STILL SPINNING: A LOOK AT THE FEDERAL LEGAL LANDSCAPE OF OFFSHORE WIND ENERGY IN THE UNITED STATES

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I. INTRODUCTION

As the effects of climate change become more apparent and well known, we are increasingly conscious of where our energy comes from and what the consequences of using that energy are. With oil and coal carrying a stigma for being exceptionally harmful and natural gas becoming associated with the dangerous practice of hydraulic fracturing, society is turning to more sustainable ways to fulfill our energy demands. As we look at new technologies and ideas of how to meet our needs, the resources of our nation's oceans become more intriguing as a source of clean, renewable energy. Offshore wind energy seems particularly exciting, given advances in technology and 4,223 GW of potential power off of our coasts.[2] However, we must consider the environmental and economic impacts of siting a wind energy project offshore and the legal duties imposed by laws and regulations. The current system implemented by the Bureau of Ocean Energy Management (BOEM) of the Department of the Interior (DOI) is in violation of some of our nation's environmental laws, as well as representing poor planning as to our oceans' resources.

This article focuses on the legal and planning deficiencies of BOEM's current offshore wind resource management scheme. First, this article briefly discusses the history of offshore energy in this country and the political climate surrounding it. Then, it provides a brief summary of offshore wind technology. This article will then look at federal regulation of the outer continental shelf (OCS), discussing the evolution of the renewable energy regulatory scheme in the United States, both in its initial formation as well as more recent additions. Subsequently, this article will provide a critique of the United States' current system of offshore leasing for wind energy on first a legal, then a practical level. First, this article will posit that BOEM is inadequately performing its

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[2] 4,223 GW of power is enough energy to power between 950,175,000 and 1,266,900,000 average American homes a year. NAT'L RENEWABLE ENERGY LAB, U.S. RENEWABLE ENERGY TECHNICAL POTENTIALS: A GIS-BASED ANALYSIS 15 (2012).

environmental duties under the National Environmental Policy Act (NEPA). Second, this article will present a practical critique of the current regulatory system from both a planning and moral viewpoint. Finally, this article will conclude by identifying some of the essential changes that must be made when designing a regulatory process for offshore wind energy in the future.

A. Overview of Offshore Energy and the Surrounding Political Climate

For millennia, humanity has harnessed wind energy for the purpose of productive work such as pumping water or grinding grain.[3] More recently, the wind power industry has seen a boom with wind energy becoming the fastest growing source of electricity in the world.[4] Here in the United States, wind power grew explosively in the past few years, with towers providing 73,992 MW of potential power in 2015, constituting 41% of U.S. generation capacity additions that year.[5] In an average year, it is estimated that wind power capacity could supply 5.6% of electricity demand in the United States.[6] This power is generated by facilities in 40 states employing more than 88,000 full time workers.[7]

As wind power becomes a more viable source of renewable energy, the United States has begun looking towards siting wind farms offshore.[8] While the first offshore wind project was installed off of Denmark's coast in 1991, the United States has yet to have an operational utility scale offshore wind energy project.[9] However, the United States does have multiple projects in development, and there are several reasons why offshore wind could be preferable to onshore siting.[10] Compared to onshore sites which are often limited by appropriate available land, wind speed and turbulence, and people's perception of noise and poor aesthetics, offshore project sites are often superior as to these factors as they are sited an average of over 20 miles from the coast.[11] Offshore wind is stronger,

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[3] *Wind Energy Basics*, NAT'L RENEWABLE ENERGY LABORATORY, http://www.nrel.gov/workingwithus/re-wind.html (last visited May 21, 2018).
[4] *About Wind Energy*, WIND ENERGY FOUND., http://windenergyfoundation.org/about-wind-energy/ (last visited May 21, 2018).
[5] U.S. DEPT. OF ENERGY, 2015 WIND TECHNOLOGIES MARKET REPORT v (Aug. 2016).
[6] *Id.*
[7] *Id.* at 8, 19.
[8] ENVTL. AND ENERGY STUDY INST., OFFSHORE WIND FACT SHEET 1 (Jan. 2016).
[9] *Offshore Wind Energy*, BUREAU OF OCEAN ENERGY MGMT., http://www.boem.gov/Offshore-Wind-Energy/ (last visited May 21, 2018).
[10] *Offshore Wind*, *supra* note 8 at 2.
[11] *Id.*

faster, and more consistent than wind onshore, and more directly correlates with times of peak electricity demand, as the strongest offshore winds are found during the afternoon and evening, as well as during hot weather.[12] This has an exponential effect on production of electricity via wind turbine, as the potential energy produced is equal to the cube of wind speeds.[13] Additionally, with 40% of the population of the United States residing in coastal counties, offshore wind energy can be produced close to population centers, thus reducing the distance electricity would have to be transported to meet demand.[14]

Local communities, fishing and crabbing industries, environmental scientists, and other interested parties are far more skeptical of offshore wind energy development.[15] Many property owners and municipalities, such as those on Cape Cod, Martha's Vineyard and Nantucket, have voiced concerns that such offshore development will destroy their views and harm their enjoyment of the waters and shores (not to mention their property values).[16] Local communities have expressed distrust over the adequacy of their role in finding suitable locations for offshore wind projects and BOEM's system of planning to protect the marine environment and other beneficial uses of offshore waters.[17] Fishing industries "remain unsupportive of BOEM's ... leasing [of] the OCS waters" as they do not see their interests and uses being given proper consideration in the siting of projects, and wish to be given a bigger seat at the table to help find a proper allocation of the area for various productive uses.[18] Additionally, environmental scientists have called for a more in depth and complete analysis of the environmental impacts of siting wind projects offshore, asking the agency to

[12] *Id.*
[13] Wind speeds of just a few miles per hour more generate significantly more electricity. With wind speeds of 16 mph versus speeds of 14 mph, 50% more electricity will be generated. *Id.*
[14] *Id.*
[15] *See generally* ALLISON RIESER ET AL., OCEAN AND COASTAL LAW 490 (West, 4th ed. 2013); Bailey et al., *Assessing Environmental Impacts of Offshore Wind Farms: Lessons Learned and Recommendations for the Future*, 10.1 AQUATIC BIOSYSTEMS 8 (2014); SUSAN CHAMBERS, SOUTHERN OREGON OCEAN RESOURCE COALITION COMMENTS TO THE WINDFLOAT ADVISORY COMMITTEE (2015); BOB JACOBSON, FISHERMAN INVOLVED IN NATURAL ENERGY COMMENTS ON BOEM'S RENEWABLE ENERGY PROGRAM (2015); HEATHER MANN, MIDWATER TRAWLERS COOPERATIVE'S COMMENTS ON WINDFLOAT PROJECT (2015); TERRY N. THOMPSON, RE: REQUEST FOR FEEDBACK ON BOEM'S RENEWABLE ENERGY PROGRAM (2015).
[16] ALLISON RIESER ET AL., *supra* note 15 at 490.
[17] TERRY N. THOMPSON, *supra* note 15.
[18] BOB JACOBSON, *supra* note 15; *Accord* SUSAN CHAMBERS, *supra* note 15; HEATHER MANN, *supra* note 15.

take advantage of the lessons learned from development in Europe.[19] All these concerns will be further explored later in this article.

