listing activities, geographic locations, and interstate consistency.[156] Activities dealing with excavation for underwater cables, or placement of energy facilities in state waters offshore other Mid-Atlantic states might be the sort of activities that could affect Delaware's coastal zone and warrant consideration of listing. In 2007, NOAA approved New Jersey's proposed list of activities having interstate coastal effects as a routine program change. The proposal provided for an expanded geographic area – including Pennsylvania and Delaware – for two activities already on New Jersey's list of activities typically subject to federal consistency review by the state. The activities were permits, licenses, or other forms of approval issued under Rivers and Harbors Act Sections 9 and 10 or Clean Water Act Section 404.[157] In 2006, NOAA approved New York's list of activities having interstate coastal effects. As with New Jersey's proposal, the list did not contain any activities not already included on the state's federal consistency review list; it simply expanded the geographic location for the activities to include areas in Connecticut.[158]

As described in the federal consistency section, in October 2010 DCMP submitted and in February 2011 NOAA approved a request of a routine program change.[159] The request included a proposal to add a new Section 4 to the Delaware Coastal Management Program summary.[160] The newly added section outlines the procedures for interstate consistency review and identifies the activities subject to such review. After receiving notification of a proposed listed project, DCMP has thirty days to alert the applicant as to whether it will be conducting an interstate consistency review. If it does review the project, it must notify the applicant and any federal or state permitting agencies of its determination "[a]t the earliest practicable time" or within three

[155] 15 C.F.R. Part 930, Subpart I; § 930.154. "A coastal state that fails to list federal activities subject to interstate review, or to describe the geographic location for these activities . . . may not exercise its right to review activities occurring in other state, until the state meets the listing requirements." *Id.*

[156] *See* NOAA, Office of Ocean and Coastal Resources Management, Federal Consistency Overview, CZMA 307(c)(3)(A) License or Permit Map, http://coastalmanagement.noaa.gov/consistency/media/license_permit_map.pdf (last visited June 13, 2011).

[157] *See* Letter from John King, Chief, NOAA Coastal Programs Division, to Ruth Ehinger, Coastal Management Office, New Jersey Department of Environmental Protection (Oct. 15, 2007), *available at* http://coastalmanagement.noaa.gov/consistency/media/NJinterstateaprv.pdf.

[158] *See* Letter from John King, Chief, NOAA Coastal Programs Division, to George R. Stafford, Division of Coastal Resources, New York Department of State (Mar. 28, 2006), *available at* http://coastalmanagement.noaa.gov/consistency/media/NYinterstateapproval.pdf.

[159] *See* supra text surrounding notes 152–154.

[160] DCMP Routine Program Change, *supra* note 152. The routine program change requested approval of four revisions: a request for electronic submittal of federal consistency documents; the addition of a description of the interstate consistency review process; modification of the approved list of federal licenses and permits subject to consistency review; and certification of a list of activities subject to interstate consistency review. *Id.* at 3.

months of the start of the review (with a possible three-month extension). Any objection must be accompanied by written reasoning and supporting information.[161]

The three categories of activities hereafter subject to routine interstate consistency review are (i) dredging and dredged material disposal, (ii) offshore alternative energy development, and (iii) the placement or modification of substrate for the introduction of non-native shellfish. The offshore alternative energy development category includes testing of alternative energy devices but excludes meteorological data collection facilities. Locations for such activities are specified within 0–3 nautical miles of New Jersey and Maryland:

- In New Jersey, the locations include the Delaware River and Bay, from Artificial Island to Cape May, and state ocean waters from Hereford Inlet south to the end of Cape May; and
- In Maryland, the locations include all state ocean waters.[162]

f. Air

i. Air Emissions

The Clean Air Act grants EPA the responsibility for regulating emissions from OCS sources. An OCS source is defined to include any activity, facility, or equipment that is regulated under OCSLA and located on the OCS.[163] Vessels that are permanently or temporarily attached to the seabed or physically attached to an OCS facility are also considered a source.[164] Standards for sources located within 25 miles of the seaward boundary of a state must be the same as "[s]tate and local requirements for emission controls, emission limitations, offsets, permitting, monitoring, testing, and reporting."[165] New OCS sources are required to meet such standards within 24 months. During the construction, operation, and decommissioning stages of an OCS energy project, emissions from vessels traveling to and from the facilities on the OCS may be subject to permitting under the Act.

In Delaware, the Department of Natural Resources and Environmental Conservation (DNREC) Air Quality Management Section (DAQMS) is responsible for permitting facilities subject to the Clean Air Act. This may encompass a variety of facilities including pipelines, transportation terminals, biomass facilities, and others. In June 2010, the DNREC Secretary approved

[161] *Id.* at 4–5; Letter from John King to Sarah Cooksey, *supra* note 152, tbl. 1 (approved).
[162] DCMP Routine Program Change, *supra* note 152, at 21–27, 21 tbl. 2; Letter from John King to Sarah Cooksey, *supra* note note 152, tbl. 1 (approved with modifications). As noted in the federal consistency section, such activities would also be reviewed if in federal waters off Delaware or these states, out to 24 miles.
[163] 42 U.S.C. § 7627(a)(4)(C).
[164] *Id.*
[165] *Id.* § 7627(a)(1).

DAQMS' proposed regulations for OCS air permitting, which incorporated by reference EPA's regulations.[166] The following month, Delaware became the first state to receive delegated authority from EPA to enforce and implement OCS air regulations for any OCS source within 25 miles of shore, for which Delaware is the geographically closest onshore area.[167]

ii. Navigable Airspace

Federal regulations require notice of any proposed construction or alteration of an object that would affect the navigable airspace of aircraft.[168] The Federal Aviation Administration (FAA) then conducts aeronautical studies to determine the obstructions impact on aeronautical safety.[169] Depending on the height and siting of a proposed offshore energy project, notice to the FAA may be required and the FAA may conduct aeronautical studies to assess the aeronautical safety of the proposal.[170] The requirement would be triggered by offshore energy structures rising more than 200 feet above ground level.[171] FAA assessments of the Cape Wind project included whether the project would introduce physical, electromagnetic, or line of sight interference with existing or proposed air navigation, communications, radar, or control system facilities, as well as whether the project would result in an adverse impact upon air traffic operations, airport efficiency, runway length, or airport traffic patterns.[172] In 2010 the FAA found that the Cape Wind proposal did not pose a threat to aircraft.[173]

g. Fish & Wildlife

i. Birds

The Migratory Bird Treaty Act (MBTA) implements four treaties protecting migratory birds between the United States and Great Britain (1916), Mexico (1936), Japan (1972), and the

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[166] DNREC, Secretary's Order No. 2010-A-0014 (June 11, 2010). The regulations were adopted in 7 Del. Admin Code 1150.

[167] EPA's OCS air regulations are found at 40 C.F.R. Part 55. DNREC, News, Delaware becomes first state to receive delegation from EPA for offshore wind permitting (July 22, 2010), http://www.dnrec.delaware.gov/News/Pages/Delaware_becomes_first_state_to_receive_delegation_from_EPA_for_offshore_wind_permitting.aspx.

[168] 14 C.F.R. Part 77; 49 U.S.C. § 44718.

[169] 14 C.F.R. § 77.35. *See also* Cape Wind Energy Project, *supra* note 112, at 3-333–3-334.

[170] *See* 14 C.F.R. § 77.13. The airport referenced must have a runway more than 3,200 feet in length.

[171] *Id.* Any structure over 200 feet located within 3 miles of the established reference point of an airport (the height limit increases 100 feet each additional nautical mile from the airport, to a maximum of 500 feet), and any structure rising 500 feet above ground level, is presumptively considered an obstruction unless the study determines otherwise. *Id.* § 77.23.

[172] US Army Corps of Engineers, Cape Wind Associates, LLC Cape Wind Energy Project, Draft Environmental Impact Statement/Environmental Impact Report/Development of Regional Impact 5.12, *available at* http://www.nae.usace.army.mil/projects/ma/ccwf/deis.htm.

[173] *See* Cape Wind Statement on FAA Approval, May 17, 2010, http://www.capewind.org/news1112.htm?dbk.

former USSR (1976).[174] The MBTA makes it unlawful to attempt to, cause to, or actually pursue, hunt, take, capture, kill, possess, sell, barter, purchase, ship, export, import, transport, or carry any migratory bird protected under the four treaties.[175] It attaches strict liability to the killing of a protected migratory bird. Thus, offshore energy developers should avoid project locations where they may incur liability.[176]

Similarly, the Bald and Golden Eagle Protection Act prohibits the taking of any bald eagle or golden eagle, alive or dead, or any part, nest, or egg thereof, and imposes both civil and criminal penalties.[177]

ii. Fish and Wildlife

Under the Fish and Wildlife Coordination Act all federal agencies and departments, or any public or private entity with a federal permit or license, must consult with FWS, DOI, and the state agency with authority over wildlife resources whenever "the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose."[178] The Act further requires the Secretary of the Interior to submit a report that outlines the possible damage to wildlife resources from the proposed project, the measures that should be adopted to prevent the loss of or damage to wildlife resources, and an estimation of the wildlife benefits or losses resulting from the project.[179] If the construction of an offshore energy facility, or the laying of associated transmission cables, is deemed to divert or modify federal waters this Act may apply.

The primary federal legislation regulating offshore fishing is the Magnuson-Stevens Fishery Conservation and Management Act.[180] The Act requires agencies to consult with NOAA to avoid impairing areas designated as Essential Fish Habitat (EFH) because they are necessary for spawning, breeding, feeding or growth to maturity of marine fish species.[181] NOAA notes that EFH "can consist of both the water column and the underlying surface (e.g., seafloor) of a particular area." EFH have been identified for a number of species by the **Mid-Atlantic Fishery Management Council**, of which Delaware is a member.[182] MAFMC's jurisdiction covers the

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[174] 16 U.S.C. § 703(a).
[175] *Id.*
[176] *Id.* § 707(a). "[A]ny person, association, partnership, or corporation who shall violate any provisions of said conventions or of this subchapter, or who shall violate or fail to comply with any regulation made pursuant to this subchapter shall be deemed guilty of a misdemeanor and upon conviction thereof shall be fined not more than $15,000 or be imprisoned not more than six months, or both." *Id.*
[177] *Id.*§ 668.
[178] 16 U.S.C. §§ 661–666.
[179] *Id.* § 662(b), (f).
[180] 16 U.S.C. §1801-1882, 90 Stat. 331, Pub. L. 94-265 (amended by Pub. L. 104-297).
[181] 16 U.S.C. § 1855(b); 50 C.F.R. § 600.
[182] To see EFH that have been designated in a given area, see NMFS, Essential Fish Habitat Mapper, http://sharpfin.nmfs.noaa.gov/website/EFH_Mapper/map.aspx (last visited June 13, 2011).

U.S. Exclusive Economic Zone (3 to 200 miles offshore) off the coasts of New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and North Carolina. MAFMC manages fisheries for Atlantic mackerel, squids, butterfish, spiny dogfish, summer flounder, scup, black sea bass, surfclam, ocean quahog, tilefish, and monkfish.[183] MAFMC may make comments and recommendations on state or federal actions that "may affect the habitat, including essential fish habitat" of a fish resource, and are *required* to comment on such actions that may affect the habitat of anadromous fishes.[184] Upon information from a state or federal agency or other source that a federal or state action "would adversely affect any essential fish habitat," NMFS "shall recommend to such agency measures that *can* be taken by such agency to conserve such habitat."[185] Federal agencies, but not *state* agencies, are obligated to provide a reasoned response to such recommendations, including an explanation for why any recommendations were not accepted.[186]

Another body, recognized by federal legislation, is the **Atlantic States Marine Fisheries Commission.** ASMFC was formed in 1942 through an interstate compact approved by Congress to coordinate fisheries management in the waters of the fifteen Atlantic Seaboard states, primarily in near-shore waters.[187] The Commission develops and promulgates fishery management plans (FMPs) for twenty-four Atlantic fish species or species groups that states are responsible for implementing within their respective jurisdictions.[188] If the Commission determines that a state is not in compliance with an FMP, it notifies NMFS. If NMFS concludes that "the measures that the State has failed to implement and enforce are necessary for the conservation of the fishery in question," NMFS may impose a moratorium on fishing within that state's waters.[189] Of relevance for offshore energy projects, the enforceable FMPs may include measures for conservation and management of fish habitat.[190] ASMFC strategies that will be of relevance to any offshore energy developments waters include: developing or updating habitat sections in the FMPs; assessing the effectiveness of habitat compliance requirements; strongly promoting intrastate programs that improve integrated management of fish; and encouraging

[183] *See* MAFMC, History of Fishery Management Plants, http://www.mafmc.org/fmp/fmp.htm (last visited June 13, 2011).
[184] 16 U.S.C. §1855(b).
[185] 16 U.S.C. §1855(b) (emphasis added).
[186] 16 U.S.C. §1855(b); *see also* 50 C.F.R. part 600, subparts J & K.
[187] ASMFC, http://www.asmfc.org/ (last visited June 15, 2011).
[188] 16 U.S.C. § 5104; ASMFC, Interstate Fisheries Management Program Charter §7 (last revised Nov. 2002). The 1993 law also authorizes NMFS to develop regulations for management of federal fisheries in the Exclusive Economic Zone that are compatible with the FMPs adopted by the ASFMC. 16 U.S.C. § 5103(b).
[189] 16 U.S.C. §§ 5104, 5106.
[190] *See* ASMFC, Interstate Fisheries Management Program Charter §6(a)(5) (last revised Nov. 2002) (conservation programs and management measures "shall be designed" to protect fish habitat); *id.* §6(b)(1)(v) (FMPs shall include "review and status of fish habitat"); *see also* 16 U.S.C. § 5103(a) (federal support for state efforts includes assistance with habitat conservation).

development of scientifically sound, spatially and temporally representative pre- and post-construction surveys for coastal alteration projects.[191]

iii. Marine Mammals

The Marine Mammal Protection Act (MMPA) was established to maintain "optimum sustainable populations" of marine mammals.[192] Unless specifically permitted, the MMPA prohibits the taking or harassment of marine mammals.[193] Three of the prominent risks assessed in the Cape Wind project were possible vessel strikes, acoustic injuries, and disturbance of migratory patterns from the increased travel of vessels during construction. The Cape Wind project found that the likelihood of either direct or indirect harassment from vessel collisions and acoustic noise or disturbance of migration was low, because the site of the project and the transportation vessel routes were not areas with high concentrations of marine mammals nor would the vessels move at dangerous speeds.[194]

iv. Endangered Species

Section 9 of the Endangered Species Act (ESA) makes it illegal to "take [listed] species within the United States or the territorial sea of the United States."[195] Under Section 10, depending on whether it is a terrestrial or marine species the Department of the Interior's Fish and Wildlife Service (FWS) or the Department of Commerce's NOAA National Marine Fisheries Service (NMFS) (together the Services) has authority to issue an "incidental take permit" and to allow "otherwise lawful state or private actions that would result in the incidental taking of listed species," so long as the taking is in fact incidental to and not the objective of the activity.[196] Developers considering an offshore energy project may find it necessary to apply for and defend an incidental take permit prior to proceeding with construction.

