



2017

States Will Be Big Fans: A State Driven Regulatory Process For Offshore Wind Development Off U.S. Coastlines

Erin K. Benson

Follow this and additional works at: <https://scholarworks.law.ubalt.edu/ublr>



Part of the [Energy and Utilities Law Commons](#)

Recommended Citation

Benson, Erin K. (2017) "States Will Be Big Fans: A State Driven Regulatory Process For Offshore Wind Development Off U.S. Coastlines," *University of Baltimore Law Review*: Vol. 47 : Iss. 1 , Article 5.
Available at: <https://scholarworks.law.ubalt.edu/ublr/vol47/iss1/5>

This Article is brought to you for free and open access by ScholarWorks@University of Baltimore School of Law. It has been accepted for inclusion in University of Baltimore Law Review by an authorized editor of ScholarWorks@University of Baltimore School of Law. For more information, please contact snolan@ubalt.edu.

STATES WILL BE BIG FANS: A STATE DRIVEN
REGULATORY PROCESS FOR OFFSHORE WIND
DEVELOPMENT OFF U.S. COASTLINES

Erin K. Benson*

I. INTRODUCTION

Scientists predict that sea levels will rise two meters by the year 2100 if the existing average of greenhouse gas emissions remains the same.¹ Current emission totals have resulted in a rise of the Earth's average surface temperature and more than ninety percent of this added heat is being absorbed by the world's oceans.²

Over the past decade, climate change has become a crucial concern for not only the United States, but for the world.³ The United States government has taken initiative and has implemented several different processes to effectively reduce emissions and increase energy efficiency in order to mitigate the drastic effects of climate change expected to occur.⁴ The world's oceans are perhaps the greatest natural resource available, yet government agencies such as the Bureau of Ocean Energy Management (BOEM)⁵ have only

* J.D. Candidate, May 2018, University of Baltimore School of Law; B.A., Sociology, 2014, Pennsylvania State University. A special thank you to Ren Serey and Mark Talty, for their insight and guidance, my family and friends, for their endless support, and the *University of Baltimore Law Review* staff, all of whom were prominent to the publication of this Comment.

1. Brady Dennis & Chris Mooney, *Scientists Nearly Double Sea Level Rise Projections for 2100, Because of Antarctica*, WASH. POST (Mar. 30, 2016), https://www.washingtonpost.com/news/energy-environment/wp/2016/03/30/antarctic-loss-could-double-expected-sea-level-rise-by-2100-scientists-say/?utm_term=.7aa5cab7631d; Erin A. Thead, *Sea Level Rise: Risk and Resilience in Coastal Cities*, CLIMATE INST. (Oct. 2016), <http://climate.org/sea-level-rise-risk-and-resilience-in-coastal-cities/>.
2. *Global Warming*, EARTH OBSERVATORY, <https://earthobservatory.nasa.gov/Features/GlobalWarming/page2.php> (last visited Nov. 11, 2017); *Is Sea Level Rising?*, NAT'L OCEANIC & ATMOSPHERIC ADMIN., <http://oceanservice.noaa.gov/facts/sealevel.html> (last visited Nov. 11, 2017).
3. See Marianne Lavelle, *Crocodiles and Palm Trees in the Arctic? New Report Suggests Yes.*, NAT'L GEOGRAPHIC (May 23, 2016), <http://news.nationalgeographic.com/2016/05/160523-climate-change-study-eight-degrees/>.
4. See *What EPA Is Doing About Climate Change*, U.S. ENVTL. PROTECTION AGENCY (Jan. 19, 2017), https://19january2017snapshot.epa.gov/climatechange/what-epa-doing-about-climate-change_.html.
5. "BOEM manages the responsible exploration and development of offshore energy and marine mineral resources on the U.S. Outer Continental Shelf (OCS). The bureau promotes energy independence, environmental protection and economic

executed highly regulatory processes for resources such as oil and gas, despite the obvious need for renewable energy.⁶ BOEM implemented a detailed Five-Year Program for oil and gas leasing along the Outer Continental Shelf (OCS),⁷ but has failed to implement such detailed processes for renewable energy.⁸ Because of its location, a large number of federal and state regulations apply to offshore wind power.⁹ These regulations cause wind projects to be delayed or even eliminated entirely.¹⁰ Without a flexible regulatory process for implementing and constructing offshore wind turbines, projects will continually be deferred, and the various benefits provided by offshore wind energy will be lost.¹¹ More importantly, developers and stakeholders need long term financial assurance.¹²

Implementing offshore wind energy along the nation's shorelines would result in significant benefits, including reduced greenhouse gas emissions, decreased air pollution from other pollutants, reduced water consumption, greater energy diversity and security, and increased economic development and employment.¹³ Compared with oil and gas leasing plans along the OCS, offshore wind energy farms would cause less destruction to our oceans while combating the international issue of climate change.¹⁴

development through responsible management of these offshore resources based on the best available science.” *Fact Sheet*, BUREAU OCEAN ENERGY MGMT., <https://www.boem.gov/BOEM-Fact-Sheet/> (last visited Nov. 11, 2017).

6. *See 2012-2017 OCS Oil and Gas Leasing Program*, BUREAU OCEAN ENERGY MGMT., <https://www.boem.gov/Five-Year-Program-2012-2017/> (last visited Nov. 11, 2017).
7. *Id.* The Outer Continental Shelf is defined as “the submerged lands . . . lying between the seaward extent of the States’ jurisdiction and the seaward extent of Federal jurisdiction.” *Outer Continental Shelf*, BUREAU OCEAN ENERGY MGMT., <https://www.boem.gov/outer-continental-shelf/> (last visited Nov. 11, 2017).
8. *See 2012-2017 OCS Oil and Gas Leasing Program*, *supra* note 6.
9. GA. COASTAL RESEARCH COUNCIL, GA. DEP’T OF NAT. RES., A SURVEY OF STATE REGULATION OF OFFSHORE WIND FACILITIES 5 (2013), http://www.gcrc.uga.edu/FocusAreas/offshore_energy/StateRegulationSurvey.pdf.
10. *See* U.S. DEP’T OF ENERGY & U.S. DEP’T OF THE INTERIOR, NATIONAL OFFSHORE WIND STRATEGY: FACILITATING THE DEVELOPMENT OF THE OFFSHORE WIND INDUSTRY IN THE UNITED STATES 55 (2016), <https://energy.gov/sites/prod/files/2016/09/f33/National-Offshore-Wind-Strategy-report-09082016.pdf>.
11. *See, e.g.*, Hannah Derrick, *Regulating and Permitting Offshore Wind Energy*, DUKE: NICHOLAS SCH. ENV’T (Nov. 18, 2016), <http://sites.nicholas.duke.edu/oceanenergy/regulating-and-permitting-offshore-wind-energy/>.
12. U.S. DEP’T OF ENERGY & U.S. DEP’T OF THE INTERIOR, *supra* note 10, at vii.
13. *Id.* at viii.
14. *See Offshore Wind Energy*, BUREAU OCEAN ENERGY MGMT., <https://www.boem.gov/Renewable-Energy-Program/Renewable-Energy-Guide/Offshore-Wind-Energy.aspx> (last visited Nov. 11, 2017).