B. Overview of Offshore Wind Technology

Wind is formed via the combination of the uneven heating of the atmosphere by the sun, the hills and valleys forming the uneven surface of the earth, and the revolution of the planet around the sun.[20] Wind turbines are mounted on top of towers, generally at heights of 100 meters or more, to harness the energy of fast and laminar winds.[21] Turbines use propeller-like blades to catch the wind's energy in a process similar to an airplane's wing.[22] These blades are mounted on a shaft to form a rotor.[23] As the wind moves across the blade, a pocket of low-pressure air forms on one side of the blade and pulls that blade toward the pocket, creating lift.[24] The lift is much stronger than the drag created by the force of the wind on the front side of the blade, and the combination of these forces causes the rotor to turn.[25] The rotor is connected to a series of gears to increase the rotation, allowing for the generation of AC electricity.[26] The key components of the turbine are housed in a streamlined enclosure called the nacelle, some of which are large enough to land a helicopter on.[27]

Commercial-scale offshore wind turbines are much the same as their onshore counterparts, with some modifications to prevent corrosion from the salt-water laden air and to protect their foundations from the harsh ocean environment.[28] Currently, engineers are constantly working on new technologies to be able to place turbines farther offshore, as 90% of offshore wind energy resource lies beyond the depths current technology can utilize.[29] In shallow depths, a single pile can be driven into the seabed to support the tower.[30] In

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[19] Bailey et al., *supra* note 16.
[20] *Wind Energy Technology Basics*, U.S. DEPT. OF ENERGY, https://www.energy.gov/eere/wind/wind-energy-basics (last visited May 24, 2018).
[21] *Wind Energy Basics*, *supra* note 3.
[22] *How a Wind Turbine Works*, U.S. DEPT. OF ENERGY (June 20, 2014, 9:09 AM), http://energy.gov/articles/how-wind-turbine-works (last visited May 24, 2018).
[23] *Id.*
[24] *Id.*
[25] *Id.*
[26] *Id.*
[27] *Id.*
[28] ENVTL. AND ENERGY STUDY INST., *supra* note 8.
[29] *Id.*
[30] *Id.*

intermediate depths, support structures made of multiple piles can be constructed, similar to terrestrial supports for high voltage power lines.[31] For deep water, teams of scientists, engineers, and industry professionals are designing various forms of floating platforms and anchoring systems to support the towers and nacelles, taking up varying amount of offshore acreage per tower.[32]

The energy generated by these offshore turbines must be brought onshore and put onto the terrestrial power grid.[33] This is done in a three-step process.[34] First, all the energy produced by the turbines in a wind farm is collected at an electric service platform located on an offshore platform in the wind farm and connected to each tower by a high voltage cable.[35] The power is then transmitted, often via buried power cable to an onshore power substation, and then placed onto the grid for use.[36]

II. FEDERAL REGULATION OF WIND ENERGY ON THE OUTER CONTINENTAL SHELF

The regulatory structure for offshore wind energy projects was, until recently, unclear. The initial steps of the Cape Wind project (the United States' first large-scale offshore wind project) and the litigation that abounded throughout the process clarified the structure as of 2004. While the federal government had exclusive authority to permit projects on the OCS, it was unclear whether all that was necessary was a permit from the Army Corps of Engineers under Section 10 of the Rivers and Harbors Act of 1899.[37] However, this law does not authorize the Corps to grant a wind company the exclusive right to occupy and use a portion of the OCS, much less engage in any planning or critical siting process.[38] Concerned over the potential lack of regulatory processes over this new industry, those who were against the project began lobbying in Congress for more regulation.[39]

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[31] *Id.*
[32] *Id.*
[33] *Id.*
[34] *Id.*
[35] *Id.*
[36] *Id.*
[37] Ten Taxpayer Citizens Grp. v. Cape Wind Assocs., 373 F.3d 183 (2004).
[38] That act gives the Corps the authority to permit any obstruction to navigation in the navigable waters of the United States. Rivers and Harbors Act of 1899 § 10, 3 U.S.C. § 403 (1899).
[39] ALLISON RIESER ET AL., *supra* note 16 at 510.

In 2005, Congress passed the Energy Policy Act of 2005 (EPAct 2005).[40] Section 388 of EPAct 2005 authorized BOEM[41] to issue leases, easements and rights of way on the OCS for renewable energy projects.[42] Section 388 amended Section 8 of the Outer Continental Shelf Lands Act (OCSLA)[43] to provide a framework for these actions mirroring the oil and gas leasing process on the OCS. BOEM manages its wind energy program in four stages borrowed directly from the oil and gas program.[44] First, BOEM operates within the Planning and Analysis phase, either issuing a Call for Information or Nomination for potential lease sites or processing unsolicited requests for lease sites.[45] During this phase, BOEM may choose to complete an Environmental Assessment (EA) under NEPA for any site assessment activities, as well as the issuance of the lease itself.[46] In the second phase, Leasing, BOEM issues a Request for Competitive Interest for the area being proposed for leasing to see if any competitive interest exists.[47] If such an interest exists, BOEM will notify developers and the public at large of its intent to lease before holding a lease sale.[48] BOEM will then choose the best financial bid from a qualified bidder.[49] If no competitive interest exists, then the agency will negotiate a lease with the single interested party.[50]

At this point, BOEM moves onto the third phase of the process, the Site Assessment phase. In this phase, the lessee will submit a Site Assessment Plan

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[40] Energy Policy Act of 2005, Pub. L. No. 114-38, 119 Stat. 594.
[41] EPAct 2005 originally delegated the authority to the Minerals Management Service (MMS). However, MMS was reorganized in 2010 and 2011, delegating MMS's responsibilities to three independent agencies. BOEM emerged as the manager of the nation's offshore resources. *The Reorganization of the Former MMS*, BUREAU OF OCEAN ENERGY MGMT., https://www.boem.gov/About-BOEM/Reorganization/Reorganization.aspx. (last visited May 21, 2018). For clarity, this article will refer to BOEM exclusively, regardless of the agency name at the time of the event.
[42] EPAct 2005 authorizes BOEM to issue leases, easements and rights-of-way for any uses that "produce or support production, transportation, or transmission of energy." Energy Policy Act of 2005 § 388, 43 U.S.C. § 1337.
[43] Outer Continental Shelf Lands Act, 43 U.S.C. § 1337.
[44] *Id.*
[45] BUREAU OF OCEAN ENERGY MGMT., WIND ENERGY COMMERCIAL LEASING PROCESS FACT SHEET 1 (Sept. 15, 2015), https://www.boem.gov/Commercial-Leasing-Process-Fact-Sheet/ (last visited May 21, 2018).
[46] *Id.*
[47] *Id.*
[48] *Id.*
[49] Kenneth Kimmel & Dawn S. Stalenhoef, *The Cape Wind Offshore Wind Energy Project: A Case Study of the Difficult Transition to Renewable Energy*, 5 GOLDEN GATE U. ENVTL. L.J. 197, 215
[50] BUREAU OF OCEAN ENERGY MGMT, *supra* note 45.