In addition, Section 7 requires federal agencies to "consult" with the relevant Service to insure any action authorized, funded, or carried out by the agency is not "likely to jeopardize the continued existence of [listed species] . . . or result in the destruction or adverse modification [of critical habitat]."[197] The Services are responsible for working with other agencies to plan or

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[191] ASMFC Habitat Program, Five-Year Strategic and Management Plan, 2007-2011, at 5–6 (approved Feb. 1, 2007).
[192] 16 U.S.C. § 1361(6).
[193] *See generally id.* §§ 1361–1407. The MMPA defines "take" as "to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal." *Id.* § 1362(13). Harassment is defined to include "any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal . . . or disrupt behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering." *Id.* 1362(18)(A).
[194] *See* Cape Wind Energy Project, *supra* note 112, at 3-122, 3-132.
[195] 16 U.S.C. § 1538(a)(1)(B). Under the ESA, "the term 'take' includes to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." *Id.* § 1532(19).
[196] *Id.* § 1539(a)(1)(B).
[197] *Id.* § 1536.

modify federal projects so that they will have minimal impacts on listed species and their habitats. The ESA commands all other federal agencies to comply with its provisions, even where such protection conflicts with the agency's primary responsibility.[198] These risks occur both in the construction phase as well as in the operational phase of an offshore energy project, and should be factored in when considering the life cycle of the project. Section 7 is likely to apply to offshore energy projects and may require modification of the project, mitigation, and other actions if the project is to receive and proceed with a finding of no jeopardy.

h. Protected Areas

i. Sanctuaries and Monuments

The National Marine Sanctuaries Act (NMSA) prohibits destruction or injury to designated marine sanctuaries and requires consultation with NOAA on federal agency actions likely to destroy, injure, or cause the loss of any sanctuary resource.[199] Designations may be made by the Secretary of Commerce to promote comprehensive management of their special conservation, recreational, ecological, historical, research, educational, or aesthetic resources.[200] Congress may legislatively create national marine sanctuaries; and the President may establish equivalent status by designating national monuments under the American Antiquities Act.[201] No national marine sanctuaries or marine national monuments have yet been designated off of Delaware's coast. If they are, however, it is likely that non-hydrokinetic alternative offshore energy facilities would be excluded in at least the federal waters portion, as NMSA prohibits BOEMRE from issuing a lease, easement, or right-of-way for any alternative energy within a sanctuary or national monument on the OCS.[202]

ii. Historic Sites

The National Historic Preservation Act (NHPA) can affect development by requiring federal agencies to take into account the effects that actions will have on items or sites listed, or eligible for listing, in the National Register of Historic Places.[203] In particular, federal agencies will need

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[198] *See id.* § 1531(c)(1); *see also id.*§ 1536 (requiring that "[e]ach Federal agency, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency is [un]likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with affected States, to be critical, unless such agency has been granted an exemption for such action by the Committee," while employed the best scientific and commercial data available).
[199] 16 U.S.C. § 1431 *et seq*.
[200] *Id.* § 1433(a)(2).
[201] 16 U.S.C. § 431.
[202] 43 U.S.C. § 1337(p)(10). The section of OCSLA applicable to alternative energy "does not apply to any area on the outer Continental Shelf within the exterior boundaries of any unit of the National Park System, National Wildlife Refuge System, or National Marine Sanctuary System, or any National Monument." *Id.*
[203] *See generally* 16 U.S.C. § 470.

to determine – in coordination with state historic preservation office – the effects that a proposed development will have on historic sites where the development is build, funded, or (as in the case of offshore energy facilities) permitted by a federal agency.[204]

iii. Military Operations

Military uses of Atlantic and Chesapeake waters create issues for consideration and consultation with the Department of Defense. For example, the Patuxent River Naval Air Station in Maryland serves as a major national training and testing facility and Headquarters of the Naval Air Systems Command. Operations include the US Naval Test Pilot School and the Naval Air Warfare Aircraft Division. Training, testing, radar and electronic systems may be affected by some wind generation facilities. The Navy notes that "the Chesapeake Test Range consists of selected targets and airspace covering regions over the Chesapeake Bay, Maryland, Delaware, and Virginia. Additional air/sea space is available in the Atlantic Warning Areas, located east of the Delmarva Peninsula over the Atlantic Ocean."[205] There are substantial naval operations in many of the waters of the Mid-Atlantic states, particularly the fleet at Norfolk and installations at Oceana, Wallops Island, and Dam Neck in Virginia, among others. This means that the siting of offshore energy facilities will need to take into account numerous national defense uses of waters and air space, including exclusion zones.

[204] *Id.*
[205] Naval Air Systems Command, Atlantic Test Ranges, http://www.navair.navy.mil/ranges/atr/index.htm (last visited June 15, 2011).

Section III. Interstate

In the Mid-Atlantic Region, there are a number of overlapping efforts that will affect Delaware's ability to plan for effective implementation of offshore renewable energy. Coordination of these bodies and efforts may require a substantial amount of work. The following are the most important of the interstate bodies and agreements with which Delaware interacts and supports.

Mid-Atlantic Regional Council on the Ocean (MARCO): New York, New Jersey, Delaware, Maryland and Virginia have committed to work together to address important offshore issues, including the siting and approval of renewable energy facilities. The renewable energy goal of MARCO includes research to assess the construction and operations impacts of energy development on ocean and coastal resources, identification of opportunities to use that information in permitting, identification of barriers to offshore renewable energy development, identification of opportunities for coordination, and preparation of a comprehensive offshore use map and decision support tool to facilitate siting and minimize adverse impacts.

Atlantic Offshore Wind Energy Consortium: This body established by MOU in 2010 between the Department of the Interior and Maine, New Hampshire, Massachusetts, Rhode Island, New York, New Jersey, Delaware, Maryland, Virginia, and North Carolina is intended to clarify permitting and regulation, inventory and share available environmental data, and work on economic, infrastructure, transmission, and workforce issues related to offshore wind development.[206]

Three-State Offshore Wind MOU: Delaware, Virginia, and Maryland entered into an MOU on offshore wind energy development in November 2009, focusing on transmission coordination, demand, and workforce issues.[207]

CMSP Regional Planning Body: Delaware, Maryland, New Jersey, New York, Virginia, and Pennsylvania (i.e., the MARCO states plus Pennsylvania) are in the Mid-Atlantic Region for purposes of conducting Coastal and Marine Spatial Planning pursuant to President Obama's July 2010 Executive Order.

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[206] *See supra* text surrounding notes 46–50.

[207] Memorandum of Understanding Between The States of Delaware and Maryland and the Commonwealth of Virginia Related to Common Interests Associated with Offshore Wind Energy Development (November 9, 2009). In 2009, the Virginia General Assembly enacted a bill inviting Delaware, Maryland, New York, and New Jersey to consider entering into an interstate compact to "promote coordinated research and planning of the design, construction, utility interconnection, financing, and operation of offshore wind energy infrastructure and operations directly adjacent to the shores of the party states." Virginia S.B. 1349 (2009), codified at Va. Code § 2.2-6000.

Mid-Atlantic Regional Association Coastal Ocean Observing System (MARACOOS): This is a research consortium of federal, state, non-governmental, industry, and academic data generators and providers exchanging information on the coastal ocean in the Mid-Atlantic Bight between Cape Cod and Cape Hatteras. It is one of the 11 regional ocean observing systems in the United States, and is the result of the merging of the Mid-Atlantic Coastal Ocean Observing Regional Association (MACOORA) and the Mid-Atlantic Regional Coastal Ocean Observing System (MARCOOS).[208]

Mid-Atlantic Fishery Management Council: This body, consisting of New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and North Carolina, manages specific fish species and designates Essential Fish Habitat under the Magnuson-Stevens Act.

Atlantic States Marine Fisheries Commission: This federally-recognized interstate compact of fifteen states coordinates management of certain marine fisheries primarily in near-shore waters.

Delaware and the MARCO states will need to find effective ways to address the technical issues and environmental effects of offshore wind facilities sited in either state or federal waters. Among the key issues are coordinating among the states over the siting and placement of offshore wind turbines, areas of exclusion, and areas with specific limitations. Further decisions concern how turbine sites are to be connected with one another and where the power should best be brought ashore consistent with other uses of the ocean and protection of coastal environments. MARCO states will need to consider impacts to state submerged lands, effects on fish and wildlife species, recreational and commercial ocean fisheries, shipping, coastal wetlands and beaches, tourism and recreation, and economic development. Managing the multiplicity of task forces, councils, interstate agreements, and federal relationships is also important if the numerous technical, fiscal, and environmental issues are to be effectively and speedily addressed.

In the context of MARCO and previous informal relationships among the states, a substantial amount of work on spatial assessment of offshore wind potential and conflicting ocean uses has been done in the region – in part through cooperative research involving the Virginia Coastal Energy Research Consortium, and collaboration with the Department of Defense and The Nature Conservancy.

[208] *See generally* MARACOOS, www.maracoos.org and www.maracoos.org/node/114 (last visited June 16, 2011).

Section IV. Delaware

a. Delaware Coastal Management Program

Pursuant to the Coastal Zone Management Act (CZMA), NOAA approved Delaware's Coastal Management Program (DCMP) in 1979. The networked program seeks "to protect, develop, and where possible, enhance" Delaware's coastal resources, which it accomplishes by overseeing coastal research, managing coastal education and grant programs, supporting land use and special area management planning, assisting with coastal policy development, and coordinating the application of Delaware's "enforceable policies" through federal consistency review.[209] The DCMP is housed within the Delaware Department of Natural Resources and Environmental Control (DNREC), alongside the Delaware National Estuarine Research Reserve (DNERR) and the Delaware Coastal and Estuarine Land Conservation Program (CELCP).

The DCMP coastal management area encompasses the entire state, and extends out to three miles from shore. This reaches further inland than Delaware's Coastal Zone Act, which as explained below, also applies seaward out to three miles but is bounded inland by specified roads.[210] DCMP recently updated its program summary (DCMP Summary), which in addition to providing background information about the program and its underlying authority also outlines the state's enforceable policies and process for conducting federal consistency reviews.[211] The enforceable policies cover myriad habitats, resources, and management areas, and the provisions that are relevant to offshore alternative energy development are described in detail in the remainder of this section.

As described previously in the section on federal consistency,[212] the DCMP Summary explains the process for conducting federal consistency review. The Summary identifies the Delaware enforceable policies that apply, as well as a list of the federally licensed and permitted activities that routinely trigger federal consistency review.[213] The DCMP recently submitted a routine program change to NOAA that will amend the list to explicitly include offshore energy activities, including those that occur out to 24 nautical miles offshore of Delaware, New Jersey, Maryland, and Virginia, and adds a list of activities in those three neighboring states that would be subject to interstate consistency review.[214]

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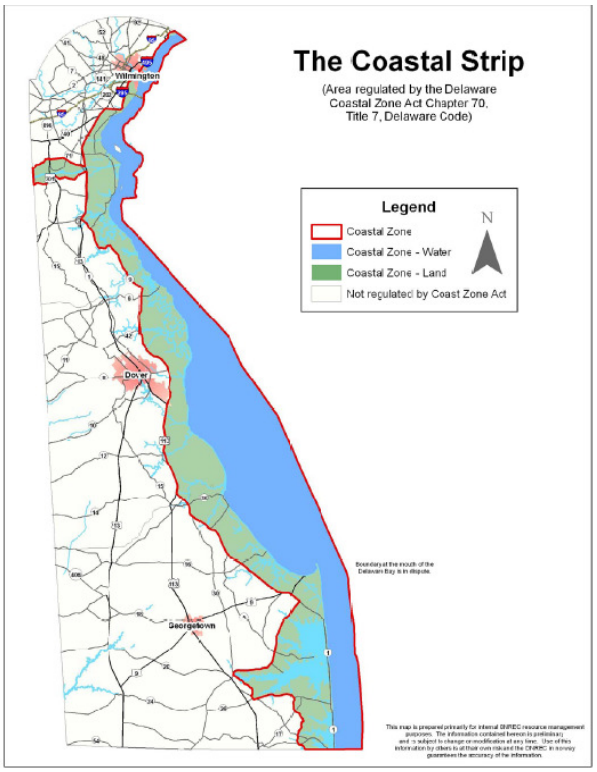
[209] *See* DNREC, Delaware Coastal Programs Section, http://www.swc.dnrec.delaware.gov/coastal/Pages/CoastalPrograms.aspx (last visited June 14, 2011).
[210] Delaware Coastal Management Program, Comprehensive Update and Routine Program Implementation: Program Summary to Supplement 1979 Document (Feb. 2010), § 1.2.
[211] *See generally id.*
[212] *See supra* Part II.e.ii.1.
[213] *See* DCMP Program Summary, *supra* note 210, at § 3.2.8. The DCMP Summary does not include a similar list of direct federal activities presumptively subject to consistency review.
[214] *See supra* Part II.e.ii.

b. Delaware Coastal Zone Act

In 1971, Delaware enacted the Coastal Zone Act (CZA) to control the location, extent, and type of industrial development in the state's coastal areas.[215] The law prohibits heavy industry uses of any kind in the coastal zone unless they were in operation before June 28, 1971;[216] other "manufacturing" uses are allowed by permit only.[217] For purposes of this permitting law, the regulated coastal zone is defined as the land, water, and submerged land between Delaware's territorial limits to seaward (viz. out to three miles) and a line formed by certain roadways.[218]

Figure 2. Delaware Coastal Zone Act jurisdiction[219]



[215] Del. Code, tit. 7, § 7001 ("It is . . . the declared public policy of the State to control the location, extent and type of industrial development in Delaware's coastal areas. In so doing, the State can better protect the natural environment of its bay and coastal areas and safeguard their use primarily for recreation and tourism."). *See also,* Kreshtool v. Delmarva Power & Light Co., 310 A.2d 649, 651 (Del. Super. Ct. 1973) ("The purpose of the [CZA] is to control the location, extent and type of industrial development that is most likely to pollute Delaware's bays and coastal areas.")
[216] Del. Code, tit. 7, § 7003.
[217] *Id.* § 7004.
[218] *Id.* § 7002(a).
[219] DNREC, The Coastal Strip, http://www.dnrec.delaware.gov/Admin/CZA/Documents/Map%20of%20the%20Coastal%20Zone.pdf (last visited June 14, 2011).

The Department of Natural Resources and Environmental Control (DNREC) Coastal Zone Act Program administers the CZA, including the issuance of permits.[220] DNREC must determine whether a proposed use is a prohibited heavy industry use, a manufacturing use allowable by permit, or a use requiring no action under the CZA.[221] To obtain a permit for a manufacturing use, applicants must first obtain zoning approval from the applicable county or municipality and prepare an environmental impact statement.[222] If the use requires a permit, DNREC must consider the environmental impact, economic effect, aesthetic effect, number and type of supporting facilities required and their impacts, effect on neighboring land uses, and county and municipal comprehensive plans for development and/or conservation.[223] DNREC permit decisions can be appealed to the State Coastal Zone Industrial Control Board, which was created by the CZA,[224] and from there to superior court.[225] Violations of the law may result in penalties of not more than $50,000/day for each offense.[226]

The definitions of heavy industry use and manufacturing use are crucial to an understanding of the reach of the statute.[227] Heavy industry use is identified by a combination of physical characteristics and the potential to pollute the environment.[228] "Heavy industry use" means a use

> characteristically involving more than 20 acres, and characteristically employing some but not necessarily all of such equipment such as, but not limited to, smokestacks, tanks, distillation or reaction columns, chemical processing equipment, scrubbing towers, pickling equipment and waste-treatment lagoons; which industry, although conceivably operable without polluting the environment, has the potential to pollute when equipment malfunctions or human error occurs. Examples of heavy industry are oil refineries, basic steel manufacturing plants, basic cellulosic pulp-paper mills, and chemical plants such as petrochemical complexes.[229]

However, interestingly for consideration of offshore alternative energy development, onshore facilities that are less than 20 acres in size, including but not limited to service or supply structures required for the transfer of materials and workers in support of offshore research,

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[220] Del. Code, tit. 7, § 7005.
[221] *Id.*
[222] *Id.* § 7004(a).
[223] *Id.* § 7004.
[224] *Id.* §§ 7006, 7007(a).
[225] *Id*. § 7008. DNREC may also appeal from Board decisions.
[226] *Id*. § 7011.
[227] See, e.g., Kenneth T. Kristl, *Keeping the Coast Clear: Lessons About Controlling the Natural Environment by Controlling Industrial Development under Delaware's Coastal Zone Act*, 25 PACE ENVTL. L. REV. 37 (2008)
[228] *See* Kreshtool v. Delmarva Power & Light Co., 310 A.2d 649 (Del. Super. Ct. 1973) (upholding CZICB's finding that a 400,000 KW electric generating unit was not a heavy industrial use because section 7002's physical characteristic requirements were not met and levels of potential pollution were acceptable.).
[229] Del. Code, tit. 7, § 7002(e).

exploration and development operations, are not considered heavy industry.[230] "Manufacturing" is simply defined as the mechanical or chemical transformation of substances into new products.[231]

The CZA directs DNREC to develop a comprehensive plan and guidelines for the Board concerning types of manufacturing uses deemed acceptable in the coastal zone and to develop binding regulations for Board approval elaborating on the statutory definition of heavy industry.[232] In 1993, the Board adopted a set of regulations, which were overturned in court due to procedural violation.[233] In 1998, stakeholders signed a memorandum of understanding describing the concepts to be covered in a new set of CZA regulations. The memorandum was used as the basis for the current set of regulations, which became effective in 1999.[234] These regulations establish the permitting requirements for existing non-conforming uses (i.e., those industrial uses that predate the CZA) and for new manufacturing uses in the coastal zone.[235]

The current regulations do not further define manufacturing uses or heavy industrial uses. However, they do define "potential to pollute," a key term in the CZA definition of heavy industry. This term means "the potential to cause both short and long term adverse impacts on human populations, air and water quality, wetlands, flora and fauna, or the potential to produce dangerous or onerous levels of glare, heat, noise, vibration, radiation, electromagnetic interference and obnoxious odors."[236] This definition incorporates a broad array of impacts, including some impacts that may apply to offshore renewable energy production. One commentator has noted that this definition does not resolve uncertainty with respect to the amount of potential pollution that could trigger the definition of heavy industry.[237]

In addition to defining the potential to pollute, the regulations identify uses that are deemed *not* to constitute heavy industry or manufacturing uses under the CZA. These uses include, but are not limited to, facilities used in transmitting, distributing, transforming, switching and otherwise transporting and converting electrical energy; facilities used to generate electric power directly from solar energy; and the repair and maintenance of existing electrical generating facilities providing such repair or maintenance does not result in any negative environmental impacts.[238]

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[230] *Id*.
[231] *Id*. § 7002(d).
[232] *Id*. § 7005(c).
[233] Chemical Indus. Council v. State Coastal Zone Indus. Control Bd., 1994 Del. Ch. LEXIS 70 (Del. Ch. May 19, 1994).
[234] DNREC, Coastal Zone Act Program, http://www.dnrec.delaware.gov/Admin/CZA/Pages/CZABackground.aspx (last visited June 14, 2011).
[235] Del. Admin. Code, tit. 7, § 101, at 2.0.
[236] *Id*. at 3.0.
[237] Kristl, *supra* note 227, at 55 ("[T]he amount of actual or potential pollution necessary to trigger a finding of heavy industry use is undefined, raising at least the possibility that even small amounts could be enough to make a facility satisfy the definition.").
[238] Del. Admin. Code, tit. 7, § 101, at 5.0.