The current political climate could have a negative effect on offshore wind energy development.¹⁵ The Trump administration has repeatedly expressed its support for coal, and President Trump has a known disdain for wind turbines.¹⁶ A drastic budget cut by the administration is likely to cut almost 70% of funding for the Office of Energy Efficiency and Renewable Energy.¹⁷ According to the released documents, wind energy research funding would decline by 67%, equivalent to a reduction of over sixty million dollars.¹⁸ These budget cuts would severely undermine wind development and the renewable energy industry as a whole.¹⁹ Due to the drastic halt in political support for renewable energy, states must develop a strategy to further facilitate development of offshore wind.²⁰

This Comment will proceed in five parts following this introduction. Part II provides helpful background on how wind turbines work and the benefits of offshore wind energy.²¹ Part III analyzes the different regulatory processes in place for energy sources that help provide guidance for an improved offshore wind program.²² Part III also examines how the current renewable energy process applies to offshore wind projects.²³ Part IV proposes a new Five-Year Program for facilitating offshore wind farm development.²⁴ Part V explains the critical role that states will have in the proposed process.²⁵

The proposed program is based on a combination of BOEM's Five-Year Oil and Gas Leasing Program and the current Offshore Wind Program, with emphasis on the responsibility that states will have in

-
15. See Joe Ryan & Jennifer A. Dlouhy, *Dream of Offshore U.S. Wind Power May Be Too Ugly for Trump*, BLOOMBERG (Feb. 24, 2017, 10:39 AM), <https://www.bloomber.com/news/articles/2017-02-24/dream-of-offshore-u-s-wind-power-may-be-just-too-ugly-for-trump>.
 16. See Alexander C. Kaufman, *Donald Trump Is Once Again Trashing Wind Energy*, HUFFPOST (Oct. 31, 2016, 11:50 AM), http://www.huffingtonpost.com/entry/donald-trump-wind-energy_us_581751e7e4b0390e69d12e13.
 17. Chris Mooney, *Trump Plans a 69 Percent Budget Cut, Large Staff Reductions at Clean Energy Office*, WASH. POST (May 23, 2017), https://www.washingtonpost.com/news/energy-environment/wp/2017/05/23/trump-plans-a-69-percent-budget-cut-large-staff-reductions-at-clean-energy-office/?utm_term=.0e240edfc556.
 18. *Id.* (“Wind energy research would decline to \$31.7 million from \$95.27 million, a 67 percent cut.”).
 19. *See id.*
 20. *See infra* Part V.
 21. *See infra* Part II.
 22. *See infra* Part III.
 23. *See infra* Part III.
 24. *See infra* Part IV.
 25. *See infra* Part V.

implementing the proposed process.²⁶ Essentially, this proposed program provides a detailed process for the leasing and construction of offshore wind farms in order to promote efficiency.²⁷ The proposed program accounts for the array of obstacles that have impacted the development of previous projects and seeks to eliminate the years of litigation that plague offshore wind.²⁸ The suggested process also gives environmental protection regulations high priority through preliminary site assessment.²⁹ Part V focuses on increased economic incentives and explains how states can ensure that offshore wind becomes cost effective.³⁰ Part V also analyzes the effect of federal-state task forces on the expansion of offshore wind development.³¹

II. THE NEED FOR OFFSHORE WIND ENERGY

The Energy Policy Act of 2005 addressed energy production throughout the United States and emphasized the need for alternative energy sources.³² In 2007, the Supreme Court ruled in *Massachusetts v. EPA* that greenhouse gases, which are “[g]ases that trap heat in the atmosphere,”³³ constitute air pollutants as defined by the Clean Air Act.³⁴ This crucial determination gave the EPA authority to regulate such gases if the agency determined that they endangered public health or welfare, which it did in 2009.³⁵ By entering into the Paris Accord in 2016, the United States committed to lowering its greenhouse gas emissions 26%–28% below the nation’s 2005 emissions levels.³⁶

26. See *infra* Parts IV–V.

27. See *infra* Part IV.

28. See *infra* Part IV.

29. See *infra* Part V.

30. See *infra* Section V.B.

31. See *infra* Section V.D.

32. Energy Policy Act of 2005, 42 U.S.C. §§ 15851–15891 (2012).

33. *Overview of Greenhouse Gases*, U.S. ENVTL. PROTECTION AGENCY, <https://www.epa.gov/ghgemissions/overview-greenhouse-gases> (last visited Nov. 11, 2017).

34. *Massachusetts v. EPA*, 549 U.S. 497, 528–29 (2007).

35. *Id.* at 533; Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496 (Dec. 15, 2009) (codified at 40 C.F.R. ch. I).

36. Warren Cornwall, *United States Will Miss Paris Climate Targets Without Further Action, Study Finds*, SCI. (Sept. 26, 2016, 11:15 AM), <http://www.sciencemag.org/news/2016/09/united-states-will-miss-paris-climate-targets-without-further-action-study-finds>. This percentage is the equivalent of between four and a half billion and five and a half billion metric tons of greenhouse gases. *Id.*

In 2015, Oceana released a report titled *Offshore Energy by the Numbers*.³⁷ The report provided an economic analysis of energy production in the Atlantic Ocean, including offshore oil drilling and wind energy.³⁸ In the executive summary of the report, Oceana declared that “20 years of offshore wind in the Atlantic could produce five billion barrels of oil equivalents (BOE) more than that of all the economically recoverable oil and gas in the same area.”³⁹ “In just 13 years of producing energy, offshore wind could generate more energy than could be provided by all of the economically recoverable offshore oil and gas resources.”⁴⁰

Wind energy decreases the amount of production needed from fossil fuel power plants, resulting in lower carbon dioxide, sulfur dioxide, and nitrogen oxide levels.⁴¹ In 2015, the total amount of wind energy produced avoided an estimated amount of 132 million metric tons of carbon dioxide, the equivalent emissions of 28.1 million cars.⁴² The amount of electricity generated by wind energy in 2015 is estimated to have avoided \$7.3 billion in health care costs for 2015 alone.⁴³

A. *How Offshore Wind Energy Works*

The concept of wind energy is hundreds of years old; for example, in 1870 farmers used wind to pump water and generate electricity.⁴⁴ Now, forty states have operating utility-scale onshore wind projects

37. ANDREW MENAQUALE, OCEANA, OFFSHORE ENERGY BY THE NUMBERS: AN ECONOMIC ANALYSIS OF OFFSHORE DRILLING AND WIND ENERGY IN THE ATLANTIC (2015), http://oceana.org/sites/default/files/offshore_energy_by_the_numbers_report_final.pdf.

38. *Id.* at 3.

39. *Id.* (“Based on government estimates, if all of the economically recoverable offshore oil and gas in the Atlantic Outer Continental Shelf (OCS) were extracted and used, oil demand would only be met for 132 days and gas demand would only be met for 283 days, at current consumption rates.”).

40. *Id.*

41. AM. WIND ENERGY ASS’N, U.S. WIND INDUSTRY 2015 ANNUAL MARKET UPDATE (2016), awea.files.cms-plus.com/Annual%20Report%20Environmental%20Benefits%202015.pdf.