(SAP), which is a detailed description of how the leaseholder would like to gather data regarding the site, usually in the form of a meteorological tower.[51] BOEM must approve this plan before any assessment can take place, and will conduct both environmental and technical reviews of the plan.[52] The agency may conclude that it will either approve, approve with modifications, or deny a submitted SAP.[53] After the lessee has conducted its assessment, it may choose to submit a Construction and Operations Plan (COP), pushing the process into phase four, the Construction and Operations phase.[54] Aptly named, the COP is a detailed plan for the construction and operation of a wind farm at the lease site.[55] Similar to the process in the third phase, BOEM will conduct environmental and technical review of the COP before deciding to approve, approve with modifications, or disapprove the submitted COP.[56] After approval, the lessee can finally begin construction of its project, though it must submit a plan for the decommissioning of its project before its lease expires.[57]

As of 2011, there is an additional way for the leasing process to begin the Planning and Analysis phase. In 2010 Secretary of the Interior Ken Salazar announced a wind energy initiative for the Atlantic OCS designed to streamline and accelerate the leasing process that he dubbed "Smart from the Start."[58] Dismayed by the many challenges and legal battles that arose out of the Cape Wind project, DOI wanted to "implement a smart permitting process that is efficient, thorough, and unburdened by needless red tape."[59] DOI created the Smart from the Start process to:

(1) identify lowest conflict, highest potential areas;

(2) improve coordination with state and local taskforces;

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[51] *Id.*
[52] *Id.*
[53] *Id.*
[54] *Id.*
[55] *Id.* at 2.
[56] *Id.*
[57] *Id.*
[58] Press Release, Office of the Secretary, Salazar Launches 'Smart from the Start' Initiative to Speed Offshore Wind Energy Development off the Atlantic Coast (Nov. 23, 2010), https://www.doi.gov/news/pressreleases/Salazar-Launches-Smart-from-the-Start-Initiative-to-Speed-Offshore-Wind-Energy-Development-off-the-Atlantic-Coast (last visited May 24, 2018).
[59] *Id.*

(3) reduce and combine processes so as to encourage and streamline development; and

(4) create more certainty for the public and industry.[60]

The Smart from the Start program identifies priority Wind Energy Areas (WEAs) on the east coast of the United States,[61] encouraging development of over 2,434 square miles of continental shelf to take advantage of the more than 1,000 GW of wind power off that coast.[62] To accomplish this, DOI worked with state partners to "identif[y] areas with generally bountiful wind energy and relatively fewer potential environmental and use conflicts than other offshore areas."[63] Additionally, BOEM will help develop site assessment data, compile existing site assessment data from various agencies, and evaluate potential WEA leases.[64] BOEM will also "aggressively" process applications to build offshore energy transmission lines to ensure the ability to bring the power generated by these expedited projects onto the grid.[65]

Initially, BOEM identified five WEAs off the coasts of New Jersey, Virginia, Rhode Island, and Massachusetts.[66] These five areas totaled over 676,174 acres of the OCS.[67] Acreage in all five areas has since been leased to companies to begin assessment for wind energy projects.[68] However, none of

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[60] NED FARQUHAR, "SMART FROM THE START": BRINGING ATLANTIC OFFSHORE WIND TO MARKET (2011), https://www.boem.gov/uploadedFiles/BOEM/Renewable_Energy_Program/State_Activities/DOIInitiatives032411.pdf (last visited May 21, 2018).

[61] Maps of these areas can be found in Appendix I.

[62] Peter Brannon, *Offshore Wind Farms Will Be Encouraged in Tracts Along the East Coast*, WASH. POST (July 23, 2012), https://www.washingtonpost.com/national/health-science/offshore-wind-farms-will-be-encouraged-in-tracts-along-the-east-coast/2012/07/23/gJQAD2Pu4W_story.html (last visited May 24, 2018).

[63] Press Release, *supra* note 58.

[64] *Id.*

[65] *Id.*

[66] *Id.*

[67] BUREAU OF OCEAN ENERGY MGMT., COMMERCIAL WIND LEASE ISSUANCE AND SITE ASSESSMENT ACTIVITIES ON THE ATLANTIC OUTER CONTINENTAL SHELF OFFSHORE NEW JERSEY, DELAWARE, MARYLAND, AND VIRGINIA FINAL ENVIRONMENTAL ASSESSMENT iv-v (Jan. 2012).

[68] *See Commercial Wind Lease for the Wind Energy Area Offshore Rhode Island and Massachusetts,* BUREAU OF OCEAN ENERGY MGMT., https://www.boem.gov/Commercial-Wind-Lease-Rhode-Island-and-Massachusetts/ (last visited May 21, 2018) [hereinafter *Lease site for Rhode Island and Massachusetts*]; *Commercial Wind Leasing Offshore New Jersey,* BUREAU OF OCEAN ENERGY MGMT., https://www.boem.gov/Commercial-Wind-Leasing-Offshore-New-Jersey/ (last visited May 21, 2018) [hereinafter *Lease site for New Jersey*]; *Commercial Lease for*

these projects have passed the site assessment stage.[69] Recently, DOI announced that it had identified a new WEA off of New York.[70] The area identified was based on an unsolicited lease application that BOEM had received in 2011 from the New York Power Authority, which wanted to construct a wind facility off Long Island totaling between 350 and 700 MW.[71] Fourteen companies qualified to bid on the 79,350 acres[72] that started 11.5 nautical miles from New York's shores, and the process has moved along quickly.[73]

III. CRITIQUES OF BOEM'S CURRENT OFFSHORE WIND LEASING PROCESS

BOEM's current offshore wind leasing policy and process is problematic on multiple levels. First and foremost, BOEM arguably is not fulfilling its legal obligations under NEPA, particularly in its recent practice of delaying many environmental considerations until a later stage in the development process. Second, BOEM's offshore wind siting process is unwise when considering the practical and moral consequences of its actions. BOEM's actions are highly suspect when taking into account marine spatial planning[74] concerns. Additionally, BOEM's offshore wind siting process implicates environmental justice[75] concerns that may not be readily apparent. In sum, these deficiencies

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Wind Energy Offshore Virginia, BUREAU OF OCEAN ENERGY MGMT., https://www.boem.gov/Renewable-Energy-Program/Commercial-Lease-Offshore-VA/ (last visited May 21, 2018) [hereinafter *Lease site for Virginia*].

[69] *Lease site for Rhode Island and Massachusetts*, *supra* note 68; *Lease site for New Jersey, supra* note 68; *Lease site for Virginia, supra* note 68.

[70] Press Release, Office of the Secretary, Interior Department to Auction Over 79,000 Acres Offshore New York for Wind Energy Development (Oct. 27, 2016), https://www.doi.gov/pressreleases/interior-department-auction-over-79000-acres-offshore-new-york-wind-energy-development?utm_source=Revised+NY+FSN+and+NOA+10272016&utm_campaign=BOEM+New+York+Renewable+Energy&utm_medium=email (last visited May 24, 2018).

[71] *Announcement of Area Identification*, BUREAU OF OCEAN ENERGY MGMT. 1, https://www.boem.gov/NY-Area-ID-Announcement/ (last visited May 24, 2018).

[72] A map of the lease area can be found in Appendix II.

[73] *Announcement of Area Identification*, *supra* note 71.

[74] Marine spatial planning refers to "a process developed from the bottom up to improve collaboration and coordination among all coastal and ocean interests, and to better inform and guide decision-making that affects their economic, environmental, security, and social and cultural interests." *Coastal and Marine Spatial Planning*, NAT'L OCEANIC AND ATMOSPHERIC ADMIN., https://cmsp.noaa.gov/ (last visited May 24, 2018). This will be discussed in further detail later in this article.

[75] Environmental justice, while not having a standardized definition, is "widely understood to be concerned, at the least, with distributional and procedural equity in environmental and natural

equate to a dire need to overhaul BOEM's leasing and siting programs for offshore wind energy, placing a greater emphasis on collaboration with local communities and other ocean users.