The regulations also list a few specific uses that require a permit, as well as providing that a permit is required for any new activity by an existing heavy industry or any manufacturing facility that may result in any negative impact.[239] Other than listing of solar energy generation as not regulated, other electrical generating facilities (such as wind facilities) are not listed as a prohibited use, use requiring a permit, or unregulated use.

The regulations further outline the process of obtaining a status decision under the CZA. Under this process, any person wishing to initiate a new activity or facility may request a determination of whether the activity or facility is a heavy industry and whether it requires a permit.[240] The regulations also set forth the process whereby applicants may apply for a permit, should one be required,[241] and requirements for the contents of the required environmental impact statement.[242] The regulations also require that any permit application must more than offset any negative environmental impacts associated with the proposed project.[243] The regulations include requirements for public engagement, including information availability, notification, and hearings.[244]

The regulatory status of offshore electricity generation facilities and associated facilities may require a status determination or another form of clarification. According to the regulations, electrical transmission and support facilities are not regulated uses under the CZA. As for generating facilities, wind turbines do not fit the CZA definition of manufacturing. But wind turbines in the coastal zone (not federal waters) may trigger some scrutiny as heavy industry. While generating facilities could involve more than 20 acres, renewable energy generation equipment appears to differ qualitatively from types of characteristic equipment listed in the statutory definition. Moreover, turbines and related facilities may be regarded as having the potential to pollute as defined by DNREC due to noise pollution, potential discharges of waste or sediment during construction or operation, or other impacts. Because an electrical generation facility such as a wind turbine is not clearly listed on DNREC's list of "uses not regulated" while solar facilities are included, this could suggest that these facilities might be prohibited if meeting the definition of heavy industry.

c. Beach Preservation Act

In 1972, Delaware enacted the Beach Preservation Act (BPA) to ensure that the development and habitation of Delaware beaches proceeds only after due consideration to the natural forces

[239] *Id*. at 6.0.
[240] *Id.* at 7.0.
[241] *Id.* at 8.0
[242] *Id.* at 8.2
[243] *Id.* at 9.0.
[244] *Id.* at 10.0 *et seq*.

"impacting" beaches and to the dynamic nature of beaches.[245] The BPA's purposes are to enhance, preserve and protect the public and private beaches of the State, to mitigate beach erosion, and to create civil and criminal remedies and associated penalties for acts destructive to beaches.[246]

Authority for administering the BPA is vested in DNREC.[247] DNREC has established regulations to implement the BPA,[248] and Delaware courts have found the department enjoys substantial deference in interpreting and implementing the statute.[249] DNREC has contemplated revising the regulations and released a draft of the revised regulations for public comment that would substantially reorganize and, in some cases, substantively amend existing provisions.[250]

The BPA operates by requiring DNREC approval for a variety of private activities.[251] DNREC approval is in addition to, and does not replace, existing zoning and other legal requirements associated with development.[252]

For the purposes of the BPA, a "beach" extends from the mean high water line 1,000 feet landward (or to the first roadway, if nearer) and 2,500 feet seaward.[253] The law also defines a "building line" on the beach. DNREC determines and provides maps of the location of the building line by comparing topographic surveys to a defined elevation contour.[254] Permitting

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[245] Del. Code, tit. 7, § 6801.
[246] *Id.*
[247] *Id.*
[248] Del. Admin. Code, tit. 7, § 5102, at 1.0–9.2.
[249] Olney v. Cooch, 425 A.2d 610 (Del. 1981); Atlantis I Condominium Assoc. v. Bryson, 403 A.2d 711, 714 (Del. 1979) ("[T]he lack of specific policy standards in the Act, coupled with the general directives to the DNREC "to enhance, preserve, and protect" the beaches and "to adopt such rules and regulations as it deems necessary to effectuate [those] purposes", suggests that the General Assembly . . . realized its inability to articulate specific policies to alleviate the problem. Rather, the General Assembly was aware of the difficulties in attempting to legislate the specifics of a coordinated beach management plan, and instead, chose to defer to the expertise of the DNREC in that area.").
[250] DNREC, Draft Regulation Governing Beach Protection and the Use of Beaches, Doc. 40-07/03/06/----, *available at* http://www.dnrec.state.de.us/dnrec2000/Divisions/Soil/ShorelineCons/Draftregulations105.pdf [hereinafter *Proposed BPA Regulations*]. According to staff, the revisions have been withdrawn; DNREC intends to move forward in the future with different draft revisions. Because the proposal may not accurately represent the agency's current thinking, this section focuses primarily on the existing regulations. However, we note where the draft would have materially amended relevant existing provisions to indicate potential areas for future reconsideration.
[251] Del. Code, tit. 7, §§ 6805. 6803; *See also 4th Generation, Ltd. v. Board of Adjustment*, 1987 Del. Super. LEXIS 1205, *21-2. (Del. Super. Ct. July 16, 1987).
[252] Del. Admin. Code, tit. 7, § 5102, at 2.09.
[253] Del. Code, tit. 7, § 6802; Del. Admin. Code, tit. 7, § 5102, at 1.0.
[254] Del. Code, tit. 7, § 6802; Del. Admin. Code, tit. 7, § 5102, at 1.0. The regulations provide that the precise contour may be either 7 or 10 feet; however, DNREC determines its exact placement. *Lynch v. State*, 1994 Del. Super. LEXIS 654 at *5.(Del. Super. Ct. Dec. 8, 1994) ("It is clear from the language of [section 6802(4)] that the actual placement of the line is determined by DNREC consistent with the statutory definition and the topography of the area."). The draft regulations alter the existing regulatory definition of building line to correspond precisely to the statutory definition, *Proposed BPA Regulations* at 2.12, but elsewhere specify a slightly modified formula for

requirements differ based on whether a proposed activity takes place to the landward or seaward of this building line. Per statute, a **permit** is required to construct, modify, or reconstruct any structure or facility on any beach *seaward* of the building line, or to alter, dig, mine, move, remove, or deposit any substantial amount of beach or other materials, or cause the significant removal of vegetation on any beach seaward of the building line.[255] The law also mandates that DNREC require any reasonable reduction in size or other alteration of any structure proposed to be built seaward of the building line that would eliminate or diminish the amount of encroachment over the building line.[256] A **letter of approval** is required to engage in construction activities *landward* of the building line on any beach, including construction of any structure or the alteration, digging, mining, moving, removing, or depositing of any substantial amount of beach or other materials.[257] The regulations define a "substantial amount" as "any amount, the moving, alteration, or removal of which could significantly increase danger of erosion, storm, damage or flooding."[258] In addition, operation of a mechanized vehicle or machine on any beach owned by the State is unlawful except in designated areas.[259]

DNREC regulations elaborate on the statutory requirements by prohibiting certain actions seaward of the building line.[260] In general, construction of any structure seaward of the building line,[261] modification or expansion of existing structures seaward of the building line,[262] and certain other activities, such as operation of motor vehicles on the beach,[263] are prohibited unless they are subject to a specific exception.[264] Permits may be granted for construction seaward of the building line if certain exceptions are met, including where:

- DNREC has determined that the area of the parcel landward of the building line is inadequate;

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locating the building line based on elevation contour. *Proposed BPA Regulations* at 4.0. The statutory definition, in turn, was modified by statute in 2006. 75 Del. Laws c. 435.

[255] Del. Code, tit. 7, § 6805.

[256] *Id*. § 6805(d).

[257] *Id*. § 6805.

[258] Del. Admin. Code, tit. 7, § 5102, at 1.0.

[259] Del. Code, tit. 7, § 6805.

[260] Del. Admin. Code, tit. 7, § 5102, at 3.0, 4.1.

[261] *Id*. at 3.1.

[262] *Id*. at 3.2. However, DNREC may not prevent any property owner from repairing, modifying, modernizing, updating, or improving their existing structure so long as these actions occur within the existing structure's foot print. Del. Code, tit. 7, § 6805. Reconstruction or restoration of existing structures is also allowed by permit or letter of approval if a structure seaward of the building line is completely destroyed, although it must be located as far to landward as possible. Del. Admin. Code, tit. 7, § 5102, at 2.7, 2.8. Modification or expansion may also be permitted if the intended purpose of the structure so requires, as discussed in the text. *Id*. at 3.2.2.1, citing 3.1.1.4. The proposed regulations would eliminate this "intended purpose" exception for the modification of existing structures, as it would for construction seaward of the building line. *Proposed BPA Regulations* at § 6.1.7.

[263] Del. Admin. Code, tit. 7, § 5102, at 3.3.

[264] *Id*. at 3.1.3.

- the dimensions and location of the structure cannot be modified or redesigned to minimize or eliminate the construction to seaward of the building line; [265] or
- DNREC has determined that the proposed structure or portion thereof must be located seaward of the building line to achieve its intended purpose.[266]

The last of these exceptions, the "intended purpose" exception, potentially is relevant to offshore electricity transmission projects. The regulations provide a list of activities that may require construction seaward of the building line to meet their intended purpose. These include pipelines, docks, piers, wharves, boat ramps, and other harbor structures, as well as other types of structures that have the purpose of protecting the beach or shore, preventing beach erosion, and carrying out the purposes of the Act and the Regulations.[267] Although pipelines are listed, transmission lines are not.

DNREC regulations set forth the requirements to obtain a permit or letter of approval. Most of these requirements are written to address residential development, but some specific provisions are potentially applicable to offshore energy development. These include a requirement that a permit is required to construct any pipeline or other harbor works.[268]

Prior to rendering its decision on any permit or letter of approval, DNREC must make a determination regarding the potential adverse effects of the proposed activity.[269] If a proposed activity has the potential to increase the potential for damage to the beach seaward of the building line, DNREC may require mitigating measures, such as dune construction and

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[265] DNREC has established a four-step process defining its requirements for reduction and alteration of structures proposed on the seaward side of the building line. DNREC, The Four Step Process For Construction on Delaware's Atlantic Ocean and Delaware Bay Shorelines, No. 40-07/96/09/01, *available at* http://www.swc.dnrec.delaware.gov/Shoreline/Documents/4%20Step%20Process.pdf. The proposed regulation would incorporate this process explicitly into the regulations. *Proposed BPA Regulations* at 6.1.2.3 *et seq*.

[266] Del. Admin. Code, tit. 7, § 5102, at 3.1.

[267] *Id*. at 3.1.1.4. In addition, construction seaward of the building line on a parcel subdivided from a larger parcel after 1981 and construction on the subdivided parcel would not have been approved at that time, unless the proposed structure meets the last listed exception above (i.e., required to achieve the intended purpose). *Id*. at 3.2. The draft regulations would have changed these exceptions substantially, allowing a permit if a structure on the proposed parcel would not pose an unacceptable risk to human health or the environment or the beach resource, *and* met the inadequate parcel area and dimensions and locations test, while removing the "intended purpose" exception. *Proposed BPA Regulations* at 6.1.2.1. The draft regulations would also have barred construction seaward of the building line on any parcel purchased after the effective date of the regulations. *Id*. at 7.3.

[268] Del. Admin. Code, tit. 7, § 5102, at 4.4.1.

[269] The existing regulations do not explicitly distinguish between the requirements for letters of approval and permits, but the proposed regulations would do so. *Proposed BPA Regulations* at 5.0 *et seq*. Under the draft proposed regulations, in making its determination on an application for a letter of approval for construction landward of the building line, DNREC would be required to consider the effect of the proposed activity on beach enhancement, preservation, and protection. If the department were to determine that the proposed activity could have a substantial effect, the applicant would be required to obtain a permit instead of a letter of approval. *Id*. at 5.2. Non-structural maintenance, repair, and relocation of existing structures landward of the building line would also require a letter of approval, but investigation of the effects of the proposed activity would not be required. *Id.* at 5.3, 5.4.

maintenance, which must be carried on for the life of the structure or activity.[270] When making permit decisions, DNREC considers not only potential effects on shoreline recession and other forms of damage, but also the feasibility of alternate storm protection measures, average rates of change in nearby areas, and other factors.[271] In deciding to require modification, the Department also must balance potential hardships to the applicant and to the public. It may also establish special permit conditions to prevent increased erosion or to reduce public expenditures for beach protection.[272]

In addition to establishing the permit system, the BPA directs DNREC to prevent and repair damages from erosion on public and private beaches, including by erecting erosion control structures.[273] As noted above, authority to create these structures without a permit is limited to DNREC.[274] While DNREC is exempt from permitting for its erosion control activities, it must nonetheless comply with the applicable substantive standards and guidelines for placement of shore protection structures and facilities.[275] A 1997 study of coastal vulnerability identified hazard zones for beach erosion. The draft proposed regulations would recommend or require supplemental construction standards in delineated beach, erosion/wave, and wave overwash zones.[276]

A civil penalty of between $200 and $5000 may be levied for alteration, movement, or carrying away a substantial amount of beach material or beach improvements or structures (e.g. groins, dikes), and the violation enjoined. Coastal structures and excavations created in violation of the BPA are declared public nuisances and must be removed or refilled at the expense of the responsible party. Finally, any person who violates a permit or engages in prohibited activity or violates any regulation shall, upon conviction, be fined between $200 and $5000 per day of violation and/or imprisoned for up to 2 years.[277]

The BPA is an important consideration for the manner in which offshore renewable energy can be brought to shore in Delaware. First, it is necessary to determine whether a transmission project would be subject to the BPA at all. It is possible that directional drilling could be used to bring transmission lines ashore *under* the beach. In this instance, it is possible that neither the origin nor the terminus of the drilling would be located in the beach zone. Nonetheless, the drilling process itself might qualify as "alteration, digging, or mining" in the beach zone, and a

[270] Del. Admin. Code, tit. 7, § 5102, at 4.7.
[271] *Id*. at 5.3.
[272] *Id*.
[273] Del. Code, tit. 7, §§ 6803, 6804.
[274] Del. Admin. Code, tit. 7, § 5102, at 4.3; Del. Code, tit. 7, § 6804. *See also* State v. Putman, 552 A.2d 1247 at *11 (Del. Super. Ct. 1988) ("The General Assembly established a clear and explicit statutory scheme authorizing action to prevent and repair damage from erosion of the State's beaches. Exclusive authority for such action is vested in the DNREC.").
[275] Del. Admin. Code, tit. 7, § 5102, at 2.3.
[276] *Proposed BPA Regulations* at 8.0 *et seq*.
[277] Del. Code, tit. 7, § 6807.

permit could be required if that drilling affected "any substantial amount of beach" – that is, if it "could significantly increase danger of erosion, storm, [*sic*] damage or flooding." The application of the BPA to transmission projects thus would require a factual determination based on the potential effects of drilling on the beach environment. If no significant increases in risk are associated with such a project, it would appear not to require a permit. However, if transmission lines and facilities cross the beach, are installed by excavation rather than drilling, originate or terminate in the beach zone, or include the construction of structures on the beach, such projects will be subject to the BPA.