42. *Id.* One hundred thirty two million metric tons of carbon dioxide is also equivalent to reducing power sector carbon dioxide emissions, including fossil fuel power plants, by 6%. *Id.*

43. *Id.*

44. *Farming the Wind: Wind Power and Agriculture*, UNION CONCERNED SCIENTISTS, www.ucsusa.org/assets/documents/clean_energy/agfs_wind_2003.pdf (last visited Nov. 11, 2017).

adding up to a total of 82,183 mega-watts.⁴⁵ Despite the success of onshore wind farms in the United States, only one offshore wind project has been constructed, and it began production in late 2016.⁴⁶

Offshore wind energy presents new opportunities for the renewable energy initiative simply by its offshore location.⁴⁷ Wind turbines operate as expected: as the wind blows, it turns the blades of the wind turbine, which ultimately causes a generator to produce electricity.⁴⁸ Because “[o]ffshore winds tend to blow harder and more uniformly than on land,” “[t]he potential energy produced from wind is” greater offshore.⁴⁹

B. *The Benefits of Offshore Wind*

The advantages of offshore wind energy are incredible. “[T]he National Renewable Energy Laboratory (NREL) has estimated the United States has over 4,000 gigawatts (GW) of offshore wind potential, enough to power the country four times over.”⁵⁰ With roughly 50% of the United States population living in coastal areas,⁵¹ offshore wind energy has the potential to supply energy to millions of homes and businesses in major coastal cities.⁵²

The National Renewable Energy Laboratory estimates that areas off the coast of California could potentially generate over 390

-
45. AM. WIND ENERGY ASS'N, U.S. WIND INDUSTRY FOURTH QUARTER 2016 MARKET UPDATE (2017), awea.files.cms-plus.com/FileDownloads/pdfs/4Q2016%20Fact%20Sheet.pdf.
 46. Katie Fehrenbacher, *U.S. Advances on Clean Energy with First Offshore Wind Farm*, GUARDIAN (Dec. 13, 2016, 10:20 AM), <https://www.theguardian.com/sustainable-business/2016/dec/13/wind-farm-projects-clean-energy-environment>.
 47. *Offshore Wind Energy*, *supra* note 14.
 48. *How Do Wind Turbines Work?*, DEP'T ENERGY: OFF. ENERGY EFFICIENCY & RENEWABLE ENERGY, <https://energy.gov/eere/wind/how-do-wind-turbines-work> (last visited Nov. 11, 2017). Specifically, the blades of the turbine surround a rotor that is connected to the drive shaft, and when the blades spin, the shaft turns an electric generator in order to produce electricity. *Id.*
 49. *Offshore Wind Energy*, *supra* note 14 (“The potential energy produced from wind is directly proportional to the cube of the wind speed. . . . [A] turbine at a site with an average wind speed of 16 mph would produce 50% more electricity than at a site with the same turbine and average wind speeds of 14 mph.”).
 50. *Fact Sheet: Offshore Wind - Can the United States Catch Up with Europe?*, ENVTL. & ENERGY STUDY INST. (Jan. 4, 2016), <http://www.eesi.org/papers/view/factsheet-offshore-wind-2016>.
 51. *Offshore Wind Energy*, *supra* note 14.
 52. *Id.* For instance, New York State alone consumes over fifteen million gallons of oil per day, while California consumes over thirty-nine million gallons of oil per day. *Oil: Crude and Petroleum Products Explained*, U.S. ENERGY INFO. ADMIN., http://www.eia.gov/energyexplained/index.cfm?page=oil_use (last updated Nov. 28, 2016).

terawatt hours of electricity per year from offshore wind alone.⁵³ An electricity production of that magnitude is 1.5 times the total electricity consumption of California in 2014.⁵⁴ Hawaii has the highest offshore wind energy potential, accounting for 17% of the nation's entire estimated offshore wind resource.⁵⁵ According to the United States Department of Energy, offshore wind will produce about 7% of the United States' current electricity demand.⁵⁶

One of President Trump's leading campaign promises was to increase available jobs, and he supported reviving the coal industry to help further this cause.⁵⁷ Despite the President's assertions, the number of jobs that increased coal production could create is minuscule compared to the number of potential jobs created by renewable energy.⁵⁸ Wind energy alone added 24,650 new jobs to the United States economy over the past year,⁵⁹ while the coal industry continues to lose thousands of jobs.⁶⁰ Based on 2016 statistics, the number of wind energy employees grew to 101,738,⁶¹ and the clean energy sector is rapidly growing.⁶² According to the

53. *BOEM and State of California Launch California Offshore Renewable Energy Task Force*, BUREAU OCEAN ENERGY MGMT. (Oct. 13, 2016), <https://www.boem.gov/pres10132016/>.

54. *Id.*

55. *Offshore Wind Energy*, *supra* note 14.

56. Brian Dumaine, *Wind Power Takes to the Seas*, FORTUNE (Mar. 14, 2017), <http://fortune.com/2017/03/14/offshore-wind-power-deepwater-de-shaw/>.

57. See Jim Marston, *Trump Promises a Renaissance for Coal – but These Clean Energy Numbers Tell a Different Story*, ENVTL. DEF. FUND (Feb. 23, 2017), <http://blogs.edf.org/energyexchange/2017/02/23/trump-promises-a-renaissance-for-coal-but-these-clean-energy-numbers-tell-a-different-story/>.

58. Niall McCarthy, *Solar Employs More People in U.S. Electricity Generation than Oil, Coal and Gas Combined*, FORBES (Jan. 25, 2017, 8:30 AM), <http://www.forbes.com/sites/niallmccarthy/2017/01/25/u-s-solar-energy-employs-more-people-than-oil-coal-and-gas-combined-infographic/#55e62d897d27> (“In the United States, more people were employed in solar power last year than in generating electricity through coal, gas and oil energy combined.”).

59. *Id.*

60. Derek Thompson, *The White House Exaggerated the Growth of Coal Jobs by About 5,000 Percent*, ATLANTIC (June 6, 2017), <https://www.theatlantic.com/business/archive/2017/06/pruitt-epa-coal-jobs-exaggerate/529311/> (explaining that, while the total number of jobs in the coal industry have actually increased since October 2016, the total number of coal jobs fell to about 50,000 in 2017 from 178,000 in 1986).

61. U.S. DEP'T OF ENERGY, U.S. ENERGY AND EMPLOYMENT REPORT 29 (2017), https://energy.gov/sites/prod/files/2017/01/f34/2017%20US%20Energy%20and%20Jobs%20Report_0.pdf.

62. See *id.* at 21. Two million seven hundred thousand people work in clean energy throughout the nation. Jeff Nesbit, *Clean Energy Is Seeing Monumental Job Growth*, U.S. NEWS (Mar. 5, 2017, 12:01 PM),

United States Office of Energy Efficiency and Renewable Energy, “[w]ind turbine technician is the fastest-growing American job of the decade.”⁶³ The various benefits that offshore wind energy provides to the United States economy should be exploited.⁶⁴

III. CURRENT REGULATORY PROCESSES FOR ENERGY PRODUCTION

A. BOEM’s Five-Year Oil and Gas Leasing Program

BOEM developed the Five-Year Outer Continental Shelf (OCS) Oil and Gas Leasing Program.⁶⁵ The OCS Lands Act (OCSLA) requires the Secretary of the Interior to prepare a five-year program in order to grant oil and gas leases along the OCS.⁶⁶ The program “includes a schedule of oil and gas lease sales and indicates the size, timing and location of proposed leasing activity.”⁶⁷ Every five years, the Secretary of the Interior is required to propose a new plan for the upcoming five years.⁶⁸ Three separate phases make up BOEM’s oil and gas program: (1) planning for a specific oil and gas lease sale; (2) oil and gas exploration plan approval; and (3) oil and gas development and production plan approval.⁶⁹

the-edge/articles/2017-03-15/clean-energy-is-seeing-explosive-job-growth-dont-let-budget-kill-it.