A. BOEM's Legal Obligations under the National Environmental Policy Act

BOEM arguably is not fulfilling its required environmental evaluations under NEPA when siting and leasing offshore wind energy projects. NEPA has been described as an "environmental Magna Carta" and has influenced federal decision making ever since its enactment in 1969.[76] Prior to the passage of NEPA, there was no standardized process for considering the environmental consequences of governmental action, and most legislation did not have an environmental evaluation component.[77] Pressured by the growing environmental concerns in the general population, Congress recognized the need for more uniform and thorough evaluation of environmental concerns:

> Alteration and use of the environment must be planned and controlled rather than left to arbitrary decision. Technological development, introduction of new factors affecting the environment, and modifications of the landscape must be planned to maintain the diversity of plants and animals. Furthermore, such activities should proceed only after an ecological analysis and projection of probable effects. Irreversible or difficult reversible changes should be accepted only after the most thorough study.[78]

This outline of precautionary advancement would evolve to become the procedural mandate at the heart of NEPA in Section 102 of the statute.[79] The requirements of Section 102 are quite brief, mandating that for "major Federal actions significantly affecting the quality of the human environment," a "detailed statement be prepared by the responsible official" on the environmental effects of

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resource decisions." Sheila Foster, *Environmental Justice in an Era of Devolved Collaboration*, 26 HARV. ENVTL. L. REV. 459, 461 (2002). This will be discussed in further detail later in this article.

[76] DANIEL R. MANDEL ET AL., NEPA LAW AND LITIGATION § 1.1 (West, 2nd ed. 2016).

[77] *Id.* at § 1.2.

[78] STAFFS OF SENATE COMM. ON INTERIOR & INSULAR AFFAIRS & HOUSE COMM. ON SCIENCE & ASTRONAUTICS, CONGRESSIONAL WHITE PAPER ON A NATIONAL POLICY FOR THE ENVIRONMENT, 90TH CONG., 2D SESS. 18 (Comm. Print 1968).

[79] National Environmental Policy Act of 1969 § 102, 42 U.S.C. § 4332.

the federal action and of any reasonable and prudent alternatives being considered.[80]

While this statement is not the clearest of mandates, more descriptive regulations were promulgated by the Council on Environmental Quality (CEQ),[81] an agency created by NEPA.[82] These regulations work to form a three-tiered system of environmental evaluation for certain federal actions.[83] The first tier of this system allows agencies to designate certain actions as categorical exclusions (CEs) which are exempt from further NEPA review and do not trigger an environmental analysis.[84] These actions are those that "do not individually or cumulatively have a significant effect on the human environment,"[85] and are detailed in advance by NEPA procedures adopted by an agency.[86] NEPA requires that CEs consider any extraordinary circumstances for each use that may result in a normally excluded action having a significant effect on the environment, thus requiring a more in depth environmental analysis.[87] Extraordinary circumstances, such as endangered species impacts or impacts on a cultural resource, must be enumerated and explicitly considered. It should be noted that the siting and permitting of offshore wind energy projects does not fall into the purview of a CE.

If an action is likely to significantly affect the environment, the acting agency must prepare an environmental assessment (EA) or an environmental impact statement (EIS), depending on the extent of the impacts.[88] An EA is supposed to be a brief document that "provide[s] sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact."[89] An EA must include a brief discussion demonstrating the agency's consideration of the need and purpose of the action, any reasonable alternatives to the action, and direct and indirect effects of an

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[80] *Id.* § 4332(C).
[81] *See* Dinah Bear, *NEPA at 19: A Primer on an "Old" Law With Solutions to New Problems*, 19 ENVTL. L. REP. 10060, 10061 (1989).
[82] Section 202 of NEPA, 42 U.S.C. § 4342.
[83] 40 C.F.R. § 1500.
[84] *Id.* § 1508.4.
[85] *Id.*
[86] *National Environmental Policy Act Review Process*, ENVTL. PROT. AGENCY, https://www.epa.gov/nepa/national-environmental-policy-act-review-process (last visited May 21, 2018).
[87] 40 C.F.R. § 1508.4.
[88] *Id.* § 1508.9.
[89] *Id.*

agency action.[90] Upon completion, the agency will determine whether an EIS must be prepared, and if not, may issue a Finding of No Significant Impact (FONSI) and conclude its NEPA review.[91] Notably, EAs require less public notice and comment than EISs.

An EIS forms the most rigorous of evaluations within NEPA. The preparation of an EIS begins with the publication of a Notice of Intent in the Federal Register to inform the public that the agency will be conducting a thorough environmental evaluation pertaining to that specific action and describe how they can become part of that process.[92] The agency, the public, and interested parties now enter the "scoping period," where they will work to identify the issues that will need to be addressed in the EIS.[93] The agency will then draft a document called the Purpose and Need statement that describes the rationale of the proposed actions, which will affect the various alternative actions the agency will have to consider when drafting the EIS.[94] In its alternatives analysis, the agency is required to consider the action it wishes to take (the preferred alternative), the "no action" alternative (what would result if the agency did nothing), and any reasonable and prudent alternatives that would satisfy the goal of the project.[95]

When the draft is completed, the agency must publish the document for public review and comment for a minimum of 45 days.[96] After this period, the agency considers the comments from the public and other agencies, and prepares its final EIS, addressing those comments.[97] The Environmental Protection Agency (EPA) publishes a Notice of Availability in the Federal Register once the EIS is published. After a 30-day review period, the agency makes a decision on the proposed action and issues a Record of Decision (ROD), which is the final agency action under NEPA.[98] The ROD details the agency's decision by reviewing the alternatives it considered, describing why it chose the alternative it did, and putting forth any mitigation measures it may adopt to lessen any adverse environmental impacts that may result from the chosen action.[99]

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[90] *Id.*
[91] *Id.*
[92] *Id.*
[93] *Id.*
[94] *Id.*
[95] 40 C.F.R. § 1508.25.
[96] EPA will publish a Notice of Availability in the Federal Register to alert the public of the Document's availability. ENVTL. PROT. AGENCY, *supra* note 86.
[97] *Id.*
[98] *Id.*
[99] *Id.*

BOEM is currently attempting to fulfill its NEPA requirement for offshore WEAs[100] by preparing EAs at the time BOEM identifies each large area as suitable for wind development, and then either preparing additional EAs for individual projects or proceeding with lease sales with no further environmental evaluation. With the exception of the Cape Wind project, BOEM has never prepared an EIS at a WEA level, much less a project-specific level.[101] BOEM relies entirely on a 2007 programmatic EIS for alternative energy development and production and alternative use of facilities on the OCS.[102]

CEQ regulations label such reference to prior documentation as tiering. Tiering is appropriate for situations where a broader initial EIS is prepared for a program and subsequent environmental review documents are prepared for specific later action(s).[103] Such subsequent statements "need only summarize the issues discussed in the broader statement and incorporate discussions from the broader statement by reference and shall concentrate on the issues specific to the subsequent action."[104] However, CEQ guidance on using programmatic EISs states, "[where] subsequent actions remain to be analyzed and decided upon, that [analysis] would be explained in the programmatic document and left to a subsequent tiered NEPA review."[105] The NEPA regulations describe under what sequence such tiering would be appropriate:

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[100] *See* Appendices I and II.