The first step in the BPA analysis is to determine whether the project would be prohibited or, alternatively, if DNREC could issue a permit or letter of approval, as appropriate. If construction of a structure is needed seaward of the line, the project would need to meet an exception to the regulatory prohibition on permitting – most likely, the "intended purpose" exception. The current regulatory list of structures for which this exception is available does not include electrical transmission lines, but does include analogous structures such as pipelines.[278] This suggests that the intended purpose exception would apply, but some uncertainty about the applicability of this exception may remain. Assuming that the regulations would not prohibit the permitting of transmission facilities, the next step to consider is how DNREC would review applications and issue permits for these projects (including drilling). To issue a permit, DNREC would be required to make a determination as to the adverse effects of the project. Mitigation measures may be required, depending on these effects, but these measures and other terms and conditions are largely left to DNREC's discretion under the current regulations. Amendment of the regulations, however, could require applicants to include all reasonable mitigation measures to minimize their adverse impacts to the beach and to compensate for damage, limiting DNREC's authority to permit projects unless these measures are included.

d. Subaqueous Lands Act

The Delaware Subaqueous Lands Act of 1986 is intended to protect subaqueous lands from uses that are contrary to the public interest.[279] The SLA defines "subaqueous lands" to include "submerged lands" and "tidelands." Tidelands are the lands that lie between mean high water and mean low water. Submerged lands include lands below mean low tide in tidal waters, lands below ordinary high water on nontidal rivers, lakes, and other types of waters, and specific manmade lakes or ponds designated by DNREC.[280] The statute does not distinguish among

[278] Del. Admin. Code, tit. 7, § 5102, at 3.1.1.4. If the exceptions are redefined, as in the draft proposed regulations, it will be necessary to determine whether the redefinitions could accommodate appropriate transmission-related facilities.
[279] Del. Code, tit. 7, §§ 7201–7216.
[280] *Id*. § 7202.

coastal and marine subaqueous lands, and thus, by its terms, applies out to the three mile limit of state waters.[281]

The SLA empowers DNREC to convey interests in state subaqueous lands and to place reasonable limits on the use and development of private subaqueous lands.[282] The statute grants DNREC exclusive jurisdiction and authority over any project involving ungranted subaqueous lands owned by the State and authorizes it to grant a fee simple or lesser property interest such as a lease or an easement in these lands.[283] However, leases of shellfish grounds are not granted pursuant to the SLA.[284] Owners of private subaqueous lands must obtain a permit from DNREC before making any use of those lands that may contribute to the pollution of public waters, have an adverse impact or destroy aquatic habitats, infringe upon the rights of the public or of other owners, or connect to public subaqueous lands.[285] The regulations explicitly acknowledge the applicability of the public trust doctrine to all navigable waters: any applicant asserting private ownership of subaqueous lands must demonstrate ownership.[286]

Public Trust Doctrine

The public trust doctrine is based on the concept that the public possesses "inviolable rights in certain natural resources."[287] The doctrine has been recognized by the U.S. Supreme Court and has variations among states that recognize the doctrine, including Delaware.[288] In general, the state owns the lands beneath navigable waters in trust for its citizens. In addition to prohibiting the state from conveying these submerged lands in conflict with the trust, the courts have interpreted the doctrine to protect numerous uses of the water, such as fishing, swimming and other forms of recreation as well as navigation and other commercial uses.[289] The boundaries of public and private subaqueous lands differ in Delaware as compared to other mid-Atlantic states. In Delaware public ownership and the public trust doctrine apply to their fullest extent to subaqueous lands below the low-water mark, while private landowners own riparian and littoral lands down to the low-water mark. However, even this private ownership remains subject to public rights to fishing and navigation on the land between the high- and low-water marks.[290]

[281] *Id*. § 7202(d). The reference to "tidal waters" does suggest that the waters need to be "affected by the tide." *See* Del. Admin. Code, tit. 7, §7504, at 1.0 (Definitions). This should cover marine waters out to 3 miles.
[282] Del. Code, tit. 7, § 7201.
[283] *Id*. §§ 7203(a), 7206. Section 7203(a) would allow the Department to convey "a fee simple *of* lesser interest," while section 7206 states "fee simple *or* lesser interest" (emphasis added). It is likely that the former is a product of scrivener's error.
[284] *Id*. § 7206.
[285] *Id*. § 7203(b) ; Del. Admin. Code, tit. 7, § 7504, at 2.3.
[286] Del. Admin. Code, tit. 7, § 7504, at 2.2.2.3.
[287] Richard Lazarus, *Changing Conceptions of Property and Sovereignty in Natural Resources: Questioning the Public Trust Doctrine*, 71 IOWA L. REV. 631, 632 (1986).
[288] Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471, 475 (1969); Robin Kundis Craig, *A Comparative Guide to the Eastern Public Trust Doctrines: Classifications of States, Property Rights, and State Summaries*, 16 PENN ST. ENVTL. L. REV. 1, 4–5 (2007).
[289] DAVID H. GETCHES, WATER LAW IN A NUTSHELL, 242–43 (2009).
[290] Craig, *supra* note 288; Phillips v. State ex rel. Dep't of Nat. Res. & Envtl. Control, 449 A.2d 250 (Del. 1982); Groves v. Sec'y, DNREC, No. 92A-10-003, 1994 WL 89804, at *6 (Del. Super. Ct., Feb. 8, 1994).

Delaware courts have found that the state has authority to protect the public interest beyond navigation and fishing.[291] The courts have also held that the Delaware public trust doctrine includes the state's police powers to regulate, "including the protection of life, health, comfort, and property or the promotion of public order, morals, safety, and welfare."[292]

The SLA includes some special exemptions.[293] The Act does not apply to any work performed by any state, county, or municipal government or conservation district, or their contractors, when that work occurs in nontidal submerged lands in the Delaware Atlantic Coastal Plain Province with a contributing drainage area of less than 800 acres.[294] While a variety of other exemptions apply, as for archaeological work and wastewater treatment ponds, these exemptions do not appear to be relevant to offshore renewable energy projects.[295]

i. Requirement for Permit, Lease, or Approval Letter

For projects that are not exempt from the statute, it is unlawful to deposit material upon, extract material from, or construct, modify, repair, reconstruct or modify any structure or facility on subaqueous lands without first obtaining a permit, lease, or letter of approval from DNREC.[296] The Department can include "reasonable conditions" in granting this approval. In addition, if it determines that approval may result in the loss of a substantial resource, DNREC may require the permittee to undertake measures to offset or mitigate the loss.[297] DNREC regulations provide further guidance on types of projects requiring a permit on private subaqueous lands and requiring approval on public subaqueous lands, as well as providing for statewide approvals of certain activities, types of projects that are prohibited, and exemptions from the approval requirement.[298]

Owners of private subaqueous lands must obtain a permit from DNREC prior to engaging in activities that may contribute to pollution of public waters, adversely affect aquatic habitats, infringe on the rights of the public (including those rights protected under the public trust doctrine) or other property owners, or connect to public subaqueous lands.[299] A permit is also required to deposit material on, remove, or extract materials from, or construct, modify, repair,

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[291] State ex. rel. Buckson v. Pa. R.R. Co., 228 A.2d 587, 603-05 (Del. Super. Ct. 1967). At the same time, except as prohibited by the federal navigation servitude, the state legislature "may impair or take away these public rights [navigation and fishing] for public purposes." *Bailey v. Philadelphia, Wilmington & Baltimore R.R. Co*., 4 Del. (4 Harr.) 389, 1846 WL 726, at *1 (Del. 1846).

[292] Groves v. Sec'y, Dep't of Natural Res. & Envtl. Control*, 1994 WL 89804,* at *6 (Del. Super. Ct. 1994) ; Robin Kundis Craig, *Adapting to Climate Change: The Potential Role of State Common-Law Public Trust Doctrines,* 34 VT. L. REV. 781, n.100 (2010).

[293] Del. Code, tit. 7, § 7217.

[294] *Id*. § 7217(a).

[295] *See id*. § 7217.

[296] *Id*. § 7205.

[297] *Id*.

[298] Del. Admin. Code, tit. 7, § 7504, at 2.3 *et seq*.

[299] *Id*. at 2.3.1.

reconstruct any structure upon or over private subaqueous lands.[300] The regulations list specific activities in, on, over, or under private subaqueous lands that require a permit or letter of authorization. These include, but are not limited to:

- Dredging, filling, excavating, or extracting of materials;
- Excavation of land which makes connection to subaqueous lands;
- The laying of any pipeline, electric transmission line, or other utility structure in, on, over, or under the beds of private subaqueous lands; and
- Repair and replacement of existing serviceable structures.[301]

A lease, permit, or letter of authorization from the Department is required to undertake activities on public subaqueous lands. The list of activities requiring approval includes but is not limited to:

- construction or use of any structure on, in, under, or over public subaqueous lands;
- dredging, filling, excavating, or extracting of materials;
- continuous anchoring of a commercial vessel used in commercial activity on or over public subaqueous lands for 30 or more days;
- the laying of any pipeline, electric transmission line, or telephone line in, on, over or under the beds of public subaqueous lands; and
- repair and replacement of existing serviceable structures over private subaqueous lands (letter of approval).[302]

While the regulations specify which types of activities require only a letter of approval, they do not specify whether a lease or permit is required for other activities. In practice, DNREC requires a permit or a lease for different types of activities; a 20-year renewable lease is required for the placement of any structure (including pipelines) or any fill in underwater lands channelward of the mean low water line.[303] DNREC may also adopt statewide activity approvals for specified activities, with limiting dimensions and criteria, which are considered to have minimal impacts "on subaqueous lands, water quality, habitats, etc."[304] Qualification of a project for a statewide activity approval may require no review or will invoke an abbreviated review process for a permit or approval decision by the Department.[305]

[300] *Id*. at 2.3.2.
[301] *Id*. at 2.3.3.
[302] *Id.* at 2.4.2.
[303] DNREC, *Wetlands and Subaqueous Lands: Permitting Information*, http://www.wr.dnrec.delaware.gov/Information/Permits/Pages/WetlandsandSubaqueousLandsPermittingInfo.aspx.
[304] Del. Admin. Code, tit. 7, § 7504, at 2.5.
[305] *Id*. at 2.5.

The list of activities requiring approval, as well as the list of prohibited projects,[306] are not exclusive. That is, the absence of a particular use from the list of projects requiring approval does not mean that approval is not required; similarly, the absence of a project type from the list of prohibited projects does not mean that it will be approved.[307] The department may waive any provision of its SLA regulations, among other circumstances, where the authority of DNREC under the SLA overlaps with another statute, including laws on shellfish grounds, beach preservation, and wetlands, provided that an equal environmental impact review and regulation of the activity would be provided by either applicable statute and waiver of the regulations would not be contrary to the purposes of the SLA.[308]

The SLA and its regulations also set forth the process whereby DNREC approval may be obtained. Each applicant must file a request with DNREC stating the type of approval desired, showing the location of the areas, and containing specifications for proposed construction. The Department has issued application forms for this purpose, which applicants must use.[309] There is an application appendix for "utility crossings," but none specifically tailored to transmission cables through marine waters.[310] DNREC can require additional information, including an environmental assessment, if it determines that the proposed use or activity may have a substantial adverse affect upon the environment. Public notice is required for any application, including acceptance of objections.[311] A public hearing is required for a grant or lease longer than 20 years, if DNREC determines that a hearing would be in the public interest, or if a written, meritorious objection is received after posting of the public notice.[312] DNREC decisions may be appealed to the Environmental Appeals Board, except that a decision to deny a permit on any matter involving state-owned subaqueous lands cannot be appealed.[313]

The SLA allows DNREC to assess costs and fees to applicants.[314] The regulations provide that every application, except those from a state or federal government agency or a political subdivision of Delaware, must be accompanied by an application fee as established by the General Assembly. In addition, the Assembly establishes lease fees for all commercial and noncommercial projects over public subaqueous lands. The lease and fee requirements apply to all activities and structures, and persist even after the term of the lease until the structure is removed or a new lease is issued. Costs of hearings are also charged to the applicant.[315]

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[306] *Id*. at 2.6.
[307] *Id*. at 2.7.
[308] *Id*. at 2.9.
[309] *Id*. at 3.1.1.
[310] Wetlands and Subaqueous Lands Section Application Form, Appendix E: Utility Crossings, *available at* http://www.dnrec.state.de.us/water2000/Sections/Wetlands/Originals/APPE.DOC.
[311] Del. Code, tit. 7, §, 7209.
[312] *Id.* § 7208.
[313] *Id.* § 7210.
[314] *Id.* § 7211.
[315] Del. Admin. Code, tit. 7, § 7504, at 5.0.

Violations of the SLA may result in a civil penalty of between $1000 and $10,000 per day, as well as criminal penalties from $50 to $500. DNREC may also revoke any lease or permit for failure to comply with terms and conditions. Upon expiration or cancellation, the Department may also direct a lessee to remove all structures and equipment from the leased area within 180 days.[316]

ii. Review of SLA Applications

DNREC reviews applications for permits, leases, and letters of approval based on performance specifications, standards, and other criteria relevant to the type of activity proposed.[317] Applications may be denied if the proposed activity could cause harm to the environment, either singly or in combination with other activities or existing conditions, which cannot be mitigated adequately.[318] Erosion control structures and water-dependent activities are reviewed on the basis of need for the type of structure proposed.[319] The public benefits of all proposed activities and structures are evaluated according to criteria that the Department may use to determine whether to approve an application.[320] Specifically, DNREC must take into account:

- public use impacts,
- environmental considerations, and
- other considerations related to the proposed activity.

Public use impacts include, but are not limited to, the economic and other value of retaining interest in subaqueous lands; the value of conveying an interest in those lands; the potential effects on commerce, navigation, recreation, aesthetic enjoyment, natural resources, and other uses of subaqueous lands; the permanence of the proposed activity; the extent to which the applicant's objectives can be avoided, minimized, and mitigated; and the extent to which the public at large would benefit or suffer detriment from the activity or project.[321]

Environmental considerations include impairment of water quality that may reasonably be expected to cause violation of the state water quality standards (violation of criteria or degradation of existing uses), effects on shellfishing, finfishing, recreation, and existing or designated water uses, harm to aquatic or tidal flora and fauna or their habitat, permanent or temporary impairment of air quality, including noise, and the extent to which natural hydrology and sediment transport will be affected.[322] *DNREC may require an environmental impact*

[316] *Id.* at 2.10.
[317] *Id.* at 4.1.
[318] *Id.* at 4.2.
[319] *Id.* at 4.3.
[320] *Id.* at 4.5.
[321] *Id.* at 4.6.
[322] *Id.* at 4.7.

statement for major commercial activities and for activities which may have a substantial environmental impact.[323] This potential requirement can provide a basis for detailed evaluation of new or unusual proposals such as those that may arise in connection with offshore energy development. DNREC is also directed to consider whether the activity could have the potential to cause any adverse effects on the environment when taken in conjunction with existing and other proposed activities; the Department may require the applicant to determine the cumulative and secondary impacts to enable this assessment.[324] If DNREC determines that significant impacts could be offset or mitigated, it may include mitigation measures as a condition to the permit or lease.[325]

Other considerations include:

- the degree to which the project represents an encroachment on or interferes with public lands, waterways, or private interests;
- the degree to which it incorporates sound engineering principles and appropriate materials;
- the degree to which it fits in with the surrounding structures, facilities, and uses of the subaqueous lands and uplands;
- whether it complies with surface water quality standards during construction and subsequent operation or maintenance; and
- the degree to which it may adversely affect shellfish beds or finfish activity in the area.[326]

The regulations set forth requirements that all structures must meet for approval. Structures must be constructed to allow for continued growth and nourishment of aquatic and wetland vegetation under or near the structure wherever possible, and allow for adequate water circulation and water quality to support plants and animals.[327] They must also be constructed, installed, and used in a manner that minimizes pollution and harm to plants, fish and wildlife.[328] They must use the best available materials and technologies and must be constructed in a manner that will prevent or minimize leaching or runoff of harmful chemicals or other substances that may cause pollution or harm to aquatic plants and wildlife.[329] And finally, they may not interfere with navigation, public, or other rights.[330]

Specific design requirements also apply to certain proposed activities, including boat docking facilities, shoreline erosion control measures, activities regarding dredging, filling, excavating or

[323] *Id.* at 4.7.2.
[324] *Id.* at 4.7.3.
[325] *Id.* at 4.7.4.
[326] *Id.* at 4.7.5.
[327] *Id.* at 4.7.8.1.
[328] *Id.* at 4.7.8.2.
[329] *Id.* at 4.7.8.3.
[330] *Id.* at 4.7.8.4.

extracting materials, creation of lands, and installation and use of pipelines and other conduits.[331] Most of these categories appear irrelevant in the offshore renewable energy context. However, electrical transmission projects could be subject to existing regulatory limitations on

- dredging,[332] and
- installation of pipelines and conduits.[333]

Dredge proposals must be designed to meet certain objectives, including compliance with the "Inland Bays Dredging Study," maintaining the navigability of channels, and maintaining or improving the environmental quality of the state's water resources, subaqueous lands, and wetlands.[334] In considering applications, DNREC must consider additional factors, including environmental impacts at and surrounding the dredging site; environmental effects of the disposal of the dredged materials; economic and noneconomic benefits of the project compared with its costs; and consistence of the project with regional growth and local land use plans.[335] DNREC may also require applicants to submit information on water quality impacts to ensure compliance with state water quality standards, and it must specifically consider a list of enumerated water quality concerns when evaluating these projects.[336] The regulations also prohibit certain forms of dredging, including but not limited to the dredging of biologically productive areas, such as shellfish beds, if dredging will have a significant or lasting impact on biological productivity.[337] Finally, removal of material from public subaqueous lands is prohibited without approval and payment of a fee for the amount of material to be removed.[338]

The specific provisions governing pipelines and other conduits apply to a variety of types of pipelines, specifically including lines for the transmission of electricity.[339] The regulations specific to pipelines and conduits are sparse, but specify that the construction methods and materials for pipelines must at minimum be in accordance with the applicable state and federal regulations governing the installation and operation of pipelines, and must conform to generally accepted engineering practices.[340]

The SLA is likely to be a crucial component of Delaware's regulation of offshore renewable energy projects. There is a possibility that some project components could be exempt from the

[331] *Id.* at 4.9–4.13.
[332] *Id.* at 4.11."Dredging" is a defined term that means "the removal or displacement, by artificial activities, of mud, soil, sand, gravel, shells or other material from subaqueous lands." *Id.* at 1.0. Jet plow actions appear to fall under this definition to the extent they displace the seabed.
[333] *Id.* at 4.13.
[334] *Id.* at 4.11.1.
[335] *Id.* at 4.11.2.
[336] *Id.* at 4.11.3.
[337] *Id.* at 4.11.4.
[338] *Id.*, at 4.11.5.
[339] *Id.* at 4.13.1.2.
[340] *Id.* at 4.13.