63. *U.S. Wind Power Achieves Landmark Installed Capacity of 82,000 Megawatts*, U.S. DEP’T ENERGY: OFF. ENERGY EFFICIENCY & RENEWABLE ENERGY (Feb. 8, 2017), <https://energy.gov/eere/wind/articles/us-wind-power-achieves-landmark-installed-capacity-82000-megawatts>.

64. *See supra* Section II.B.

65. *OCS Oil and Gas Leasing, Exploration, and Development Process*, BUREAU OCEAN ENERGY MGMT., <https://www.boem.gov/Oil-and-Gas-Energy-Program/Leasing/Five-Year-Program/BOEM-OCS-Oil-and-Gas-Leasing-Process-Diagram.aspx> (last visited Nov. 11, 2017).

66. *Past Five Year Programs*, BUREAU OCEAN ENERGY MGMT., <https://www.boem.gov/Past-Five-Year-Programs/> (last visited Nov. 11, 2017).

67. *Id.*

68. *See id.*

69. *OCS Oil and Gas Leasing, Exploration, and Development Process*, *supra* note 65. As the five-year program is developed, the federal government is required to assess eight factors: (1) “[g]eographic, [g]eological, and [e]cological [c]haracteristics” of planning areas; (2) a balance between the benefits of oil and gas development and environmental risks among regions; (3) location of areas considered for leasing “with [r]espect to [r]egional and [n]ational [e]nergy [m]arkets and [n]eeds”; (4) location of areas considered for leasing “with [r]espect to [o]ther [u]ses of the [s]ea and [s]eabed”; (5) interest expressed by “[p]otential [o]il and [g]as [p]roducers”; (6) the “[l]aws, [g]oals, and [p]olicies of [a]ffected [s]tates”; (7) “[e]nvironmental [s]ensitivity and [m]arine [p]roductivity”; and (8) environmental studies and impact analyses, including Environmental Impact Statements. *Frequently Asked Questions for the RFI and National Program*, BUREAU OCEAN ENERGY MGMT., <https://www.boem.gov/RFI-and-National-Program/Frequently-Asked-Questions>.

The Planning for Specific Oil and Gas Lease Sale phase runs from the time that an Environmental Impact Statement (EIS)⁷⁰ is initiated to the time the lease is issued.⁷¹ Once a notification of intent to produce an EIS is issued, there is a forty-five day comment period.⁷² Environmental consultations follow the comment period, a sale area is defined, and a draft of the EIS is published.⁷³ After publication, another comment period lasting between forty-five to ninety days begins.⁷⁴ Following the comment period, the final EIS is released, and notices and determinations are published for comment.⁷⁵ A final notice of the sale is then published along with a Record of Decision.⁷⁶ After thirty days, the sale is held, the fair market value assessment is taken, and the lease is issued.⁷⁷

Once the lease is issued, the Oil and Gas Exploration Plan Approval phase begins.⁷⁸ During this phase, an exploration plan is submitted to the affected states' Coastal Zone Management programs, and an environmental assessment is completed.⁷⁹ This review takes anywhere between ninety days to six months.⁸⁰ Once the exploration plan is reviewed, the Application for Permit to Drill is either granted or denied.⁸¹ Granting this permit initiates exploration drilling throughout the leased area, and subsequently, the first exploration wells are completed and delineation well drilling begins.⁸²

The final phase of the program begins when the Oil and Gas Development and Production Plan is submitted and ends when the first production occurs.⁸³ After the plan is submitted, the developer

em.gov/Frequently-Asked-Questions-for-RFI-and-National-Program/ (last updated June 29, 2017).

70. Section 4332(2)(C) of the National Environmental Policy Act of 1969 (NEPA) requires an EIS when a proposed federal action will affect the "quality of the human environment." 42 U.S.C. § 4332(2)(C) (2015). It includes several parts, such as consideration of reasonable alternatives, analysis of the affected environment, and discussion of the direct and indirect consequences on the environment. *Id.*

71. *OCS Oil and Gas Leasing, Exploration, and Development Process*, *supra* note 65.

72. *Id.*

73. *Id.*

74. *Id.*

75. *Id.*

76. *Id.*

77. *Id.*

78. *Id.*

79. *Id.*

80. *Id.*

81. *Id.*

82. *Id.*

83. *Id.*

must submit a Coastal Zone Management Consistency Certification,⁸⁴ and a NEPA analysis must be conducted.⁸⁵ The Coastal Zone Management program of the state where the lease area is located must provide a consistency concurrence before a final Development and Production Plan Decision can be released.⁸⁶ Finally, a production well application is submitted, and with approval, the oil and gas from the leased area may be produced.⁸⁷

B. *BOEM's Renewable Energy Program*

In September 2015, the United States Department of Energy's (DOE) Wind Energy Technologies Office and the United States Department of the Interior's (DOI) BOEM produced an updated strategy to facilitate offshore wind energy development.⁸⁸ The strategy states three strategic themes for offshore wind energy: "[r]educing [c]osts and [t]echnology [r]isks," "[s]upporting [e]ffective [s]tewardship," and "[i]ncreasing [u]nderstanding of the [b]enefits and [c]osts of [o]ffshore [w]ind."⁸⁹ BOEM has introduced a basic four-step plan for offshore wind;⁹⁰ however, the plan drastically lacks clarity and predictability.⁹¹ BOEM has recognized the plan's inconsistencies stating, "[o]ffshore wind developers, financiers, and power purchasers need confidence in a project's ability to navigate regulatory and environmental compliance requirements in a predictable way."⁹² The current process consists of four basic phases: planning, leasing, site assessment, and construction and operations.⁹³

The authorization process begins with planning and analysis.⁹⁴ Initially, an Intergovernmental Renewable Energy Task Force is

84. *Id.* A Coastal Zone Management Consistency Certification requires compliance with policies of the state's Coastal Zone Management programs, such as the Shoreline Management Act, the State Environmental Policy Act, the Clean Water Act, the Clean Air Act, the Energy Facility Site Evaluation Council, and the Ocean Resource Management Act. Linda Rankin, *Focus: Washington's Coastal Zone Management Program – Federal Consistency*, WASH. ST. DEP'T ECOLOGY 1 (June 2002), <https://fortress.wa.gov/ecy/publications/documents/0006006.pdf>.

85. *OCS Oil and Gas Leasing, Exploration, and Development Process*, *supra* note 65. This analysis is conducted by BOEM. *Id.*

86. *Id.*

87. *Id.*

88. U.S. DEP'T OF ENERGY & U.S. DEP'T OF THE INTERIOR, *supra* note 10, at vii.

89. *Id.* at 24.

90. *Id.* at 35.

91. *Id.* at ix.