[101] *See Commercial Wind Lease for the Wind Energy Area Offshore Rhode Island and Massachusetts,* BUREAU OF OCEAN ENERGY MGMT., https://www.boem.gov/Commercial-Wind-Lease-Rhode-Island-and-Massachusetts/ (last visited May 21, 2018); *Commercial Wind Leasing Offshore New Jersey,* BUREAU OF OCEAN ENERGY MGMT., https://www.boem.gov/Commercial-Wind-Leasing-Offshore-New-Jersey/ (last visited May 21, 2018); *Commercial Lease for Wind Energy Offshore Virginia,* BUREAU OF OCEAN ENERGY MGMT., https://www.boem.gov/Renewable-Energy-Program/Commercial-Lease-Offshore-VA/ (last visited May 21, 2018); *Commercial Wind Leasing Offshore Massachusetts*, BUREAU OF OCEAN ENERGY MGMT., https://www.boem.gov/Commercial-Wind-Leasing-Offshore-Massachusetts/ (last visited May 21, 2018); *Maryland Activities*, BUREAU OF OCEAN ENERGY MGMT., https://www.boem.gov/State-Activities-Maryland/ (last visited May 21, 2018).

[102] BUREAU OF OCEAN ENERGY MGMT., PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT FOR ALTERNATIVE ENERGY DEVELOPMENT AND PRODUCTION AND ALTERNATIVE USE OF FACILITIES ON THE OUTER CONTINENTAL SHELF (Oct. 2007).

[103] 40 C.F.R § 1502.20.

[104] *Id.*

[105] COUNCIL ON ENVIRONMENTAL QUALITY, MEMORANDUM FOR HEADS OF FEDERAL DEPARTMENTS AND AGENCIES, SUBJECT: EFFECTIVE USE OF PROGRAMMATIC NEPA REVIEWS 15 (2014).

> (a) From a program, plan, or policy environmental impact statement to a program, plan, or policy statement or analysis of lesser scope or to a site-specific statement or analysis.
>
> (b) From an environmental impact statement on a specific action at an early stage (such as need and site selection) to a supplement (which is preferred) or a subsequent statement or analysis at a later stage (such as environmental mitigation). Tiering in such cases is appropriate when it helps the lead agency to focus on the issues which are ripe for decision and exclude from consideration issues already decided or not yet ripe.[106]

Thus, an agency that creates a broad-scale, programmatic EIS need only prepare an EA for each specific site, if anything at all.

BOEM relies on the first of these two scenarios to justify its system of environmental analysis. Its reliance is premised on a single principle: that because of the four-stage system of permitting an offshore wind energy project, BOEM need not consider any effects, whether direct, indirect, or cumulative, of the actual *building or operation* of any project in the environmental analysis done before leasing any of the OCS.[107] BOEM reasons that because no construction or operation of a project can occur prior to issuing a Constructions and Operations Permit, and because it will have to do further NEPA analyses before it can issue such a permit, none of these activities must be considered until this point.[108]

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[106] 40 C.F.R. § 1508.28.

[107] *See* BUREAU OF OCEAN ENERGY MANAGEMENT, COMMERCIAL WIND LEASE ISSUANCE AND SITE ASSESSMENT ACTIVITIES ON THE ATLANTIC OUTER CONTINENTAL SHELF OFFSHORE NEW JERSEY, DELAWARE, MARYLAND, AND VIRGINIA: FINAL ENVIRONMENTAL ASSESSMENT (2012) [hereinafter ATLANTIC WEAS FEA]; BUREAU OF OCEAN ENERGY MANAGEMENT, COMMERCIAL WIND LEASE ISSUANCE AND SITE ASSESSMENT ACTIVITIES ON THE ATLANTIC OUTER CONTINENTAL SHELF OFFSHORE RHODE ISLAND AND MASSACHUSETTS: ENVIRONMENTAL ASSESSMENT (2012) [hereinafter RHODE ISLAND AND MASSACHUSETTS EA]; BUREAU OF OCEAN ENERGY MANAGEMENT, COMMERCIAL WIND LEASE ISSUANCE AND SITE ASSESSMENT ACTIVITIES ON THE ATLANTIC OUTER CONTINENTAL SHELF OFFSHORE MASSACHUSETTS: ENVIRONMENTAL ASSESSMENT (2012) [hereinafter MASSACHUSETTS EA]; BUREAU OF OCEAN ENERGY MANAGEMENT, COMMERCIAL WIND LEASE ISSUANCE AND SITE ASSESSMENT ACTIVITIES ON THE ATLANTIC OUTER CONTINENTAL SHELF OFFSHORE NEW YORK: REVISED ENVIRONMENTAL ASSESSMENT (2012) [hereinafter NEW YORK EA].

[108] *See* ATLANTIC WEAS FEA, *supra* note 107; RHODE ISLAND AND MASSACHUSETTS EA, *supra* note 107; MASSACHUSETTS EA, *supra* note 107; NEW YORK EA, *supra* note 107.

Therefore, each EA considers only the impacts and alternatives of selling the lease and the cumulative effects of leasing these areas, and nothing more.[109]

This position is untenable, and has been declared to be too deficient to fulfill BOEM's requirements under NEPA by the U.S. Court of Appeals for the District of Columbia Circuit.[110] In *Public Employees for Environmental Responsibility v. Hooper*, a group of environmental organizations and concerned local citizen groups sued BOEM over the Cape Wind project, located off Massachusetts.[111] The plaintiffs claimed, among other things, that the agency had violated NEPA by failing to adequately consider seafloor and subsurface hazards in the Nantucket Sound.[112] The court noted that NEPA requires that agencies "consider every significant aspect of the environmental impact of a proposed action."[113] Specifically, "[a]gencies must take a 'hard look' at the environmental effects of a major federal action '*and consequences of that action*.'"[114] BOEM defended its actions by relying on the fact that it was only looking at the effects of issuing the lease and not the actual construction and operation of the wind farm, stating that further analysis would be required later on.[115]

The court found that BOEM's stance on this was indefensible, stating that the environmental analysis must go further than merely considering the effects of issuing the lease and "consider the predictable consequences of that decision."[116] The court further noted that nothing in NEPA gave an agency the ability to "slice and dice proposals" in the manner in which BOEM was doing.[117] Acknowledging that while there were undoubtedly situations where a statement could require ongoing monitoring in order to gather more data, this "did not excuse the Bureau from its NEPA obligation . . . ," and the court held that BOEM had violated NEPA.[118]

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[109] *See* ATLANTIC WEAS FEA, *supra* note 107; RHODE ISLAND AND MASSACHUSETTS EA, *supra* note 107; MASSACHUSETTS EA, *supra* note 107; NEW YORK EA, *supra* note 107.
[110] Pub. Emps. for Envtl. Responsibility v. Hopper, 827 F.3d 1077, 1083 (D.C. Cir. 2016).
[111] *Id.* at 1081.
[112] *Id.*
[113] *Id.* (quoting Balt. Gas and Elec. Co. v. Natural Res. Def. Council, 462 U.S. 87, 97 (1983)).
[114] *Id.* at 1083. (quoting Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 352 (1989)) (emphasis in original).
[115] *Id.*
[116] *Id.*
[117] *Id.*
[118] *Id.* at 1083-84.