Act to the extent they are carried out by governmental actors on the coastal plain; however, the applicability of this exemption is questionable in offshore areas. As a result, offshore generation and transmission projects likely will require approval from DNREC prior to construction. DNREC leasing will require projects to comply with both design requirements for pipelines and consideration of general public use and environmental considerations. For large-scale projects, an environmental impact assessment, including consideration of cumulative and secondary impacts, is likely to be required. This assessment process could affect siting of transmission corridors or generating structures and would require minimization of impacts on shellfishing and finfishing, as well as minimization of water pollution and other environmental impacts. Mitigation may also be required. If approved, an annual lease fee would be assessed which would be in addition to the application fee needed for DNREC to determine whether to grant a permit.

The SLA does not contain explicit requirements for advance planning or designation of areas in advance for leasing, permitting, or withholding from leasing or permitting. Nevertheless, the existence of discretion and the requirements for environmental review implicitly suggest that this can occur. For example, DNREC has stated that wind development, including development of a wind test site, will not be approved on the state's submerged lands in Delaware Bay. This position is not expressed in law or regulation, but represents the way in which DNREC interprets its conservation responsibilities. DNREC cites the importance of and uncertainties about the "benthic, avian, fisheries, and marine trade" issues within the Bay as a basis for this determination.[341]

e. Wetlands Act

The Delaware Wetlands Act (WA)[342] was enacted to preserve and protect productive public and private wetlands against despoliation and destruction.[343] The Act accomplishes this goal by establishing a permit system administered by DNREC for activities in protected wetlands..[344] "Wetlands" are defined in the Act to include lands subject to tidal action between the mean low water line and two feet above the mean high water line upon which some or all of a suite of listed plant species are capable of growing, as well as areas of 400 contiguous acres of nontidal wetlands not used for agriculture in 1973.[345] Where DNREC has mapped the wetlands in an area, the map governs the location of wetlands.[346]

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[341] Email from DNREC Secretary Collin O'Mara to Dr. Jeremy Firestone, University of Delaware (August 12, 2010) (on file with author).
[342] Del. Code, tit. 7, §§ 6601–6620.
[343] *Id.* § 6602.
[344] *Id.* § 6604.
[345] *Id.* § 6603. Tidal areas with standing freshwater are also within the definition.
[346] *Id.* § 6607.

Under the WA, "any activity in the wetlands" requires a permit unless explicitly exempted.[347] Certain activities are exempted, but these are not related to offshore energy development.[348] For non-exempted activities, DNREC regulations establish restrictive conditions on the issuance of permits. No permit will be issued to utilize wetlands for any activity unless it requires water access or water for its central purpose *and* has no alternative on adjoining non-wetland property owned by the applicant.[349] Any expansion of preexisting uses requires a permit.[350]

To obtain a permit, applicants must apply to DNREC. Two procedures are available. Type I permits can be obtained through an abbreviated procedure for projects less than 1 acre involving maintenance work; other applicants must follow the full procedure.[351] Type II, the full procedure, specifically is required for building structures and for constructing and maintaining electrical transmission lines that require artificially solidified bases or for the construction of permanent access roads or other fixed works.[352] WA permits require applicants to show evidence of county or municipal zoning approval[353] as well as an environmental summary that includes: reasons why the structures cannot feasibly be located on adjacent non-wetland property; temporary and permanent changes that would result from the project; alternatives to the proposed action; mitigation measures; and unavoidable impacts.[354] WA and SLA permitting are handled together with a common application where approval under both laws is needed.

After an application is submitted, public notice is required and a public hearing may be held.[355] The WA and DNREC regulations establish the factors that DNREC must consider when reviewing a permit application. These include environmental effects (including the value of tidal ebb and flow and habitat value), aesthetic effects, the number and type of public and private supporting facilities required and their impacts, the effects on neighboring land uses, any applicable comprehensive plans, and economic impact.[356] As authorized by the WA,[357] DNREC requires that some approved permittees post a secured bond sufficient in amount to hire a contractor to complete any conditions imposed in a permit or restore the project area to its original condition in the event of a failure to comply with the permit. A performance bond is required for any project that costs more than $10,000.[358]

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[347] *Id.* § 6604.
[348] *Id.* § 6606.
[349] Del. Admin. Code, tit. 7, § 7502, at 7.0.
[350] Del. Code, tit. 7, § 6605.
[351] Del. Admin. Code, tit. 7, § 7502, at 8.0.
[352] *Id.* at 8.4.
[353] Del. Code, tit. 7, § 6604.
[354] Del. Admin. Code, tit. 7, § 7502, at 8.5.8.
[355] Del. Code, tit. 7, §§ 6608-6609.
[356] *Id.* § 6604(b).
[357] *Id.* § 6604.
[358] Del. Admin. Code, tit. 7, § 7502, at 10.0.

DNREC permit decisions can be appealed to the Environmental Appeals Board, as under the SLA.[359] Environmental Appeals Board decisions can be appealed to state court.[360] If the court determines that the permit decision constitutes a taking without just compensation, DNREC may negotiate with the landowner to modify the decision or acquire the lands at issue.[361] Violations of the WA may result in fines and the costs of restoration.

The WA is potentially applicable to offshore renewable energy projects to the extent that transmission projects require work in the wetlands area. The permitting requirements of the WA could potentially be avoided by routing projects outside of wetlands areas (such as directional drilling that avoids activities in the wetlands). A permit may be available, however, in the event that no other feasible alternative exists that would avoid the wetlands. Transmission of energy from offshore requires water access at some point, and therefore DNREC may be able to issue a permit if no feasible alternative exists that would not require development in the wetlands. In such a case, the applicant would be required to develop and submit an environmental assessment similar to that required for a subaqueous lands permit.

f. Public Lands

Delaware law includes provisions governing the use of public lands and open space. DNREC is responsible for the management of public lands in the state and supervises and controls state parks, nature preserves, wildlife refuges, and other public lands (including submerged lands) in Delaware.[362] DNREC has established few regulations that address uses of state lands outside of state parks and the submerged lands regulations discussed previously. As a result, there exist few detailed provisions applicable to the use of state parks,[363] wildlife refuges,[364] nature preserves, and other public lands for purposes related to offshore renewable energy production. This section therefore focuses on statutory provisions authorizing and limiting the use of public lands for renewable energy generation and transmission and on public programs limiting the development of private land.

[359] Del. Code, tit. 7, § 6610.
[360] *Id.* § 6612.
[361] *Id.* § 6613.
[362] *Id.* § 4504(a).
[363] Authorization is required in order to use state park lands for any commercial activity, although this limitation is directed at concessionaires. Del. Admin. Code, tit. 7, § 9201, at 22.3.
[364] Del. Code, tit. 7, § 7306. The intertidal region of the Delaware coast between the St. Jones River and the Smyrna River adjoining the Delaware River is a wildlife refuge, provided that adjoining landowners agree. However, DNREC has issued no regulations governing such refuges, and this designation does not appear to limit uses of the area beyond those restrictions found elsewhere in Delaware law.

i. Leasing of Public Lands

Delaware law gives DNREC the authority, together with the Governor, to lease any part of the public lands under its supervision subject to "any conditions and for such rentals" as it deems advisable for the public good, albeit with several exceptions (discussed below).[365] This provision stands alongside the SLA, which, as noted previously, establishes a system for the permitting and leasing of public subaqueous lands for commercial projects, including offshore renewable energy generation and transmission. The public lands statute does not refer directly to the SLA, nor has DNREC issued regulations governing the process for leasing public lands. Regulatory clarification or guidance for the process of obtaining leases on public lands could prove beneficial for offshore renewable energy project planning, particularly for transmission in uplands areas.

ii. Shellfish Grounds

The leasing of shellfish grounds is addressed specifically in several statutes. The shellfishing law authorizes DNREC to lease shellfish grounds to be used for protecting, planting, and harvesting shellfish, with some exceptions, including grounds within 3000 feet of the natural shoreline and natural oyster beds.[366] Delaware's general public lands law also prohibits DNREC from leasing any submerged lands used for an oyster plantation, bed, or bottom, or any land the use of which would affect adjacent oyster operations.[367] Further, as noted previously, shellfish grounds are not available for leasing under the SLA. As a result, public submerged lands leased for shellfishing are unlikely to be available for use in renewable energy projects.

iii. State Parks

DNREC cannot convey, lease, or extend or renew leases of state park lands absent specific approval from DNREC.[368] The statute specific to state parks elaborates: DNREC is authorized to grant, with the written approval of the Cabinet Committee on State Planning Issues, easements

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[365] *Id.* § 4510. The law explicitly provides DNREC with authority to grant leases for specific uses, most notably including exclusive rights to mine, explore for, operate, and produce oil and gas from public lands, including laying pipelines, telephone and telegraph lines, and building associated structures such as tanks and power stations. *Id.* § 4511. The latter provision appears to be limited to mining and oil and gas purposes and therefore likely does not apply to electricity generation or transmission.

[366] *Id.* § 1905. Grounds within the confines of Indian River, Indian River Bay or Rehoboth Bay are also off limits until approved by resolution of the General Assembly and completion of a shellfishing study. This restriction dates to the 1970s and the conditions for these leases appear to have been satisfied. *See* DNREC, *Shellfish Growing Waters*, http://www.wr.dnrec.delaware.gov/Services/OtherServices/Pages/GrowingWaters.aspx.

[367] Del. Code, tit. 7, § 4513. Other laws prohibit DNREC from leasing natural shellfish beds within 1000 feet of the mean high water line or natural oyster beds, except for scientific use. *Id.* § 1905. The statute is not clear, however, as to whether this restriction applies only to leases for shellfishing or to all leases.

[368] *Id.* § 4517(b). Although tautological, this provision implicitly calls attention to other provisions of law that constrain DNREC's discretion.

for either private or public purpose over or under any public lands which it administers for the purpose of "transmission lines," including, but not limited to, electrical transmission lines.[369] The term of the easement and the amount of any fee charged are determined by DNREC with approval of the Cabinet Committee.[370] In addition, state park lands, open space, and other areas acquired primarily for recreational use cannot be rezoned or their use changed in a way that requires a variance without prior notice to the elected members of the General Assembly in the affected districts.[371]

State park lands that were acquired or improved with federal Land and Water Conservation Fund (LWCF) monies have further limitations on their leasing for wind facility or transmission corridor use. Federal law allows the conversion of LWCF lands to other than public recreational use only if the conversion is in accordance with the approved State Comprehensive Outdoor Recreation Plan, and the state will substitute other recreational properties of at least the same fair market value and reasonably equivalent usefulness and location, with approval of the Secretary of the Interior (the National Park Service).[372] However, use of land for a transmission corridor (or if buried lines) may not impair the recreational use. Temporary occupation of LWCF lands in a manner that does not impair their recreational use may be allowed with approval of the Secretary of the Interior.

iv. Nature Preserves

The Delaware Assembly also has created a Natural Areas Preservation System in which public or private lands can be dedicated as nature preserves.[373] A dedication means the transfer of a property estate, interest, or right to the State.[374] Articles of dedication must include terms restricting the use of the land which adequately provide for its preservation and protection against medication or encroachment resulting from occupation, development, or other use which would destroy its natural or aesthetic conditions for one or more of the listed uses or purposes for nature preserves listed in the statute.[375] Articles of dedication also may contain provisions for the management, custody, and transfer of land, provisions defining the rights of the owner or operating agency and DNREC, and other provisions necessary and advisable to carry out the

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[369] *Id.* § 4701(a)(9).
[370] *Id.*
[371] *Id.* §§ 4521, 4706, 7510.
[372] 16 U.S.C. §§ 460*l*-8(f)(3). Courts have questioned whether conversion for a golf course, or a private marina could be properly approved under the LWCF. *See* Friends of the Shawangunks v. Clark, 754 F. 2d 446 (2d Cir. 1985); City of Jersey City v. Hodel, 714 F. Supp. 126 (D. N.J. 1989).
[373] Del. Code, tit. 7, § 7301 *et seq*.
[374] *Id.* § 7302.
[375] *Id.* § 7306(c). The listed uses and purposes of nature preserves include: scientific research; teaching; habitat for plant and animal species and communities; reservoirs of natural materials; places of natural interest and beauty; living illustration of natural heritage; promotion of understanding of the value of preserved areas; and preservation and protection against modification or encroachment. *Id.* § 7302.

uses and purposes of the dedication.[376] Once dedicated, these preserves are held in trust for the public and must be managed and protected for that use; they cannot be taken for any other use except another public use after a finding of an imperative and unavoidable public necessity and with the approval of both the Governor and the Assembly.[377] Before DNREC makes a finding of the existence of an imperative and unavoidable public necessity, or grants or disposes of any estate, interest or right in a nature preserve, it must give notice of the proposed action and provide an opportunity for public hearing.[378]

The importance of nature preserves to offshore renewable energy transmission facilities is likely to depend on the siting of those facilities (i.e., whether these facilities will or are intended to pass through a dedicated preserve) and on the specific terms of the article of dedication. As a result, site-specific consideration would be required to determine the impact of these provisions on renewable energy projects.

v. Minerals in Submerged Lands

Delaware law provides the Secretary of DNREC and the Governor "exclusive jurisdiction to lease for mineral exploration and exploitation all ungranted submerged tidelands"[379] owned by the State, except that the Secretary cannot lease lands administered by DNREC. This authority applies for disposition of oil, gas, sulphur and other minerals. The State may not permit any non-temporary interference "with the surface of the Atlantic shore," but it may grant easements as necessary to permit the extraction and transportation of mined material.[380] These leases provide an exclusive right to drill for and produce mineral deposits,[381] but reserve to the State the right to permit reasonable nonconflicting uses so long as such uses do not unreasonably impact or interfere with operations of the lessee and the permittee indemnify the lessee for damage caused by the nonconflicting use.[382] While it is reasonable to believe that the presence of an offshore wind generation facility could limit the use of the surrounding area for mineral production, no leases have been granted pursuant to this statute. Mineral leases on submerged lands therefore are unlikely to substantially affect offshore renewable energy projects in Delaware waters.

Although these sections of the code expressly deal with mineral exploration and exploitation, several provisions may have broader applicability. DNREC "upon application by any person,

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[376] *Id.* § 7306(d).
[377] *Id.* § 7308.
[378] *Id.* § 7309.
[379] As "submerged lands" and "tidelands" are mutually exclusive by definition and because the statute elsewhere referes to "tide and submerged lands", Del. Code, tit. 7, § 6107(a), we presume that the jurisdiction applies on submerged lands *or* tidelands. In addition, the statute allows the Secretary to delegate leasing authority to the State Geologist. To date, this has not occurred, and DNREC retains authority.
[380] Del. Code, tit. 7, § 6102.
[381] *Id.* § 6111.
[382] *Id.* § 6122.

may permit geological, geophysical and seismic surveys, including the taking of cores and other samples" on the tidal and submerged lands.[383] Such operations are conducted under a permit valid for not more than two years, but renewable.[384] These provisions may be applicable to testing and other operations relevant to planning and siting for submerged transmission cables in state waters, particularly if such assessments are needed to address boring and directional drilling.[385]

vi. Coastal Land and Estuarine Protection

Specific programs also apply specifically to coastal lands. The federal CZMA has given rise to additional tools that Delaware has used to protect coastal lands. The National Estuarine Research Reserve (NERR) system was created to protect coastal estuaries to allow long-term research, water-quality monitoring, education, and coastal stewardship. NERRs are a state-federal partnership between NOAA, which provides funding and guidance for land acquisition and management, and state agencies or other entities, which manage the reserves. An estuary is eligible for inclusion in the NERR system only if state law provides long-term protection for reserve resources to ensure a stable environment for research and the state complies with other NOAA regulations.[386] These regulations allow multiple uses to the extent permitted by the applicable management plan provided that any uses must be consistent with the mission and goals of the NERR system.[387] Funding for land acquisition in the NERR system and other coastal areas is provided in part by the Coastal and Estuarine Land Conservation Program (CELCP), created by CZMA revision in 2002.[388] CELCP is a competitive grant program that requires states to develop a coastal and estuarine land conservation plan and a process for identifying, ranking, and nominating qualified projects.[389]

Delaware participates in both the NERR and CELCP programs, and both are managed by DNREC. The NERR program is governed by a management plan, last updated for the 2004-2009 period.[390] The state NERR includes two sites on Upper Blackbird Creek and Lower St. Jones River. The stewardship component of the plan calls for both protection of existing resources and acquisition or protection of additional land within the core and buffer areas of the state NERR areas. While the plan provides for multiple uses, any activity conducted on state-owned land or private land under a cooperative agreement must adhere to a conservation plan,

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[383] *Id.* § 6103.
[384] *Id.* § 6104.
[385] Coordination with relevant provisions of the Submerged Lands Act will be needed.
[386] 16 U.S.C. § 1461.
[387] 15 C.F.R. § 921.1.
[388] 16 U.S.C. § 1456d.
[389] NOAA, Coastal and Estuarine Land Conservation Program: Final Guidelines (2003).
[390] Delaware National Estuarine Research Reserve, Delaware National Estuarine Research Reserve Management Plan 2004-2009, Document No. 40-07-05/05/03/02, *available at* http://www.nerrs.noaa.gov/Doc/PDF/Reserve/DEL_MgmtPlan.pdf.

and certain land use activities may be restricted. The management plan does not directly address electrical transmission. In addition to protections offered by the Wetlands Act and through conservation easements with private owners (and direct state ownership), some Delaware NERR lands are protected by the Delaware Farmland Preservation Program, discussed below.[391]

The Delaware CELCP plan was completed and submitted to NOAA in 2007 by Delaware Coastal Programs, which includes both the Coastal Management Program and the NERR program. The plan identifies the NERR watershed and lands on the coastal strip as its prioritized acquisition targets.[392] Since the plan was completed, the state has succeeded in obtaining funding for land acquisition through the CECLP program.