92. *Id.*

93. *Id.* at 35.

94. *Id.*

established consisting of relevant federal, state, local, and tribal officials.⁹⁵ “BOEM coordinates with the members of each Task Force to inform how and whether renewable energy planning and leasing should proceed.”⁹⁶ Most importantly, the task forces influence BOEM’s decision-making by recognizing and combating uses and resources that “may conflict” with the offshore wind energy project.⁹⁷ The task forces help identify Wind Energy Areas, which are defined as areas suitable for offshore wind development.⁹⁸ After an area is identified, BOEM publishes a notice in the Federal Register.⁹⁹ The notice helps “determine whether there is competitive interest in the area” planned for development and also allows BOEM to gather public comments and input.¹⁰⁰

The competitive planning and leasing process is only initiated when a competitive interest is found during the planning and analysis phase, but otherwise BOEM negotiates a lease agreement.¹⁰¹ A lessee must receive approval of each plan before conducting site assessment or construction and operations.¹⁰²

Site assessment, the third stage of the process, is designed to take five years to complete.¹⁰³ This is the same amount of time the entire oil and gas leasing program is completed.¹⁰⁴ During this stage, the lessee must complete all necessary site characterization and assessment activities in order to provide support for the pursuance of the offshore project.¹⁰⁵ A lessee’s Site Assessment Plan undergoes significant review in order to guarantee that the site is appropriate for

95. *Id.*

96. *Id.*

97. *Id.* One example of the information the task force provides to the decision-making process is “how to resolve potential conflicts between development and environmental concerns.” *BOEM and State of California Launch California Offshore Renewable Energy Task Force*, *supra* note 53.

98. *Planning and Environmental Review Process for Competitive Commercial Wind Leasing Offshore New York*, BUREAU OCEAN ENERGY MGMT. 4 (Sept. 2013), <https://www.boem.gov/BOEM-Presentation-Leasing-Environmental-Review-Process/>.

99. U.S. DEP’T OF ENERGY & U.S. DEP’T OF THE INTERIOR, *supra* note 10, at 35.

100. *Id.*

101. *Wind Energy Commercial Leasing Process*, BUREAU OCEAN ENERGY MGMT., <https://www.boem.gov/Commercial-Leasing-Process-Fact-Sheet/> (last updated Jan. 24, 2017).

102. *See* U.S. DEP’T OF ENERGY & U.S. DEP’T OF THE INTERIOR, *supra* note 10, at 36.

103. *Id.*

104. *See 2012-2017 OCS Oil and Gas Leasing Program*, *supra* note 6.

105. U.S. DEP’T OF ENERGY & U.S. DEP’T OF THE INTERIOR, *supra* note 10, at 36.

the project.¹⁰⁶ Once the lessee decides to continue the process, it must submit a Construction and Operations Plan to BOEM for approval.¹⁰⁷ This step accentuates the need for a thorough, clear process due to the large number of outside agencies involved.¹⁰⁸

The Construction and Observation plan includes several steps.¹⁰⁹ During this phase, BOEM conducts several reviews and consultations regarding both environmental and technical issues.¹¹⁰ When BOEM approves the Construction and Observation Plan, the lessee receives a twenty-five year term “in which to construct facilities and generate electricity.”¹¹¹

C. *Application of the Current Renewable Energy Process to Offshore Wind Farms*

The Block Island Wind Farm, located off the coast of Rhode Island and developed by Deepwater Wind, is the first commercial offshore wind energy facility in the United States.¹¹² The facility consists of five wind turbines and is able to power about 17,000 homes.¹¹³ While typically many private homeowners oppose wind farms,¹¹⁴ the Block Island Wind Farm was constructed with comparative ease, most likely due to its relatively small size.¹¹⁵

-
106. *Id.* (“If a lessee is proposing to install a meteorological tower and/or buoy to gather wind and oceanographic resource data on the leasehold, it must submit a Site Assessment Plan (SAP) that describes these activities for BOEM’s review and approval. If the proposed activities and their effects are outside the scope of BOEM’s previous environmental reviews and consultations, additional review and consultation may be necessary.”).
107. *Planning and Environmental Review Process for Competitive Commercial Wind Leasing Offshore New York*, *supra* note 98, at 18.
108. *See id.*
109. *See Wind Energy Commercial Leasing Process*, *supra* note 101.
110. *Id.*
111. *Planning and Environmental Review Process for Competitive Commercial Wind Leasing Offshore New York*, *supra* note 98, at 20.
112. Tatiana Schlossberg, *America’s First Offshore Wind Farm Spins to Life*, N.Y. TIMES (Dec. 14, 2016), <http://www.nytimes.com/2016/12/14/science/wind-power-block-island.html>.
113. *Id.* (“According to a spokeswoman for Deepwater Wind, about 90 percent of the island’s needs will be met by the wind-generated power, and more will go back to the grid. Current estimates are that the wind farm will supply 1 percent of the state’s electricity, the spokeswoman said.”).
114. *See id.*
115. *See* Brady Dennis, *The Nation’s First Offshore Wind Farm Is Ready to Go, Despite Critics’ Blowback*, WASH. POST (Aug. 27, 2016), https://www.washingtonpost.com/national/health-science/the-nations-first-offshore-wind-farm-is-ready-to-go-despite-critics-blow-back/2016/08/27/7a43c6d6-693f-11e6-99bf-f0cf3a6449a6_story.html.

In contrast, Cape Wind Wind Farm (Cape Wind) is a prime example of the taxing process of offshore wind development.¹¹⁶ The wind farm project was proposed in 2001 and has yet to be completed.¹¹⁷ Cape Wind will be located off the coast of Cape Cod and Nantucket Sound.¹¹⁸ Opponents of Cape Wind filed a total of thirty-two cases against the project.¹¹⁹ Twenty-six of these cases were decided in favor of Cape Wind.¹²⁰

The project was suspended for two years on July 24, 2015.¹²¹ BOEM relied on four reasons for granting Cape Wind Associates' (CWA) two-year suspension request.¹²² Specifically, BOEM stated, "CWA has faced extensive legal challenges, some of which are still ongoing or under appeal—including litigation against BOEM. The history of the project demonstrates that the litigation has negatively impacted CWA's ability to timely obtain project financing and thus commence construction and operation of the project."¹²³ On March 6, 2017, BOEM published a Notice of Intent to Prepare a Supplemental Environmental Impact Statement for the Cape Wind Energy Project in the Federal Register.¹²⁴ The proposed program for offshore wind development allows for states to complete similar

116. See *infra* notes 117–25 and accompanying text.

117. *Cape Wind Project Status & Timeline*, CAPE WIND, <https://www.capewind.org/when> (last visited Nov. 11, 2017) ("Cape Wind is currently in its financing and final commercial contracting stage."); *Cape Wind Project Timeline*, CAPE WIND, <https://www.capewind.org/when/timeline> (last visited Nov. 11, 2017).

118. *FAQs: Cape Wind Basics*, CAPE WIND, <https://www.capewind.org/faqs/cape-wind-basics> (last visited Nov. 11, 2017).