This decision almost certainly invalidates BOEM's current practice of limiting its considerations of environmental effects and alternatives to the actual sale of a lease and (usually) the subsequent site assessment activities. BOEM consistently parrots the same justification for this practice: that because all that is explicitly being done by BOEM at this stage is issuing a lease and approving site assessment activities, and because it will later have to approve a Construction and Operation Plan, BOEM need not consider the effects or alternatives to anything other than selling a lease or allowing site assessment activities. This is exactly the logic BOEM attempted to rely on to defend the NEPA claims in *Public Employees*, claiming that seafloor and subsurface hazards were considered to an appropriate degree for the current stage, and that it would be able to look at other impacts more closely at a later stage.

The court roundly rejected this logic in *Public Employees*'s rather narrow application to seafloor and subsurface hazards, and there is no logical basis that this reasoning should not be extended to BOEM's general practices. As the court correctly notes, the agency must consider the probable and predictable consequences of the considered action, which unarguably includes the *actual construction and operation* of the project. The court in *Public Employees* stated it perfectly: "NEPA does not allow agencies to slice and dice proposals in this way."[119] Given the extreme investment of money, time, and resources by a company to purchase an offshore lease and assess the resource, it is highly predictable that the company will attempt to construct and operate a wind project, *and* that BOEM will be predisposed to find a way to allow them to do so. Therefore, BOEM is required under NEPA to consider the environmental effects of the actual construction and operation of wind project in its EA or EIS, not just the selling of the lease and subsequent site assessment activities. To do anything else would "slice and dice" its requirements in violation of NEPA.

B. Practical and Moral Concerns with BOEM's Current Leasing Program

Regardless of whether BOEM's leasing program's structure technically offends NEPA's legal requirements, its current implementation poses multiple concerns on a practical and moral level. BOEM's current program is troubling when taking into consideration marine spatial planning concerns, as the United States will continually see an increase in conflicts between beneficial uses offshore. Additionally, BOEM, having learned from the Cape Wind saga, is

[119] *Id.*

currently implementing its siting process in such a way that seems to disproportionately target an insular and relatively poor minority, resulting in environmental justice concerns. These concerns alone justify a change in BOEM's practices to create a sustainable and equitable future.[120]

i. Marine Spatial Planning Concerns Necessitate a Change in BOEM's Current Practices

BOEM has largely ignored major concerns implicated by the ideas of marine spatial planning in its siting of offshore wind energy projects, particularly when it comes to concerns other than those of national security or international shipping.[121] Marine spatial planning refers to the relatively recent push to apply planning principles to allocate parts of the ocean among users on a large scale, as described by the United Nations Educational, Scientific, and Cultural Organization:

> Marine spatial planning is a public process of analyzing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic, and social objectives that usually have been specified through a political process. Characteristics of marine spatial planning include ecosystem-based, area-based, integrated, adaptive, strategic and participatory.
>
> Marine spatial planning is not an end in itself, but a practical way to create and establish a more rational use of marine space and the interactions among its uses, to balance demands for development with the need to protect the environment, and to deliver social and economic outcomes in an open and planned way.[122]

[120] While a discussion of these concerns could form the basis of an entire article in their own right, this article will attempt to discuss them in an adequate depth to provide a basis for the general problems they implicate so as to further inform the reader.
[121] *See generally* ATLANTIC WEAS FEA, *supra* note 107; RHODE ISLAND AND MASSACHUSETTS EA, *supra* note 107; MASSACHUSETTS EA, *supra* note 107; NEW YORK EA, *supra* note 107.
[122] *Why Marine Spatial Planning*?, UNITED NATIONS EDUCATIONAL, SCIENTIFIC, AND CULTURAL ORGANIZATION, http://msp.ioc-unesco.org/about/ (last visited May 21, 2018).

Recently in the United States, we have seen an increase in interest in developing offshore wind resources by the federal government.[123] Despite this increase in offshore leasing for these purposes, BOEM has not adequately considered the largest use conflict implicated by its wide scale leasing: fishing. To properly apply the values of marine spatial planning, which is something BOEM has committed itself to,[124] the Bureau must adequately take into account all the various uses of the offshore, including fishing, and work with that stakeholder group to rationally apportion offshore uses.

Commercial and recreational fishing form a major use of the ocean in our society and economy.[125] According to a report published by the National Oceanic and Atmospheric Administration, commercial and recreational saltwater fishing generated $199 billion in sales and supported 1.7 million jobs in 2011.[126] Additionally, the average American diet contained 15.5 pounds annually of fish and shellfish in 2015, up nearly a pound from the year before.[127] This resource is also viewed as a prime source for recreation for much of America's citizenry.[128] In 2015, 8.9 million people took nearly sixty-one million recreational fishing trips in the United States, and that does not include any data from Alaska.[129]

In the past, these fishing communities have felt ignored by BOEM in this process, and rightly so. In the process of creating the Cape Wind project, fishermen and local community members had to form their own action group, Save Our Sound, to try and have their voices heard.[130] Robert F. Kennedy Jr., one of the group's leaders, noted in an opinion piece for the New York Times that hundreds of fishermen gain more than half their annual income from fish caught at the location of the Cape Wind Project.[131] This view was reiterated by the many

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[123] *See generally* U.S. DEPT. OF ENERGY, *supra* note 5; Brannon, *supra* note 62 ; FARQUHAR *supra* note 60.
[124] *National Ocean Policy*, BUREAU OF OCEAN ENERGY MGMT., https://www.boem.gov/NOP/. (last visited May 21, 2018).
[125] NAT'L OCEANIC AND ATMOSPHERIC ADMIN., FISHERIES ECONOMICS OF THE UNITED STATES 2011 11-15 (2011).
[126] *Id.*
[127] *Id.* at 105.
[128] *Id.* at 31.
[129] *Id.*
[130] *Our Mission,* SAVE OUR SOUND, http://saveoursound.org/alliance-protect-nantucket-sound-mission/ (last visited May 21, 2018).
[131] Robert F. Kennedy Jr., *An Ill Wind Off Cape Cod*, N.Y.TIMES (Dec. 16, 2005), http://www.nytimes.com/2005/12/16/opinion/an-ill-wind-off-cape-cod.html (last visited May 24, 2018).

local community members who showed up to local hearings held by BOEM on its EIS for the project.[132] When a similar project was proposed off the coast of Oregon, fishing groups uniformly lamented the poor placement of the proposed project, as once again, the project seemed to be sited in fertile fishing ground when other suitable sites were available.[133] All the various fishing industry groups gave the same complaint: the proposed project had been sited in some of their most productive fishing grounds, and had they been properly engaged in the process, this conflict could have been avoided.[134]

BOEM's most recent project siting offshore of New York further illustrates this same concern. The eleven-mile long project lay between two shipping lanes where more than $3.3 million worth of sea scallops were harvested every year, as well as mackerels, squid, and other species.[135] While a portion of the lease that was originally proposed was removed due to environmental concerns,[136] the concerns of many fishermen were not addressed: the proposed site significantly impacted many of their fishing grounds.[137] In response, BOEM merely required as part of the lease that the leaseholder set up a Fisheries Communication Plan that describes strategies to communicate with fishing stakeholders and designate a liaison to those stakeholders.[138] Nothing in the lease or EA actually requires any action by the lessee to address the concerns of the fishermen or attempt to justify why it is practically ignoring their concerns.[139] While BOEM could have worked with the fishermen to address their concerns and alter the lease site or work out mitigation measures, the Bureau has instead decided to attempt to placate the fishing concerns with a nominal, but ultimately meaningless, seat at the table with the lessee.