Lands acquired or protected through the NERR or CECLP programs may not be available or may require special attention, such as consulting the terms of a specific management plan or conservation easement, before they can be used for offshore energy transmission projects. However, the limited geographic extent of these programs at this time likely limits their impacts on proposed projects in the near future.

vii. Publicly Held Easements on Privately Owned Land

State law authorizes the purchase of conservation easements to limit land uses on privately held land.[393] Holders of these easements may include governmental bodies or charitable groups.[394] As noted above, private landowners also can dedicate their lands as nature preserves; the dedication takes the form of a property right and may include limitations on the use of the land.[395]

Landowners may also agree to limitations on development in the absence of a permanent property interest. Most notable is the Delaware Farmland Preservation Program (DFPP), a voluntary program administered by the Delaware Department of Agriculture (DDA).[396] Under the DFPP, owners may enroll their agricultural and forest lands in an Agricultural Preservation District and thereby enter into a restrictive covenant that bars development of the land for at least 10 years in exchange for tax and other benefits.[397] The covenant runs with the land (i.e., is binding on future owners) and limits activities to agricultural and related uses.[398] Easements,

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[391] *Id*. at 84 *et seq*. See discussion *infra* Part IV.f.vii.
[392] State of Delaware, Coastal and Estuarine Land Conservation Program Plan (2007), *available at* http://www.swc.dnrec.delaware.gov/SiteCollectionDocuments/Soil/Draft%20CELCP%20Plan%20v1-2%20July%202007.pdf.
[393] Del. Code, tit. 7, § 6901 *et seq*.
[394] *Id.* § 6901.
[395] *Id.* § 7302.
[396] *Id.* § 901 *et seq*.
[397] *Id.* §§ 907–911.
[398] *Id.* § 909.

licenses, and other property interests for utilities are defined as "related" uses provided that they are limited to the area necessary, the affected area is located to minimize impact on farming operations, no unrelated advertising or non-utility activity are allowed; and the owner has obtained written permission from the Delaware Agricultural Lands Preservation Foundation, which establishes and manages the districts.[399] According to DDA, 129,163 acres are currently enrolled in the Program, of which 64,830 have been permanently protected via conservation easement.[400]

g. Land Use Regulation

Delaware has delegated substantial authority over land use to counties and municipalities, enabling local governments to create comprehensive plans and adopt zoning requirements. Onshore facilities associated with offshore energy production and transmission will need to comply with these planning and zoning requirements.

In the Quality of Life Act of 1988 (QLA), Delaware required each of its three counties to create a comprehensive plan to guide and control future development and growth[401] in unincorporated areas.[402] The counties also were required to implement these plans by adopting appropriate land development regulations.[403] Each county is required to designate a local planning agency to prepare its plan, review proposed land development regulations, make recommendations about the consistency of proposals with the comprehensive plan, and perform other duties.[404] The QLA directs the planning agency to include 10 specific elements in the comprehensive plan, including, but not limited to:

- a future land use plan designating proposed future general distribution, location and extent of different land uses, and standards for the control and distribution of population density and building and structure density;
- a conservation element that provides for the conservation, use and protection of natural resources and includes a natural area classification and identification of areas most suited for agricultural, silvicultural, and watershed protection uses;
- an intergovernmental coordination element demonstrating the effects of the plan on municipalities, other counties, and the state; and

[399] *Id*.
[400] DDA, Farmland Preservation Program, http://dda.delaware.gov/aglands/lndpres.shtml (last visited June 15, 2011).
[401] Del. Code, tit. 9, §§ 2651, 4951, 6951.
[402] *Id.* §§ 2654, 4954, 6954.
[403] *Id.* §§ 2653, 4953, 6953.
[404] *Id.* §§ 2655, 4955, 6955.

- an economic development element setting out principles and guidelines for commercial and industrial development.[405]

In addition to the 10 mandatory elements, plans may also include optional elements peculiar to and necessary for the area and recommended by the planning agency.[406] The comprehensive plan also must contain policy recommendations for the implementation of the plan and its elements.[407]

Coordination is an important element of the QLA. In addition to the required coordination element, each comprehensive plan must indicate the relationship of the proposed development of the area to the plans of adjacent counties, municipalities, and applicable state polices, including setting forth the procedures to ensure continuing coordination.[408] In addition, planning offices obtain the information to develop plans from the state. State agencies provide the data and other necessary information to create plans, and the Office of State Planning Coordination provides an array of information on state land use and development goals and policies, regulatory requirements, financial capabilities, facility location plans, natural resources, and economic development strategies.[409] Similarly, DNREC is empowered by the Delaware Land Protection Act[410] to identify state resource areas that must be included in the conservation element of county and municipal comprehensive plans.[411] To effectuate this requirement, local governments must adopt and incorporate overlay zoning ordinances, guidelines, and specific technically-based environmental performance standards, design criteria, and mitigation requirements to protect the significant ecological functions identified by DNREC in these resource areas.[412]

Once a comprehensive plan is complete, it must be submitted to the state for review and certification by the Governor's Advisory Council on Planning Coordination. Annual updates also must be submitted to the Council after the plan is adopted, including an assessment and evaluation of the success or failure of the plan and its elements, and it may reformulate the objectives, policies, and standards in the plan.[413] After adoption, county land use maps and

[405] *Id.* §§ 2656(g), 4956(g), 6956(g).
[406] *Id.* §§ 2656(g), 4956(g), 6956(g). Counties must also develop a capital improvements plan that is designed to consider the need for and the location of public facilities. The capital improvements plan must be developed in accordance with the adoption of the comprehensive plan and must be consistent with the comprehensive plan. *Id.* §§ 2656(c), 4956(c), 6956(c).
[407] *Id.* §§ 2656(f), 4956(f), 6956(f).
[408] *Id.* §§ 2656(e), 4956(e), 6956(e).
[409] *Id.* §§ 2657, 4957, 6957.
[410] Del. Code, tit. 7, § 7501 *et seq*.
[411] *Id.* § 7507.
[412] *Id.* § 7508.
[413] Del. Code, tit. 9, §§ 2658, 4958, 6958.

development regulations implementing the comprehensive plans have the force of law and no development can be permitted unless it conforms to the map and regulations.[414]

The QLA does not apply to municipalities, which have separate authority over planning and zoning. Delaware law authorizes any incorporated city or town to establish a planning commission.[415] Any planning commission must prepare a comprehensive plan for all or part of the city or town. Comprehensive plans include a development strategy and must demonstrate coordination with other municipalities, the county, and the state. As under the QLA, municipal comprehensive plans must be submitted to the state for review and certification.[416] Plans for cities of more than 2,000 people must also include policies, statements, goals, and planning components for public and private uses of land, open spaces and recreation, protection of sensitive areas, and other issues. Municipalities with a plan must use the plan as the basis for their municipal zoning regulations, and must rezone and update their zoning maps to correspond to the plan. In addition, once adopted, the comprehensive plan has the force of law and all development must be consistent with the plan.[417]

Renewable offshore energy projects are likely to be affected by land use plans to the extent that they may affect where transmission lines come ashore, and where support facilities may be placed. As noted previously, several Delaware laws, including the CZA, BPA, and WA, require compliance with land use plans and zoning requirements as an element of permitting.

h. Water Pollution Control

Delaware's water pollution control law may affect the permitting, construction, and operation of offshore renewable energy facilities. Facilities such as turbines, although they are likely to be placed in federal waters, may be subject to state review. In addition, transmission and other facilities may be placed in Delaware state waters, and the construction and operation of these facilities may result in waste heat, turbidity, or other forms of pollution. These facilities thus may be subject to state water pollution control law administered by DNREC.

i. Water Quality Standards

Section 303 of the Clean Water Act directs states to adopt water quality standards that define the goals for ambient conditions within waters of the state.[418] The standards must identify the designated use or uses to be made of the waters, provide narrative or numerical water quality

[414] *Id.* §§ 2659, 4959, 6959.
[415] Del Code, tit. 22, § 701.
[416] *Id.* § 702(f). The Governor's Advisory Council will conduct a public meeting prior to the state review unless the municipal plan is fully consistent with statewide land development goals, policies, and criteria. *Id.*
[417] *Id.* § 702.
[418] 33 U.S.C. § 1313. Tribes are authorized to establish water quality standards for waters within their jurisdiction, but state standards will apply in the absence of approved tribal standards.

criteria sufficient to protect those uses, and establish an antidegradation policy to protect those waters currently meeting or exceeding levels necessary to protect designated uses.[419]

The Delaware water quality standards, last revised by DNREC in 2004, apply to all waters of the state, including marine waters.[420] The standards indicate which of nine designated uses apply to each basin and waterbody. For example, designated uses for the Delaware Bay and Atlantic Ocean include industrial water supply, primary contact recreation, and fish, aquatic life, and wildlife (as well as shellfish harvesting in approved areas of the Delaware Bay).[421] In addition to setting out the designated uses for each water body, the standards set out specific water quality criteria that apply to all waters or to specific designated uses. Criteria applicable to specific uses include criteria for protection of aquatic life and human health.[422] Waters of exceptional recreational or ecological significance (ERES) are subject to specific criteria. DNREC cannot issue a permit to new sources of pollution in ERES waters that will increase pollutant loadings for criteria pollutants, including total suspended solids, absent a demonstration from the applicant that discharge elimination systems are fully utilized and that the discharge is consistent with the *pollution control strategy* (PCS) for the basin. ERES waters, including those in the Delaware Bay and Atlantic Ocean, are to be delineated by these PCSs, which provide for implementation of best management practices and may include additional requirements necessary to prevent the violation of the water quality standards, protect all resources in the basin, and assure the protection and propagation of a balanced, indigenous population of fish, shellfish, aquatic vegetation, and wildlife.[423] PCS are also used to implement Total Maximum Daily Load (TMDL) measures to protect water quality, as described later in this section. The PCS are being created by seven citizen-led Tributary Action Teams.[424] To date, however, only one PCS, for the Inland Bays, has issued a final PCS.[425] As a result, the specific PCS components for offshore waters and most watersheds are yet to be finalized and their specific restrictions and ERES areas have not yet been specified.

The water quality standards also include an antidegradation policy. It requires that the water quality necessary to protect existing uses must be maintained and prohibits statistically significant reduction of biological, chemical, or habitat quality. Where water quality exceeds that necessary to support propagation of fish, shellfish, and wildlife or recreational use, that water quality must be maintained. In ERES waters, quality must be maintained or enhanced.

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[419] 40 C.F.R. Part 131.
[420] Del. Admin. Code, tit. 7, § 7401, at 2.
[421] *Id.* at 3.
[422] *Id.* at 4.
[423] *Id.* at 5.6.
[424] DNREC, *Introducing our Pollution Control Strategies*, http://www.dnrec.state.de.us/water2000/sections/watershed/ws/pcs.htm.
[425] Del. Admin. Code, tit. 7, § 7403; DNREC, Regulations Governing the Pollution Control Strategy for the Indian River, Indian River Bay, Rehoboth Bay, and Little Assawoman Bay Watersheds (2008), *available at* http://www.dnrec.state.de.us/water2000/sections/watershed/ws/IB_PCS_final_and_appendices.pdf.

However, DNREC may allow limited degradation where lower water quality is necessary to accommodate important social or economic development or result in a substantial net environmental or public health benefit in the area where the waters are located.[426]

ii. Water Pollution Permitting

Under the Clean Water Act, discharge of a pollutant from a point source in Delaware is prohibited in the absence of a National Pollutant Discharge Elimination System (NPDES) permit issued by DNREC.[427] In addition, dischargers must comply with any applicable Delaware River Basin Commission regulations in areas of the state subject to its jurisdiction.

DNREC's water pollution permitting requirements are likely to have limited direct applicability to offshore renewable energy facilities because these facilities are unlikely to discharge pollution once construction is complete (and because they are likely located in federal, and not state, waters). By analogy, the Cape Wind project application indicated that neither turbines nor the electrical service platform require the use of water for operations or maintenance, and runoff of rainwater from these facilities will not affect water quality and therefore does not require a stormwater discharge permit.[428] Similarly, although underwater transmission lines may require permits from the U.S. Army Corps of Engineers for construction in federally protected waters pursuant to section 404 of the CWA and Section 10 of the Rivers and Harbors Act, as indicated previously, cable construction would not likely require a NPDES permit from the state of Delaware.[429]

While submarine cables and offshore generation facilities are unlikely to require NPDES permitting, the same cannot be said for associated onshore development. Onshore facilities, including transmission lines located in upland areas, are likely to require permitting through the Delaware NPDES program for stormwater discharges related to construction.[430]

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[426] Del. Admin. Code, tit. 7, § 7401, at 5.
[427] Del. Code, tit. 7, § 6003.
[428] Cape Wind Energy, Summary of Plan Materials, *available at* http://www.boemre.gov/offshore/PDFs/CapeWindProjectPlanFiling2.pdf.
[429] Drilling requires a NPDES permit in some contexts, including for offshore for oil development. Applicable effluent limitations guidelines for offshore oil drilling differ depending on the type of waste but adopt a zero discharge standard for all drilling fluids and cuttings from oil and gas facilities within 3 miles from shore. EPA, Effluent Limitations Guidelines and New Source Performance Standards for the Oil and Gas Extraction Point Source Category, 66 Fed. Reg. 6850 (Jan. 22, 2001). Drilling for the purpose of laying transmission lines would not be subject to the guidelines for oil and gas point sources, but drilling restrictions have been required for past offshore wind projects. If the drilling is in federal waters, a federal NPDES permit might be needed if there is any anticipated discharge. *See*, *e.g*. MMS, Record of Decision: Cape Wind Energy Project, Horseshoe Shoal, Nantucket Sound (April 28, 2010), *available at* http://www.boemre.gov/offshore/RenewableEnergy/PDFs/CapeWindROD.pdf.
[430] For a description of stormwater permitting considerations for an approved offshore wind project, see MMS, Cape Wind Energy Project: Final Environmental Impact Statement, OCS Pub. No. 2008-040, at Appendix C: Draft Stormwater Prevention Plan (2009).

iii. TMDLs

Pursuant to the federal Clean Water Act, Delaware must regularly identify waters that do not meet its water quality standards and must periodically submit to EPA a list of those impaired waters. It must develop total maximum daily loads (TMDLs) for waters impaired by a pollutant, identifying allowable pollutant loadings from permitted point sources and nonpoint sources (plus a margin of safety) that would allow those waters to meet water quality standards.[431] In Delaware, pollution control strategies (PCS) set out the specific actions needed to achieve the load reductions delineated by the TMDLs and a schedule for those actions.[432]

DNREC shares its water quality assessment authority with the Delaware River Basin Commission (DRBC). The DRBC was created by interstate compact and has legal authority to manage the Delaware River Basin and Delaware Bay. The DRBC prepares watershed assessments for the basin every two years, and DNREC incorporates its assessments in the creation of its section list of waters in non-attainment of water quality standards.

Delaware has complied with the requirement to create a 303(d) list, but has experienced challenges developing and implementing TMDLs and pollution control strategies. To date, DNREC has promulgated one pollution control strategy covering the Indian River, Indian River Bay, Rehoboth Bay, and Little Assawoman Bay watersheds (the Inland Bays).[433] A number of TMDLs for specific waterbodies and pollutants have been separately developed, many of them pursuant to a court order.[434] DNREC's 2008 list of waters in non-attainment anticipates creation of additional TMDLs for Delaware Bay, Delaware Estuary, and Inland Bays/Atlantic Ocean.waters in 2012, 2013, and 2011, respectively. The report does not indicate whether pollution control strategies are planned for offshore areas.[435] While TMDLs theoretically could affect the planning and implementation of offshore renewable energy facilities in Delaware, they may have limited applicability in this context.

iv. Water Quality Certification

Even if offshore renewable energy facilities are placed in federal waters, they may be subject to state review pursuant to section 401 of the Clean Water Act. Section 401 requires states (or

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[431] 33 U.S.C. § 1313.
[432] DNREC, State of Delaware 2008 Combined Watershed Assessment Report (305(b)) and Determination for the Clean Water Act Section 303(d) List of Waters Needing TMDLs (2008), *available at* http://www.wr.dnrec.delaware.gov/Information/OtherInfo/Documents/2008%20Combined%20Watershed%20Report.pdf.
[433] Del. Admin. Code, tit. 7, § 7403.
[434] *Id*. Some of these TMDLs have been promulgated into state regulations. *Id.* § 7404 *et seq*. The regulations do not include all TMDLs, however. EPA lists additional TMDLs for Delaware water. *See* Mid-Atlantic Water, Delaware TMDL, http://www.epa.gov/reg3wapd/tmdl/de_tmdl/index.htm (last visited June 15, 2011).
[435] DNREC, State of Delaware 2008 Combined Watershed Assessment Report (305(b)) and Determination for the Clean Water Act Section 303(d) List of Waters Needing TMDLs (2008), *supra* note 432, at 43–44.

interstate agencies with jurisdiction, including the DRBC) to review applications for federal permits and licenses and to certify that the federally authorized actions will not violate adopted water quality standards. No federal license or permit may be granted until the certification has been obtained, or waived by state inaction.[436]

Certification may prove to be the most potent regulatory provision available to Delaware in the water quality context. Delaware would have the opportunity to certify any offshore renewable energy project that affects state waters, including through direct emplacement of generation facilities or through placement of transmission lines in state waters. Projects that fail to meet state water quality standards may be halted[437] or the state may place conditions on their approval.[438] The DNREC Wetlands and Subaqueous Lands Section is responsible for section 401 permitting.

i. Fish and Wildlife

The restrictions in the Delaware fish and wildlife laws and regulations are limited. State laws require DNREC to protect, manage, and conserve "protected" wildlife, which includes all forms of game and wildlife except those specifically not protected.[439] DNREC has issued extensive regulations to implement this mandate.[440] These regulations primarily focus on direct take of fish and wildlife and provide limited protection of habitat. Endangered species are also protected in Delaware, but in practical effect, these protections are limited. Unlike federal law, which bars the "take" of listed species, Delaware law and DNREC regulations prohibit only the importation, transportation, possession, or sale of listed species.[441] As a result, while offshore renewable energy development will require consultation to prevent the take of federally listed threatened and endangered species, the Delaware ESA analogue is unlikely to play an important role in restricting energy development.