119. *Litigation History of Cape Wind*, CAPE WIND (May 2, 2014), <http://www.capewind.org/sites/default/files/downloads/Litigation%20History%20of%20Cape%20Wind%20May%202%202014.pdf>. Jim Gordon, Cape Wind's developer, estimates that litigation and regulatory hurdles have cost the project over \$65 million. Tom Zeller Jr., *Cape Wind: Regulation, Litigation and the Struggle to Develop Offshore Wind Power in the U.S.*, HUFFPOST (Mar. 1, 2013), http://www.huffingtonpost.com/2013/02/23/cape-wind-regulation-liti_n_2736008.html.

120. *Litigation History of Cape Wind*, *supra* note 119.

121. *Cape Wind*, BUREAU OCEAN ENERGY MGMT., <https://www.boem.gov/Renewable-Energy-Program/Studies/Cape-Wind.aspx> (last visited Nov. 11, 2017).

122. Letter from Abigail Ross Hopper, Dir., Bureau of Ocean Energy Mgmt., to James S. Gordon, Manager, Cape Wind Assocs., LLC (July 24, 2015), <https://www.boem.gov/Lease-Suspension-Order/>.

123. *Id.* BOEM's letter granting the request also stated: "The U.S. offshore wind industry is still in its early stages, and all developers face numerous uncertainties and impediments when trying to move forward with project proposals." *Id.*

124. *Cape Wind*, *supra* note 121; Supplemental Environmental Impact Statement for the Cape Wind Energy Project, 82 Fed. Reg. 12,636 (Mar. 6, 2017).

processes prior to BOEM involvement, which will help streamline the process and cut project costs.¹²⁵

D. *Market Forces Impacting Offshore Wind and Financial Incentives*

In order for offshore wind energy to become a viable renewable energy practice, there must be greater economic incentives.¹²⁶ Without economic incentives, companies and developers are less likely to invest in renewable energy sources, such as wind.¹²⁷ Recently, investment advisors have encouraged wind energy investments and have specifically asserted that such an investment would prove to have long term benefits because investments in renewable energy are investments in the future.¹²⁸

In December of 2015, the Consolidated Appropriations Act of 2016 passed.¹²⁹ The bill included a four-year extension of the Renewable Electricity Production Tax Credit and the ability to elect the Investment Tax Credit for wind energy facilities.¹³⁰ Under the bill, all wind projects that begin construction before the end of the extension, December 31, 2019, will qualify for the tax credit; however, the credit began to decrease in 2017.¹³¹ Tax credits provide offshore wind projects with stability and predictability.¹³²

125. *See infra* Part V.

126. *Cf.* Paul Sullivan, *Trump May Not Like Alternative Energy, but Investors Should*, N.Y. TIMES (Jan. 6, 2017), https://www.nytimes.com/2017/01/06/your-money/trump-may-not-like-alternative-energy-but-investors-should.html?rref=collection%2Ftime-stopic%2FWind%20Power&action=click&contentCollection=energyenvironment®ion=stream&module=stream_unit&version=latest&contentPlacement=1&pgtype=collection (analyzing economic incentives stemming from renewable energy, including wind energy).

127. *Cf. id.* (discussing investments in renewable energy despite the Trump administration's intent to cease federal subsidies).

128. *Id.*

129. *Renewable Electricity Production Tax Credit (PTC)*, DEP'T ENERGY, <https://energy.gov/savings/renewable-electricity-production-tax-credit-ptc> (last visited Nov. 11, 2017) (summarizing the history and importance of production tax credits).

130. *Id.*

131. *Id.* The Production Tax Credit is reduced by 20% for projects commencing in 2017, 40% in 2018, and 60% in 2019. *Id.*

132. *Cf.* Nathanael Greene, *Extension of Clean Energy Tax Incentives Is a Major Bright Spot in Congress's New Spending Bill*, NAT. RESOURCES DEF. COUNCIL (Dec. 16, 2015), <https://www.nrdc.org/experts/nathanael-greene/extension-clean-energy-tax-incentives-major-bright-spot-congresss-new> (explaining that tax credits "will ensure that clean energy is prioritized . . . and will dramatically accelerate the power sector's progress toward making the deeper long-term pollution cuts we need").

Unfortunately, the majority of offshore wind projects will not benefit from the extended tax credits because of the construction deadline.¹³³

IV. THE PROPOSED FIVE-YEAR OFFSHORE WIND DEVELOPMENT PROGRAM

A. *The Basics of the Proposed Five-Year Program*

The lengthy and litigation-filled process of developing offshore wind energy off the United States coastline prevents investors and developers from undertaking such a project.¹³⁴ With a concise, streamlined program, more commercial wind energy projects will be initiated and executed.¹³⁵

In its most recent *National Offshore Wind Strategy*, BOEM stated that “further work can be done to ensure that existing requirements are not overly burdensome, such as providing more predictable review timelines.”¹³⁶ The four-phase general plan must be expanded to a more detailed process that will help guide developers.¹³⁷ While offshore wind energy development is still a new energy sector,¹³⁸ applicable agency regulations should be clear and consistent.¹³⁹ Certain projects might require additional time for certain phases, but stricter timetables need to be implemented.¹⁴⁰ One way to achieve this goal is to include states more in the process.¹⁴¹

Companies looking to invest in offshore wind need financial assurance and a process that promotes development, rather than litigation.¹⁴² In the updated *National Offshore Wind Strategy*, the DOE and the DOI recognized the need for “interagency

133. *Id.*

134. *See supra* notes 119–23 and accompanying text.

135. *See* U.S. DEP’T OF ENERGY & U.S. DEP’T OF THE INTERIOR, *supra* note 10, at 54–55.

136. *Id.* at 34. Timelines such as those seen in BOEM’s Five-Year Oil and Gas Leasing Program will help to efficiently implement offshore wind energy and prevent undue delay and litigation of unnecessary claims. *See OCS Oil and Gas Leasing, Exploration, and Development Process*, *supra* note 65. The proposed program seeks to implement the first stage of the BOEM Oil and Gas Leasing Program into a state-driven process for offshore wind energy. *See id.*

137. *See supra* notes 89–93 and accompanying text.

138. *See* U.S. DEP’T OF ENERGY & U.S. DEP’T OF THE INTERIOR, *supra* note 10, at iv.

139. *Id.* at 10.

140. *Id.* at 37–38.

141. *See infra* Part V.

142. *See* Zeller, *supra* note 119 (“[E]nvironmental review, and the lawsuits attending it, now actively thwart environmentally positive projects like Cape Wind.”).

coordination,” yet no plan has been implemented for how to combat this issue.¹⁴³

The main purpose of this proposed program is to improve the efficiency of the offshore wind energy development process, making time and capital the two biggest concerns.¹⁴⁴ The Five-Year Oil and Gas Process provides specific time frames for each step along the process.¹⁴⁵ The program for offshore wind should have similar timetables in place. The four phases of the current renewable energy process will remain the same,¹⁴⁶ but they need to be expanded, explained in detail, and timed. The proposed program adopts the deadline-driven first stage of BOEM’s Oil and Gas Leasing Program.¹⁴⁷

An annual progress report, as required for the Five-Year Oil and Gas Leasing Program,¹⁴⁸ should be implemented into the five-year offshore wind energy leasing program. Because renewable wind energy is still new, the annual progress report will include a detailed analysis of each step in the process, including steps that require clarification or improvement to help guarantee efficiency and compliance.¹⁴⁹ Designating a period for review of the new process will provide opportunity for input from stakeholders and will help with the implementation of needed changes.¹⁵⁰

A foundational goal behind this proposed program is to limit litigation, which will in turn decrease the cost of projects and the apprehension of developers and investors.¹⁵¹ Cape Wind highlights

143. See U.S. DEP’T OF ENERGY & U.S. DEP’T OF THE INTERIOR, *supra* note 10, at 53, 55.

144. See *id.* at 35–37.

145. Kip Tabb, *Offshore Permitting: Long, Winding Road*, COASTAL REV. ONLINE (June 10, 2015), <https://www.coastalreview.org/2015/06/ocs-permitting-a-long-winding-road/>.