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[132] Mike Seccombe. *Fishing Concerns Dominate Cape Wind Hearing*, VINEYARD GAZETTE (Mar. 13, 2008), https://vineyardgazette.com/news/2008/03/14/fishing-concerns-dominate-cape-wind-hearing (last visited May 24, 2018).
[133] *See* SUSAN CHAMBERS, *supra* note 15; BOB JACOBSON, *supra* note 15; HEATHER MANN, *supra* note 15; TERRY N. THOMPSON, *supra* note 15.
[134] *Id.*
[135] Frank Eltman, *Fishermen Worry about Plan for Wind Farm off New York Coast*, ASSOC. PRESS (June 18, 2016), http://bigstory.ap.org/article/a1995f74bd5449a3bc8b9f13c2813c31/fishermen-worry-about-plan-wind-farm-new-york-coast (last visited May 24, 2018).
[136] NY EA, *supra* note 107, at §§ 2, 2.1.
[137] BUREAU OF OCEAN ENERGY MGMT., FISHERMEN WORKSHOPS: PROVIDING INPUT INTO BOEM'S IDENTIFICATION OF AN OFFSHORE WIND ENERGY AREA OFFSHORE NEW YORK 7-10 (2015).
[138] BUREAU OF OCEAN ENERGY MGMT., COMMERCIAL LEASE OF SUBMERGED LANDS FOR RENEWABLE ENERGY DEVELOPMENT ON THE OUTER CONTINENTAL SHELF C-8 (2016).
[139] *See id.*; NEW YORK EA, *supra* note 107.

ii. BOEM's Current Practices Disproportionately Affect Fishing Communities Implicating Environmental Justice Concerns.

BOEM's current leasing and siting practices have disproportionate negative impacts on fishing communities, thus implicating environmental justice concerns that necessitate an additional need for BOEM to change its practices. Environmental justice, while not having a standardized definition, is "widely understood to be concerned, at the least, with distributional and procedural equity in environmental and natural resource decisions."[140] Concerns over environmental justice are part of the conversation over environmental issues, particularly in contexts such as this where environmental action is being discussed.[141] Ever since a 1994 executive order, federal agencies must identify and address disproportionately high impacts on minority populations resulting from federal actions.[142] The order states that "no group of people, including . . . socioeconomic group[s] should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal . . . programs and policies."[143]

Here, BOEM's current leasing and siting practices irrefutably impact fishing communities at a disproportionate level compared to any other group. By siting these contentious projects offshore away from populated communities, BOEM avoids conflicts and complaints from a much larger cross-section of the population. Having learned its lesson from the prolonged litigation over the Cape Wind project, every subsequent lease sale has been for offshore segments located nearly twice as far away from the coast, thus lessening the chances of pushback from wealthy homeowners in coastal towns.[144] Therefore, instead of the Bureau

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[140] Sheila Foster, *Environmental Justice in an Era of Devolved Collaboration*, 26 HARV. ENVTL. L. REV. 459, 461 (2002).
[141] *See generally* Jeanne Marie Zokovitch Paben, *Green Power and Environmental Justice – Does Green Discriminate?*, 46 TEX. TECH L. REV. 1067 (2014); Symposium, *Whose Survival? Environmental Justice as a Civil Rights Issue*, 13 N.Y. CITY L. REV. 257 (2010).
[142] Exec. Order No. 12,898, 49 Fed. Reg. 7629 (Feb. 11, 1994).
[143] *Id.*
[144] *Compare* BUREAU OF OCEAN ENERGY MGMT., MASSACHUSETTS LEASE AREA, https://www.boem.gov/Massachusetts-Lease-Areas/, *with* BUREAU OF OCEAN ENERGY MGMT., NORTH AND SOUTH LEASE AREAS WITHIN THE RHODE ISLAND AND MASSACHUSETTS WIND ENERGY AREAS, https://www.boem.gov/uploadedFiles/BOEM/Renewable_Energy_Program/State_Activities/Map%20of%20the%20Rhode%20Island%20and%20Massachusetts%20Lease%20Areas.pdf, BUREAU OF OCEAN ENERGY MGMT., VIRGINIA COMMERCIAL LEASE AREA, https://www.boem.gov/Map-of-

having to fight millionaire landowners worried about their views and property values, BOEM is primarily opposed by commercial fisherman, who have an average annual salary of $27,340.[145] This is a population that is generally small, poor, and oft ignored, despite the vast benefits they provide.[146] While in the context of offshore energy development it is obviously impossible to not have an effect on fisherman by the nature of desired activity, BOEM is blatantly disregarding the interests of these stakeholder groups in violation of the executive order simply because it can. Unlike the rich homeowners of Martha's Vineyard and Cape Cod, who had the resources to bring suit and vindicate their concerns with the Cape Wind project, fishermen stakeholder groups simply cannot fight for their livelihoods in the same way. Without a change in its practices to better address the concerns of these stakeholder groups, BOEM runs the risk of significantly harming a vital industry in our economy, and further alienating a segment of the coastal communities it must work with.

IV. CONCLUSION

The regulatory processes governing offshore renewable energy form a complex web of rules and guidelines that a project must navigate in order to have a chance to provide power to a community. BOEM's current processes to site and lease offshore wind energy projects are extremely problematic for a variety of reasons. Under NEPA and the D.C. Court of Appeals' decision in *Public Employees for Environmental Responsibility v. Hopper*, BOEM is almost certainly not meeting its legal requirements for a meaningful environmental analysis through its improper deferment of many considerations until a potential future analysis. Considering the practical benefits of marine spatial planning, BOEM is currently inadequately considering conflicting uses with fishing communities, especially given its stated commitment to the practice. Additionally, BOEM appears to be specifically designing lease sales to disproportionately affect fishing communities that do not have the resources to fight back, offending the principles of environmental justice.

Virginia-Commercial-Lease-Area/, BUREAU OF OCEAN ENERGY MGMT., MARYLAND LEASING AREAS, https://www.boem.gov/MD-FSN-Map/, *and* BUREAU OF OCEAN ENERGY MGMT., ATLANTIC WIND LEASE SALE 5, https://www.boem.gov/NJ-FSN-Lease-Map/ (all last visited May 24, 2018).