A few provisions of DNREC fish and wildlife regulations act may limit actions on lands administered by the department. It is unlawful to cut, injure, or remove trees, shrubs, wildflowers, ferns, mosses or other plants on such lands unless authorized by the department for management, research, or educational purposes.[442] It also is unlawful for any person to enter

[436] 33 U.S.C. § 1341.
[437] Islander East Pipeline Co. v. McCarthy, 525 F.3d 141 (2d Cir. 2008) (upholding Connecticut's determination that offshore pipeline project would violate water quality standards).
[438] MMS, Cape Wind Energy Project: Final Environmental Impact Statement, OCS Pub. No. 2008-040, at 1-12 (2009) (reviewing Massachusetts laws for the Cape Wind project to obtain a state water quality certification).
[439] Del. Code, tit. 7, § 102(a).
[440] Del. Admin. Code, tit. 7, § 3900.
[441] Del. Code, tit. 7, § 601; 7 Del. Admin. Code, tit. 7, § 3900, at 16.1.
[442] Del. Admin. Code, tit. 7, § 3900, at 8.2.6.3.

department-administered tidal or impounded areas during the waterfowl season, except for authorized hunting or with written permission.[443]

Finally, Delaware has established a nongame wildlife and habitat preservation program based on findings by the General Assembly that it is in the best interest of the State to preserve and enhance the diversity and abundance of nongame fish and wildlife and to protect the habitat and natural areas harboring rare and vanishing species, as well as areas of unusual scientific significance or having unusual importance to the survival of native species in their natural environments.[444] This statute established a preservation fund, restricted to voluntary contributions, to carry out these purposes.[445]

It is important to recognize that other laws include elements that provide some additional protections for fish and wildlife, as noted in the NOAA-approved state enforceable policies document.[446] As noted previously, the Wetlands Act requires consideration of the effect of proposed activities on wetlands habitat and the value of tidal ebb and flow.[447] Similarly, shellfish laws authorize DNREC to provide for the preservation and improvement of shellfish resources, which the Department has used to limit shellfishing.[448]

j. State Energy Policies and Programs

The Delaware Public Service Commission (PSC) regulates public utilities, including electricity utilities, serving the state. PSC regulations govern provision of utility services to consumers and the rates that can be charged. The Delaware legislature deregulated the electricity system in the state, such that the Commission now retains authority over distribution of electricity, but not generation or transmission.[449] State energy law does include a renewable portfolio standard that sets out a schedule for the minimum required percentage of energy to be sourced from eligible sources.[450] However, this standard does not provide exemptions from environmental standards for any type of renewable energy generation or transmission.

In addition to the PSC, the legislature enacted the Delaware Energy Act, which established the state Energy Office within DNREC.[451] The energy office collects and disseminates information on energy resources, including information on the environmental impacts of energy generation

[443] *Id.* at 8.3.2.2.
[444] Del. Code, tit. 7, § 201. Nongame fish and wildlife includes fauna that is not commonly trapped, killed, captured or consumed, including rare and endangered species. *Id.* § 202(a).
[445] *Id.* § 204.
[446] *See* Delaware Coastal Management Program, *Comprehensive Update and Routine Program Implementation*, *supra* note 148, at 49–50 (2010).
[447] Del. Code, tit. 7, § 6604(b).
[448] Del. Admin. Code, tit. 7, § 3700.
[449] Del. Code, tit. 26, § 201 *et seq*.
[450] *Id.* § 351 *et seq*.
[451] Del. Code, tit. 29, § 8051 *et seq*.

and use and the means of reducing those impacts through alternative fuels and other means. The office also coordinates with other state and federal agencies, including but not limited to the PSC, and facilitates the development of a comprehensive state energy plan to promote conservation, the use of renewable energy generation and use, and other conservation and efficiency goals.[452] While the energy office oversees a sustainable energy utility,[453] it does not have regulatory authority over renewable energy generation.

The most recent state energy plan was issued in 2009.[454] The plan does not recommend regulatory changes related to renewable energy or discuss offshore energy projects. The plan does include some discussion of related issues, however, including challenges related to siting of transmission projects. Transmission is subject to and may be subject to conditions imposed by local land use plans, and the plan notes that utilities lack condemnation authority. While stopping short of recommending provision of eminent domain to utilities, the plan does support continued study of the land use/transmission nexus.[455]

k. Transmission on State Rights-of-Way

Offshore renewable energy transmission lines that come ashore in Delaware must connect to the existing power grid. To do so, they will need to travel across onshore areas to reach the point of interconnection.

Under Delaware law, any corporation using lines or wires to transmit electric current may construct and maintain those wires through and across or under any canals or canal lands, rivers or other waters, and along any highways in Delaware, except for highways within and maintained by incorporated cities and towns, with the assent of the public authority with control over the highways.[456] "Electric utility corporations" have additional specific powers and duties for the use of public highways. These powers and duties apply to any corporation organized under Delaware's corporate laws for the purpose of constructing, maintaining, and operating works for the supply and distribution of electricity.[457] With the consent of municipalities and landowners whose property is burdened, these corporations may erect posts or poles for electrical supply wires[458] or lay pipes, conduits, or wires beneath public roads.[459]

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[452] *Id.* § 8053.
[453] *Id.* § 8059.
[454] Governor's Energy Advisory Council, Delaware Energy Plan 2009-2014 (2009), *available at* http://www.dnrec.delaware.gov/energy/Documents/Energy%20Plan%20Council%20report%20-%20Final.pdf.
[455] *Id*. at 87–88.
[456] Del. Code, tit. 26, § 901(a).
[457] *Id.* § 906.
[458] *Id.*
[459] *Id.* § 907.

The Delaware Department of Transportation (DelDOT) has issued regulations, in the form of a manual, governing the interaction of utility facilities with state rights-of-way.[460] The manual requires utilities to obtain a permit from DelDOT prior to installation or maintenance of their facilities and prescribes specifically how those facilities are to be installed. Several types of permits are available, including public utility annual master franchises, use and occupancy agreements, utility construction permits, and letter agreements. Public utility franchises grant the use of highway rights of way but are not available to non-public utilities.[461] Use and occupancy agreements allow individuals and entities to install privately owned facilities that cross a state-maintained road; construction longitudinal to the road is not permitted.[462] Construction permits authorize a utility to construct, maintain, or repair a utility facility within the state right-of-way.[463] Before undertaking work, both a utility construction permit and a use and occupancy agreement (or a master franchise) are required.[464]

The DelDOT utility manual provisions mean that offshore renewable energy providers cannot obtain master franchises, and therefore cannot install facilities along public rights-of-way, unless they are determined to be public utilities. The state utility law defines a "public utility" to include any public or private entity operating "any . . . electric . . . service, system, plant or equipment" for public use in the state, except for "electric suppliers."[465] Although offshore renewable energy generation facilities are not electric suppliers because they are not engaged in sales of power to retail customers, they are equally unlikely to be considered public utilities in the state of Delaware because they presumably will not provide electrical service for public use. As a result, offshore electrical providers will be unable to route transmission lines along public highways without a policy change or contractual arrangement providing for onshore transmission lines to be owned and maintained by a public utility rather than by the offshore renewable electric generator.

One example of a contractual arrangement to address the issue of transmission line routing is already available. In 2006, the Delaware legislature directed Delmarva Power and Light

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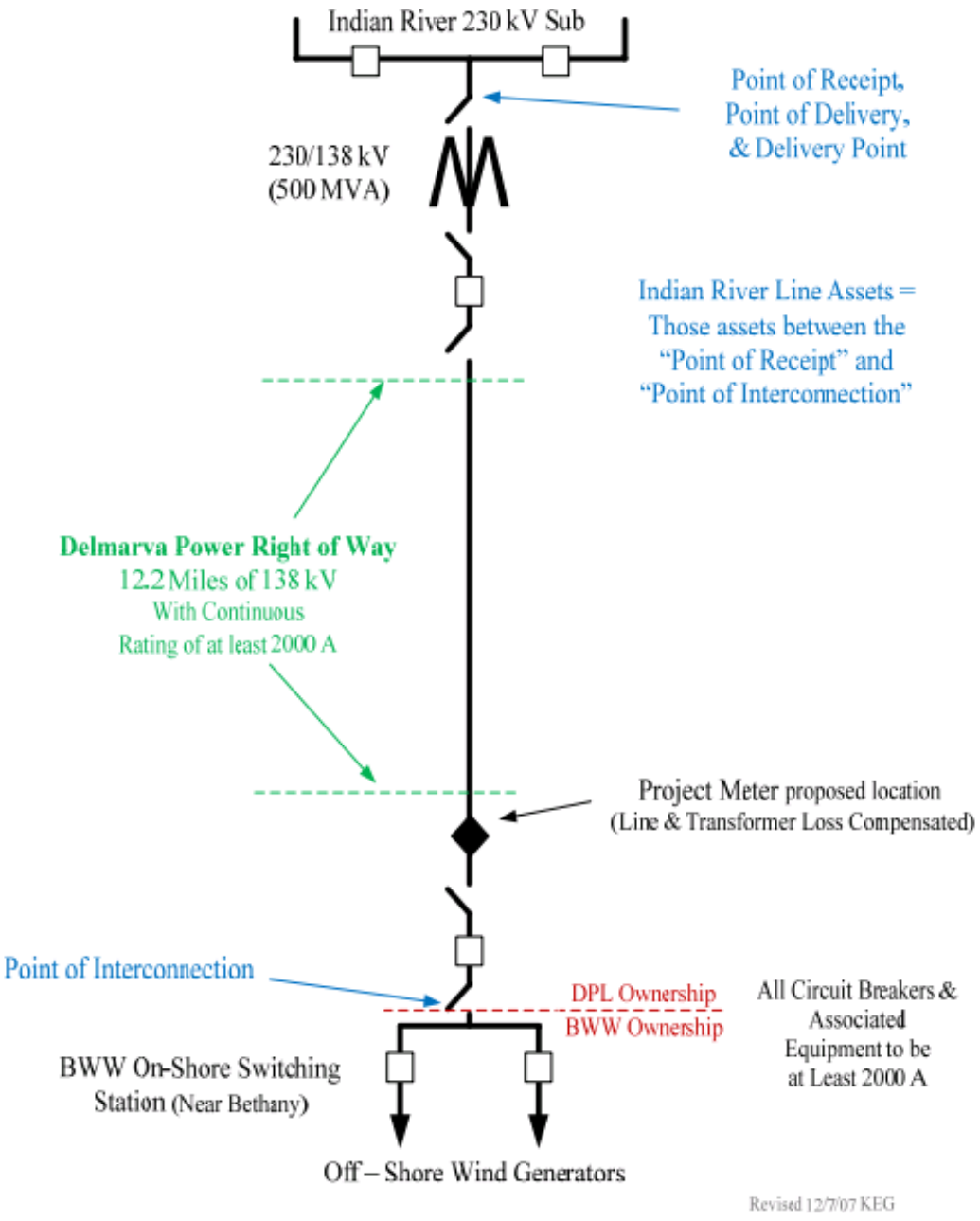
[460] Del. Admin Code, tit. 2, § 2400.
[461] *Id.* at 4.1.1. Limited other utility types are eligible, including certain cable or video providers and utilities owned, operated, controlled, or created by the State or political subdivision. *Id.* at 4.2.1.
[462] *Id.* at 4.1.1, 4.3.2.
[463] Both public utilities and private facilities are eligible for construction permits. *Id.* at 4.4.1.
[464] *Id.*
[465] Del. Code, tit. 26, § 102(2). An "electric supplier" is any entity certified by the Public Service Commission that "sells electricity to retail electric customers utilizing the transmission and/or distribution facilities of a nonaffiliated electric utility." *Id.* § 1001(14). Retail customers are end users. *Id.* § 1001(21). "Transmission facilities" and "distribution facilities" must be located in Delaware, owned by a public utility; and used to transmit and deliver electricity to customers. *Id.* §§ 1001(9),(26). The two types of facilities differ with respect to voltage; transmission facilities operate at voltages above 34,500 volts, while distribution facilities operate below that voltage. In turn, "transmission services" means "the delivery of electricity from supply sources through transmission facilities," *Id.* § 1001(26), and "distribution services" refers to "services, including metering, relating to the delivery of electricity to a [retail] customer through distribution facilities." *Id.* § 1001(9). Offshore renewable energy producers are likely to sell their electricity wholesale and therefore are unlikely to be electric suppliers.

(DP&L), a public utility, to obtain long-term supply contracts. DP&L selected Bluewater and in 2008 the two parties entered into a power purchase agreement.[466] The agreement provides for energy to be routed to a Bluewater-owned onshore switching station that would serve as the point of interconnection with DP&L. DP&L would own and maintain the transmission lines between the point of interconnection and the "point of delivery" – in this case, DP&L's Indian River substation (see Figure 3).[467] The agreement provides that DP&L would own and maintain the transmission lines for a fee paid by Bluewater.[468] Under this contractual arrangement, Bluewater would be able transmit its electricity to DP&L along public rights of way by arranging for the lines to be controlled by an entity controlled by a franchise holder.

The DP&L/Bluewater arrangement is only one method for addressing the limitation on the availability of public rights-of-way for non-public utilities. Other solutions would require changes to laws or regulations; for example, DelDOT's utility manual could potentially be revised to allow longitudinal use and occupancy agreements for the purpose of interconnection with public utility facilities. Insofar as offshore renewable energy generation entities can avoid the issue through contractual agreements, however, such considerations are likely premature.

[466] Power Purchase Agreement Between Delmarva Power & Light Company ("Buyer") and Bluewater Wind Delaware LLC ("Seller") (June 23, 2008), *available at* http://depsc.delaware.gov/electric/irp/bwwppa062308.pdf. The agreement was amended in 2010 but remains in force.
[467] *Id*. at Appendix 1.
[468] *Id*. at 14 ("defining Indian River Line Assets").

Figure 3. Schematic of Bluewater Wind Connection to DP&L Network.[469]



[469] *Id.* at Appendix 1-4.

Section V. Recommendations

The foregoing review of Delaware laws, policies, and programs examines how they address offshore renewable energy facilities – including siting, environmental considerations, public review, and the interaction of state with federal laws. This section offers specific recommendations to improve these laws, policies, and programs.

1. Strengthen Delaware's ability to plan prospectively for uses of its subaqueous lands, public lands, and other lands for offshore wind generation, transmission, and support facilities. DNREC's permitting and leasing programs are primarily framed in terms of responding to and evaluating externally-initiated applications for use of state lands and resources. But given the state's interest in developing renewable energy and the need to anticipate applications for use of state subaqueous lands for transmission from the OCS, at the least, Delaware should undertake identification of areas that are likely to be needed for these purposes. Doing so could strongly influence the shape of proposals, leasing and transmission alternatives studied by BOEMRE, and choices of the other MARCO states. Such planning can provide opportunities for Delaware to streamline the state review process in areas where siting of transmission is likely to be preferable. DNREC should initially identify areas to be avoided, possible protected areas, and areas where particular problems can be anticipated. While the Subaqueous Lands Act does not contain explicit requirements for planning or designation of areas in advance for leasing, permitting, or withholding from leasing or permitting, its provisions could be interpreted to support such review.[470] Similarly, the broad discretion given DNREC and the Governor in the lease of public lands (which may be traversed by transmission lines in at least some potential configurations) also offers an opportunity to address this issue systematically and early. Such a process could involve public and local government input.