146. See *supra* Section III.B.

147. See *supra* notes 70–77 and accompanying text.

148. *Annual Progress Report*, BUREAU OCEAN ENERGY MGMT., <https://www.boem.gov/Five-Year-Program-Annual-Progress-Report/> (last visited Nov. 11, 2017) (“Under section 18(e) of the OCS Lands Act, the Secretary must review an approved Five Year Program each year.”); U.S. DEP’T OF THE INTERIOR & BUREAU OF OCEAN ENERGY MGMT., ANNUAL PROGRESS REPORT ON THE OUTER CONTINENTAL SHELF (OCS) OIL AND GAS LEASING PROGRAM 2012–2017, at 1 (2015), <https://www.boem.gov/2014-Annual-Progress-Report-on-the-2012-2017-Five-Year-Program/>.

149. See *Annual Progress Report*, *supra* note 148. To ensure environmental protections, the annual review should also focus on the eight factors that BOEM considers for potential lease sale sites for oil and gas. See *Frequently Asked Questions for the RFI and National Program*, *supra* note 69.

150. U.S. DEP’T OF THE INTERIOR & BUREAU OF OCEAN ENERGY MGMT., *supra* note 148, at 1.

151. See *supra* notes 116–24 and accompanying text.

the need for public approval.¹⁵² Public comment should be open at various stages of the process and should be weighed heavily by government agencies in their analysis.¹⁵³ However, public comment must cease after the lease is issued.¹⁵⁴

Additionally, a shorter statute of limitations should be established for public claims against offshore wind development.¹⁵⁵ In the Cape Wind litigation, the project was halted for over ten years due to public opponents of the project, some focused solely on the view of the project from the mainland.¹⁵⁶ Allowing such claims not only deters future development,¹⁵⁷ but it also dissipates resources on current projects.¹⁵⁸ Because flukes in the process will not be ironed out until projects have completed the entire process, the statute of limitations to bring claims against development should extend for only two years after the date the Request for Information on the specific project closes.¹⁵⁹ In order for the offshore wind energy plan to be effective, it must be predictable.¹⁶⁰ Utilizing federal-state task forces will also help serve the industry's interest in predictability by further promoting public input in the early stages of the process.¹⁶¹

The most crucial difference between the five-year proposed program and the current BOEM plan is the beginning of the process.¹⁶² Instead of BOEM initiating the planning and analysis for potential development sites,¹⁶³ states will choose prospective sites and commence analysis. States will consult with BOEM and other federal agencies prior to the actual initiation of the four-step process already implemented by BOEM.¹⁶⁴ Agencies will be able to use all

152. See *supra* notes 116–24 and accompanying text.

153. See *OCS Oil and Gas Leasing, Exploration, and Development Process*, *supra* note 65 (demonstrating the open comment periods in the process).

154. *Id.*

155. See Zeller, *supra* note 119 (discussing the difficulties of a six-year statute of limitations period).

156. Katharine Q. Seelye, *Koch Brother Wages 12-Year Fight over Wind Farm*, N.Y. TIMES (Oct. 22, 2013), <http://www.nytimes.com/2013/10/23/us/koch-brother-wages-12-year-fight-over-wind-farm.html>.

157. See Zeller, *supra* note 119 (explaining the obstacles that wind projects and developers face).

158. *Id.*

159. See *OCS Oil and Gas Leasing, Exploration, and Development Process*, *supra* note 65.

160. See U.S. DEP'T OF ENERGY & U.S. DEP'T OF THE INTERIOR, *supra* note 10, at 34.

161. *Wind Energy Commercial Leasing Process*, *supra* note 101.

162. See *infra* note 163 and accompanying text.

163. See *OCS Oil and Gas Leasing, Exploration, and Development Process*, *supra* note 65.

164. See U.S. DEP'T OF ENERGY & U.S. DEP'T OF THE INTERIOR, *supra* note 10, at 35.

of the information gathered by the state in order to make a final decision on whether to start the process.¹⁶⁵ Allowing states to conduct the preliminary studies will be more efficient.¹⁶⁶ BOEM and other agencies can focus on areas that are proven to be acceptable as potential sites.¹⁶⁷ State Environmental Impact Statements should be required for each potential area and, if approved, states can then move forward with assessment instead of BOEM.¹⁶⁸ State-created Environmental Impact Statements will allow for stricter environmental assessment prior to federal government involvement.¹⁶⁹

B. *Current Market Forces and Increased Economic Incentives Can Improve Development Pursuant to the Proposed Program*

1. *The Increasing Demand for Offshore Wind and Its Decreasing Cost Are Impacting the Renewable Energy Market*

One of the most important aspects of any type of energy production is the cost, and unsurprisingly, wind energy is more economically efficient than fossil fuels.¹⁷⁰ As the technology behind renewable energy production improves, the cost of development decreases.¹⁷¹ In contrast, fossil fuel production relies on resources that vary in cost;¹⁷² for example, easily accessible coal is depleted, requiring coal-burning production to access harder to reach coal, which requires

165. See *BOEM and State of California Launch California Offshore Renewable Energy Task Force*, *supra* note 53.

166. See *id.*

167. See U.S. DEP'T OF ENERGY & U.S. DEP'T OF THE INTERIOR, *supra* note 10, at 6.

168. See *OCS Oil and Gas Leasing, Exploration, and Development Process*, *supra* note 65.

169. See *BOEM and State of California Launch California Offshore Renewable Energy Task Force*, *supra* note 53.

170. Tom Randall, *Wind and Solar Are Crushing Fossil Fuels with Investment*, 66 *Energy & Climate Rep. (BNA)* 14, 66 *ECR* 14 (BL) (Apr. 6, 2016).

171. See Philip Bump, *There's a Lot to Unpack in Just One of Donald Trump's Answers About Energy Policy*, WASH. POST (May 26, 2016), https://www.washingtonpost.com/news/the-fix/wp/2016/05/26/theres-a-lot-to-unpack-in-donald-trumps-answers-about-energy-policy/?utm_term=.a59d034559f3. Since the early 1980s, the cost of wind energy has declined over 90%. *The Cost of Wind Energy in the U.S.*, AM. WIND ENERGY ASS'N, <https://www.awea.org/falling-wind-energy-costs> (last visited Nov. 11, 2017).