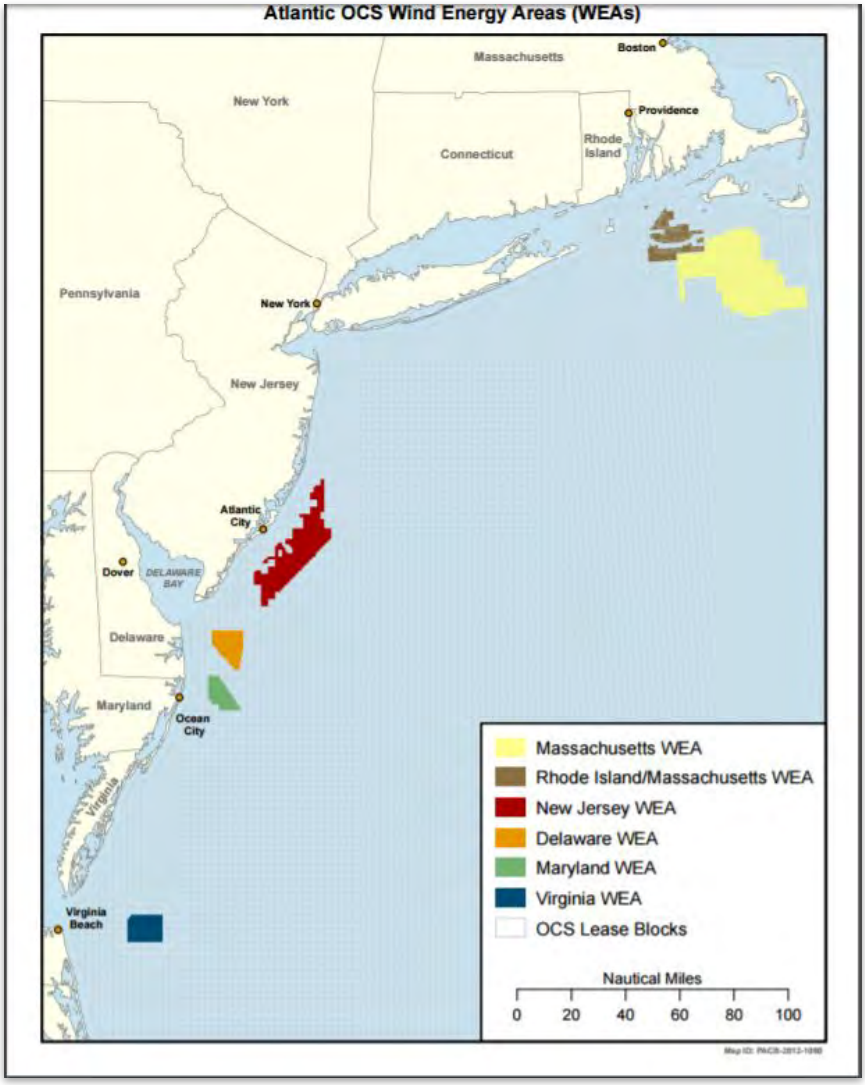
[145] *Commercial Fisherman Salary*, SOKANU, https://www.sokanu.com/careers/commercial-fisherman/salary/ (last visited May 21, 2018).

[146] NAT'L OCEANIC AND ATMOSPHERIC ADMIN., *supra* note 125.

Moving forward, BOEM must consider these problems when permitting offshore wind projects. The Bureau must take into account the probable effects of the construction and operation of these wind farms before offering a lease for sale, ensuring that all the relevant information is considered before irretrievably committing resources to a project. Furthermore, BOEM must continue to expand its collaboration with local stakeholder groups to properly protect the interests of fishing communities. By working with these stakeholder groups, BOEM will be able to site projects in a manner that will be beneficial to all offshore users and avoid costly conflict. With these changes, BOEM will be able to explore accurately the true feasibility of offshore wind energy.

APPENDIX I

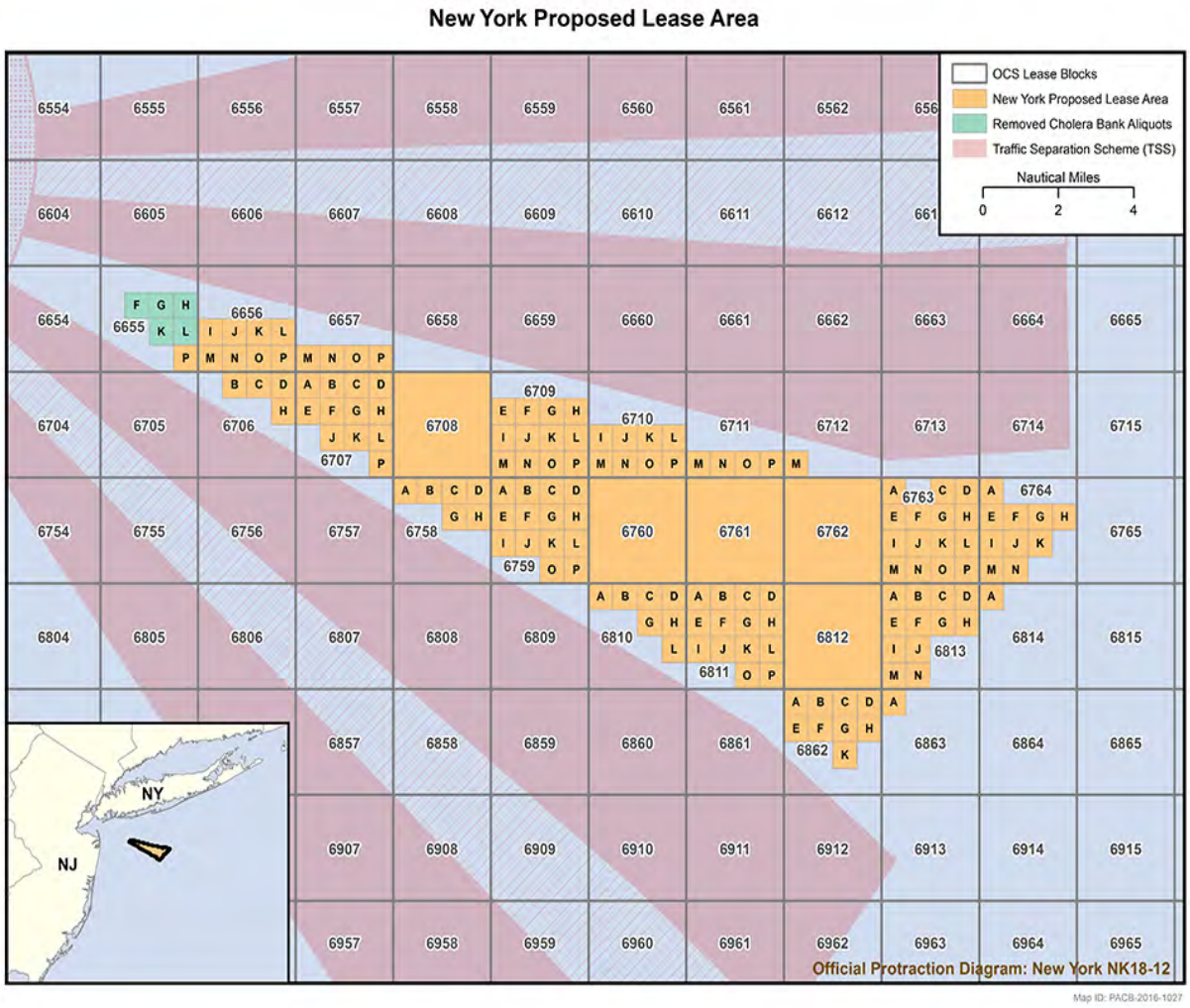
MAP OF ATLANTIC OCS WIND ENERGY AREAS (AT TIME OF "SMART FROM THE START" ADOPTION) [147]



[147] BUREAU OF OCEAN ENERGY MGMT., ATLANTIC OCS WIND ENERGY AREAS (WEAS), https://www.boem.gov/uploadedFiles/BOEM/Renewable_Energy_Program/Smart_from_the_Start/Wind_Energy_Areas0607.pdf (last visited May 24, 2018).

APPENDIX II

NEW YORK WIND ENERGY AREA[148]



[148] BUREAU OF OCEAN ENERGY MGMT., NEW YORK PROPOSED LEASE AREA, *https://www.boem.gov/uploadedImages/BOEM/Renewable_Energy_Program/State_Activities/NY_Proposed_Lease_Area.jpg* (last visited May 24, 2018).