2. Improve state permitting and leasing programs to take into account the characteristics of offshore renewable energy facilities. The current Delaware permitting and leasing programs can accommodate anticipated offshore energy projects, but could be strengthened by modest improvements to address the needs of this new use. Improvements include adjusting lease terms, payments, conditions, and techniques, as described below. Delaware may also want to consider whether to unify the evaluation process in one place to streamline permitting, leasing, and coordination with federal regulators.[471] The state may also want to consider whether to set a

[470] *See, e.g.,* Del. Code, tit. 7 § 7203 ("All jurisdiction and authority remaining in the State as to subaqueous lands for which leases have been made or may be made is invested in the Secretary."); § 7201 (". . . The purposes of this chapter are to empower the Secretary to deal with or to dispose of interest in public subaqueous lands and to place reasonable limits on the use and development of private subaqueous lands, in order to protect the public interest by employing orderly procedures for granting interests in public subaqueous land and for issuing permits for uses of or changes in private subaqueous lands. To this end, this chapter empowers the Secretary to adopt rules and regulations to effectuate the purposes of the chapter . . . .").

[471] Designation of a lead entity can be important in assuring that permit reviews and conditions are consistent, efficient, and effective, especially since there will be multiple regulatory programs involved – including § 401 water

specific fee schedule for offshore projects in order to ensure recovery of state costs; such provisions exist in individual statutes such as the SLA, but could be addressed legislatively or through a review of the fees associated with each of the numerous permits likely to be triggered.

2.a. Subaqueous Lands Act (SLA). In addition to conducting advance planning or designation of areas, Delaware should make some changes to SLA implementation to better address offshore wind power and transmission siting.

- Update the regulations to ensure that a *lease* is required for wind generating facilities and for transmission lines on subaqueous lands in order to codify the practice. Specify by regulation the length of the lease term and in particular tailor the lease term to the expected life of the generating facilities; this may require longer than the 20 years normally provided as a long-term lease.
- Provide in the regulations that the lease area for transmission is available for other compatible uses, and ensure that if additional transmission capacity is needed in the future that it can occupy the *same* corridor, even if owned by a separate entity. This will be important if wind energy is to continue to develop and expand offshore of Delaware without occupying multiple areas of subaqueous lands. Clarify that the lease area does not become "private subaqueous land" by virtue of the lease.
- Specify lease fees. These are currently established by the General Assembly as provided in the regulations,[472] but should be established based on an assessment of likely costs of administering the use and achieving necessary siting objectives.
- Coordinate state environmental impact assessment review under the SLA with BOEMRE's NEPA environmental impact statement process for the OCS leasing decision and Site Assessment Plan (SAP). This early integration is important to assure that critical decisions are not made in the OCS leasing stage that foreclose or limit important options for the use of subaqueous lands in the transmission stage. The SLA regulations provide that DNREC "may require" an environmental impact assessment for certain activities.[473] DNREC should establish a policy always to require such assessment for wind siting and transmission leases on subaqueous lands.[474] DNREC should develop an approach to coordinate its required environmental impact assessment review with the federal

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quality certification, subaqueous lands leasing, BPA review, CZMA federal consistency, fish and wildlife review, CZA determinations, and many others. Compare recommendation for turbines in state waters in A. DHANJU & J. FIRESTONE, A FRAMEWORK FOR REGULATION OF OFFSHORE WIND POWER IN DELAWARE STATE WATERS (Jan. 2008)("We recommend that the State create a centralized one-stop agency model to handle all resource management issues, from allocating property rights, managing and monitoring the resource use, and overseeing decommissioning of the wind turbines.").

[472] Del. Admin. Code, tit. 7, § 7504 at 5.2.

[473] *Id.* at 4.7.2.

[474] Integration with BOEMRE's NEPA is as important as integration with any Corps of Engineers NEPA process under Clean Water Act § 404, or Rivers and Harbors § 10. *Compare* Dhanju & Firestone, supra note 471, at 34–35 ("Delaware should consider requiring an environmental evaluation of its own . . . . integrated to the maximum extent feasible" with any federal review).

environmental reviews to gain stronger influence over federal decisions, as well as to achieve efficiencies. The coordination approach should include:

  - deep involvement with BOEMRE in "scoping" the combined or coordinated environmental review;
  - pursuing "cooperating agency" status under NEPA, which will give the state a seat at the table throughout the environmental review process and some control over the alternatives being considered, the conduct of the analysis, and the ultimate shape of the Final EIS;[475] and
  - using the state environmental impact assessment provisions under the SLA in CZMA interstate and federal consistency.

- Specify by memorandum, regulation, or modification of the application form, the information that will be considered in evaluating environmental impacts of wind facility or transmission line siting on subaqueous lands. This advance specification could affect private sector planning for the siting of transmission corridors or generating structures. Consider developing an approach or standard for review of visual impacts under the public use impacts or other impacts defined in the regulations.[476]
- Ensure that public participation, hearing, and review always occur for SLA leasing to support wind and transmission facilities.[477]
- Establish specific permitting conditions, if warranted (such as preferences for directional drilling or approaches to minimize near-shore impacts). Specific design requirements in the regulations apply to certain proposed activities, including dredging,[478] and installation of pipelines and conduits,[479] but have not specifically contemplated this use.

2.b. Coastal Zone Act (CZA). Clarify the status of wind facilities and transmission facilities under the CZA. Under the CZA regulations, electrical transmission and support facilities are not regulated uses. But wind turbines in the coastal zone (not federal waters) may trigger some scrutiny as potential heavy industry. Because wind power electrical generation facilities

[475] Under the NEPA regulations, a "cooperating agency" is a government or governmental entity that by virtue of its expertise or jurisdiction over an aspect of a proposed federal action serves as a partner with the federal lead agency in managing and carrying out the analysis of the environmental impacts. States and state agencies are eligible to be cooperating agencies. The federal lead agency is to use the "environmental analysis and proposals" of cooperating agencies "to the maximum extent possible consistent with its responsibility as lead agency," and must meet with the cooperating agency when the cooperating agency so requests. 40 C.F.R. §§ 1501.6, 1508.5. Under Department of Interior regulations and practice, the lead agency enters into an MOU with the state defining schedules, issues, approaches and commitments. *See also* Council on Environmental Quality, *Memorandum for the Heads of Federal Agencies* (January 30, 2002).

[476] Del. Admin. Code, tit. 7, § 7504, at 4.6.3, 4.7.5. Consider adding visual impacts as a category.

[477] Del. Code, tit. 7, § 7208(a)(1) (more than 20 years), (2) (if the Secretary determines that a public hearing is in the public interest).

[478] Del. Admin. Code, tit. 7, § 7504, at 4.11. "Dredging" is a defined term that means "the removal or displacement, by artificial activities, of mud, soil, sand, gravel, shells or other material from subaqueous lands." *Id.* at 1.0. Jet plow actions appear to fall under this definition to the extent they displace the seabed.

[479] *Id.* at 4.13.

are not on DNREC's list of "uses not regulated" while solar facilities are included, there is some risk that they may meet the definition of heavy industry absent some determination.

2.c. Beach Preservation Act (BPA). If transmission lines and facilities cross the beach, are installed by excavation rather than drilling, originate or terminate in the beach zone, or include the construction of structures on the beach, such projects will be subject to the BPA. In contrast, directional drilling that brings transmission lines ashore *under* the beach may or may not be subject to the BPA.

- DNREC should clarify whether in its view BPA regulation would apply to transmission lines traversing the beach underground. This could help promote specific planning and design.
- If a transmission project is subject to the BPA, and construction of a structure is needed seaward of the line, the project would need to meet an exception to the regulatory prohibition on permitting – most likely, the "intended purpose" exception. The current regulatory list of structures for which this exception is available does not include electrical transmission lines, but does include analogous structures such as pipelines.[480] This suggests that the intended purpose exception would apply, but some uncertainty about the applicability of this exception may remain; this issue could be clarified by DNREC.
- Assuming that the regulations would not prohibit the permitting of transmission facilities, the next step to consider is how DNREC would review applications and issue permits for these projects (including drilling). Mitigation measures may be required, depending on the identified adverse effects, but these measures and terms and conditions are largely left to DNREC's discretion. Amendment of the regulations, however, could require applicants to include all reasonable mitigation measures to minimize their adverse impacts to the beach and to compensate for damage.

2.d. Wetlands Act. DNREC should update its wetlands maps,[481] and encourage avoidance of regulated wetlands by transmission and support infrastructure.

2.e. Public Lands Laws. Given that the state owns so much of the coastal land in Delaware through its conservation programs and acquisitions, DNREC should clarify the basis under which it may consider granting leases and easements over public lands for transmission. This may include some guidance as to likely "conditions and . . . rentals" that DNREC may "deem advisable for the public good."[482]

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[480] Del. Admin. Code, tit. 7, § 5102, at 3.1.1.4. If the exceptions are redefined, as in the draft proposed regulations, it will be necessary to determine whether the redefinitions could accommodate appropriate transmission-related facilities.
[481] Environmental Law Institute, *Delaware Wetland Program Review* (August 2010).
[482] Del. Code, tit. 7, § 4510.

2.f. Unify the evaluation process. A unified evaluation process would streamline permitting, leasing, and coordination with federal entities. Past proposals to establish a statewide coordination act have not succeeded.

- Delaware could consider the possibility of enhancing state coordination through a state environmental impact review process (like a state NEPA). While Delaware has not enacted its own state NEPA, other states have done so. For example, in California, pursuant to the California Environmental Quality Act, and in New York, as part of the State Environmental Quality Review process, the reviewing state agency or agencies can require proposed projects to identify and adopt measures to mitigate significant environmental impacts. The environmental impact review process is also used to coordinate decisions across multiple agencies, which use the same environmental documents to examine the project and its mitigation opportunities. In Massachusetts, the state's marine spatial plan was integrated with the environmental review process required by the Massachusetts Environmental Policy Act (MEPA), by creating a presumption that siting a mapped activity outside of the areas allocated for them is more environmentally damaging than siting it within the specified areas. Therefore if a project proponent wishes to site an activity outside of a designated area, it must overcome the presumption. Delaware may consider enacting a state environmental impact review requirement that would provide a means for coordinating various state permitting, licensing, and other authorizing processes. While this authority could apply more broadly than just offshore renewable energy, it can also work in conjunction with other processes and requirements to provide targeted tools for that sector. Alternatively Delaware may consider developing a state environmental impact review process specifically intended to coordinate its multiple permit, leasing, and other decisionmaking for offshore renewable energy.
- As noted above (recommendation 2.a) the Subaqueous Land Act regulations provide that DNREC "may require" an environmental impact assessment for certain activities under that Act. DNREC could develop regulations and requirements for these assessments to ensure that they cover all of the issues, alternatives, and mitigation concerns that may arise under *all* of the Delaware laws and programs that will apply to a proposed renewable energy project, in order to streamline review and permitting.

3. Prioritize development and identification of ERES for offshore waters, as needed. This will strengthen state protection of offshore water, and will increase the effectiveness of Section 401 certification applicable to federal actions – including construction, operation, decommissioning of offshore turbines and transmission lines. Waters of exceptional recreational or ecological significance (ERES) are subject to specific criteria.

4. Adopt and strengthen habitat and wildlife protection measures and mitigation. Delaware's wildlife and habitat resources are substantial, but protective measures are typically

incorporated case-by-case in permitting activities. If there are standards for survey, assessment, monitoring, recovery and restoration, such standards will be useful and likely to be deferred to by federal agencies if they reflect a consistent approach to the regional wildlife resource. At a minimum, they will affect NEPA review, and may, if incorporated into the Coastal Zone Management Plan, also direct federal consistency.

- Rather than have separate standards and approaches, the MARCO states should insist on a common approach given the significance of the species and linkage of their habitats. MARCO's action plan calls for identifying Mid-Atlantic habitats and migratory pathways. It may be important to establish some interim guidelines and default positions pending the funding and completion of research.
- State regulatory requirements may also be adopted. Virginia recently adopted a permit by rule for wind facilities under 100 MW, and has some provisions specifically applicable to wind facilities in the coastal zone. While the rule does not reach federal OCS lands, the rule requires extensive pre-application analysis, determination of whether a project will have significant adverse impacts on wildlife or historic resources, and mitigation planning. For example, the location of a project site in a Coastal Avian Protection Zone may trigger the requirement for additional studies; and applicants must "take all reasonable measures to avoid significant adverse impacts" on state-listed threatened and endangered species and avian resources in Coastal Avian Protection Zones.[483] There are also special protections for sea turtles, such as restrictions on construction in sea turtle habitat during nesting and hatching season.[484] The rule also includes monitoring requirements for wildlife impacts; after a year, the mitigation plan must be revised according to the results of the monitoring.[485] Development of similar procedural requirements may benefit Delaware's species and habitats.

5. Improve coordination with counties/municipalities. Offshore wind siting, and especially the bringing ashore of transmission, can be affected by local land use decisions that may or may not be consistent with state objectives. Renewable offshore energy projects are likely to be affected by land use plans to the extent that they may affect where transmission lines come ashore, and where support facilities may be placed. DNREC and the Delaware Task Forces should check limitations and inconsistencies of local land use plans with state objectives, and consider whether the state planning council should specify goals relevant to offshore energy and transmission. The Office of State Planning Coordination could be tasked with providing information on facility location plans, natural resources, and other factors relevant to local decisions that may affect offshore energy development.

[483] 9 VA. ADMIN. CODE §§ 15-40-40(A); 15-40-60(B)(1); 15-40-60(B)(3).
[484] *Id.* § 15-40-60(B)(2).
[485] *Id.* § 15-40-50(B)(6).

6. Efficiently coordinate Delaware's interaction with regional/interstate/federal bodies. The current interest in (among other things) renewable energy as part of the state energy mix, OCS renewable energy opportunities, regional cooperation with MARCO, regional CMSP stimulated by the National Ocean Policy, and other issues has resulted in a multiplicity of working bodies, task forces, MOUs, and consultative efforts. Delaware should undertake to prioritize its efforts among these and link their work, personnel, and agendas where possible, in order to improve their effectiveness and reduce conflict and inefficiency.

- *Internal coordination:* Two bodies were specifically created to help manage renewable energy in Delaware: the Delaware Renewable Energy Task Force, which helps implement Delaware's renewable energy standard, and the Delaware Task Force convened by BOEMRE to address OCS renewable energy leasing. In practice the state task force has primarily focused on solar energy development within the state, although its statutory authority is broader. The BOEMRE-convened task force is focused on activities outside of state waters. To increase efficiency, the state should explicitly identify a lead party to coordinate the activities of these entities to avoid gaps, overlaps, and conflicts. DNREC is the primary state entity with relevant permitting authority and home of the Delaware Coastal Management Program and associated consistency review processes, and can fill this role by providing a central clearinghouse for relevant activities and periodically issuing recommendations to maximize collaboration.
- *External prioritization*: Given the multiplicity of external bodies and relationships, prioritize MARCO. Wherever possible, use MARCO as a way to convene and coordinate with other states and to deal with federal agencies. The MARCO states are those that are first in line with the Wind Energy Area (WEA) prospective leasing, and hence can also serve as the key states in dealing with the state BOEMRE Task Forces/Atlantic Offshore Wind Energy Consortium. To the extent to which CMSP moves forward, keep it focused in the near term on immediate efforts to address WEAs, a rapidly moving process. Have federal NOAA funding, if any, support the MARCO effort to maximize state leverage with federal offshore leasing and to promote a seamless understanding and management of Atlantic waters (state, federal, and interstate).
- *Coordinate fisheries actions.* Review whether existing rules offer adequate guidelines for protecting habitats and areas important to fisheries from impacts resulting from offshore energy facility siting, construction, operation, and decommissioning; make sure that the regional bodies are taking into account Essential Fish Habitat and other considerations. Such standards will be more useful in the federal NEPA environmental impact process and federal consistency if they reflect a regionally consistent approach to common resources. Delaware and its neighboring states, operating through MARCO and the relevant interstate fisheries councils and commissions should develop a consistent approach given the significance of the species and linkage of their habitats.

7. Seek change in OCSLA revenue sharing. Delaware and the other MARCO states will not receive royalty revenues from offshore wind projects in federal waters on the outer continental shelf, because most of the interest in offshore wind lies beyond the six nautical mile range where revenues are shared.[486] Because there will be impacts as well as benefits for the MARCO coastal areas resulting from OCS development, the states should consider seeking legislative authorization for participation in revenues paid to the United States by OCS facilities, such as Congress provided for states affected by oil and gas leasing in federal waters in the Gulf of Mexico under the 2006 Gulf of Mexico Energy Security Act. That Act created revenue sharing provisions for Alabama, Louisiana, Mississippi and Texas, and their coastal political subdivisions (CPSs). The states receive 37.5 percent of all qualified OCS revenues, including bonus bids, rentals and production royalties, and must use the shared funds for coastal conservation, restoration and hurricane protection.[487] Alternatively, MARCO could seek to have Congress designate a certain portion of OCS alternative energy funds paid into the federal government to be used by federal agencies and cooperating grantee states to support CMSP, monitoring, mitigation, and coastal enhancement in the Mid-Atlantic States.

[486] OCSLA provides that coastal states will receive 27 percent of the revenue from OCS projects sited wholly or partially within three nautical miles of state submerged lands (i.e., six nautical miles from shore). 43 U.S.C. § 1337(p)(2).
[487] Pub. L. 109-432, 120 Stat. 3006 (2006).

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