172. Bump, *supra* note 171.

additional expense.¹⁷³ “As the technology has improved and demand for renewable energy has risen, costs have fallen.”¹⁷⁴

Improvements in technology allow for increased energy production and eliminate learning curve costs that originally caused investor apprehension.¹⁷⁵ “Turbines today are bigger, produce much more electricity and are deployed on much larger sites than in the past. The result is more clean power and extra revenue.”¹⁷⁶ Wind turbines are now more efficient due to new foundation designs that can be built in deeper water farther offshore.¹⁷⁷

More investors are looking to offshore wind than ever before.¹⁷⁸ “The gold rush has begun.”¹⁷⁹ The offshore wind energy market is becoming increasingly competitive due to the rising number of key players,¹⁸⁰ including international companies.¹⁸¹ For example, Dong Energy, a Denmark oil and gas company, bought offshore leases off the coasts of Massachusetts and New Jersey, and Statoil, an oil and gas company headquartered in Norway, has also secured a lease off the coast of New York.¹⁸²

Economies of scale are playing a major role in decreasing renewable energy prices.¹⁸³ According to Bloomberg New Energy Finance, “[e]very time global wind power doubles, there is a 19 percent drop in cost.”¹⁸⁴ Over the past fifteen years, the wind energy industry has doubled in size four different times.¹⁸⁵ The offshore

173. *Id.*

174. Stanley Reed, *Offshore Wind Moves into Energy's Mainstream*, N.Y. TIMES (Feb. 7, 2017), <https://www.nytimes.com/2017/02/07/business/energy-environment/renewables-offshore-wind-green-power-dong.html?r=0>.

175. *See id.*; *see also* Tara Patel, *IEA: Fossil Fuels Losing Cost Advantage over Solar, Wind*, 38 Int'l Env't Rep. (BNA) 91–92, 38 IER 91–92 (BL) (Aug. 31, 2015) (discussing the significant drop in renewable energy production costs and noting that offshore wind energy costs are expected to drop).

176. Reed, *supra* note 174.

177. N.Y. STATE ENERGY RESEARCH & DEV. AUTH., BLUEPRINT FOR THE NEW YORK STATE OFFSHORE WIND MASTER PLAN 6 (2016), <https://www.nysedra.ny.gov/-/media/Files/Publications/Research/Biomass-Solar-Wind/New-York-State-Offshore-Wind-Blueprint.pdf>. Turbines constructed farther from the shore and deeper in the ocean pick up stronger winds and cause less visual impact to homeowners. *Id.*

178. *See* Dumaine, *supra* note 56.

179. *Id.*

180. *See id.*

181. *Id.*

182. *Id.*

183. Randall, *supra* note 170, at 14.

184. *Id.* at 16. As of April 2016, clean energy investment outnumbered fossil fuel investment two to one. *Id.* at 14.

185. *Id.* at 15.

wind energy industry has the potential to grow even faster than in recent years based on the current market.¹⁸⁶

2. Economic Incentives Are Fundamental for Offshore Wind to Thrive

The current incentives for offshore wind¹⁸⁷ should be extended indefinitely in order to further development. While the proposed program shortens the estimated time that leasing and development will take, the cost of a project is daunting to developers and, without tax credits, developers will be less willing to commence projects.¹⁸⁸ However, the price of offshore wind is dramatically decreasing, making it more easily attainable despite the absence of government subsidies.¹⁸⁹ In order for offshore wind energy to succeed, it must be cost effective.

V. STATES WILL PLAY AN INCREASED ROLE THROUGH THE PROPOSED PROGRAM TO HELP PROMOTE OFFSHORE WIND, REGARDLESS OF THE CURRENT POLITICAL CLIMATE

In accordance with the proposed five-year program, states will further the offshore renewable energy cause by utilizing policies already in existence.¹⁹⁰ The lack of a national energy policy has not stopped states from initiating and pursuing a renewable energy industry.¹⁹¹ “[T]he federal government . . . [does not have the power to] repeal State Renewable Portfolio Standards (RPS) or any State renewable or offshore wind [energy] legislation.”¹⁹² Twenty-nine

186. *See id.* at 14–15.

187. *See supra* notes 126–33 and accompanying text.

188. *See supra* note 127 and accompanying text.

189. Jeff McMahon, *Wind Energy Will See More Tech Breakthroughs, Falling Costs, Experts Predict*, FORBES (Feb. 27, 2017, 12:01 AM), <https://www.forbes.com/sites/jeffmcmahon/2017/02/27/experts-predict-more-technological-advances-and-cost-reductions-for-wind-energy/#2e164f356d43> (summarizing research conducted by Lawrence Berkeley National Laboratory, which predicts cost reductions in offshore wind of 38%–40% by 2050 and suggesting that even without the PTC in upcoming years, wind will still be the cheapest form of energy); Jess Shankleman & Brian Parkin, *Wind Power Blows Through Nuclear, Coal as Costs Drop at Sea*, BLOOMBERG (Mar. 9, 2017, 6:46 AM), <https://www.bloomberg.com/news/articles/2017-03-09/wind-power-blows-through-nuclear-coal-as-costs-plunge-at-sea>.

190. Paul Dvorak, *What a Trump Presidency Means for Offshore Wind*, WINDPOWER ENGINEERING & DEV. (Nov. 15, 2016), <http://www.windpowerengineering.com/featured/business-news-projects/editorial/blog/trump-presidency-means-offshore-wind/>.

191. *Id.*

192. *Id.*

states and Washington D.C. have adopted RPS.¹⁹³ Other states without RPS have vowed to promote renewable energy resources through renewable energy goals.¹⁹⁴

On June 1, 2017, President Trump announced the United States' withdrawal from the Paris Climate Accord.¹⁹⁵ The Paris Accord is an international pact entered into by 195 countries, and is intended to help slow global warming.¹⁹⁶ Despite the Trump administration's effort to drastically halt renewable energy system implementation, several states, cities, and towns have pledged to follow the Paris Accord and have set their own individual energy goals.¹⁹⁷ Many other states have joined the United States Climate Alliance (Climate Alliance), a coalition formed by New York, Washington, and California which aims to meet the goals of the Paris Accord, in response to the withdrawal.¹⁹⁸ Additionally, a group called "We Are Still In," made up of states, cities, investors, and businesses, vows to continue support for the Paris Accord, and intends to continue working to keep the promises the United States made in 2015.¹⁹⁹

Each state's statutes and standards will be crucial to the development of individual state plans for utilizing offshore wind energy. Under the proposed process, the basic elements of a state plan include calculating annual percentages for renewable energy and offshore wind energy specifically through RPS, creating incentives based on the state's RPS, developing a state plan for assessment, and utilizing task forces to execute the plan.²⁰⁰

193. Jocelyn Durkay, *State Renewable Portfolio Standards and Goals*, NAT'L CONF. ST. LEGISLATURES (Aug. 1, 2017), <http://www.ncsl.org/research/energy/renewable-portfolio-standards.aspx>.

194. *Id.*

195. Camila Domonoske & Colin Dwyer, *Trump Announces U.S. Withdrawal from Paris Climate Accord*, NPR (June 1, 2017, 5:45 PM), <http://www.npr.org/sections/thetwo-way/2017/06/01/530748899/watch-live-trump-announces-decision-on-paris-climate-agreement>.

196. *Id.*

197. Michael Greshko, *Map Shows Growing U.S. 'Climate Rebellion' Against Trump*, NAT'L GEOGRAPHIC (June 8, 2017), <http://news.nationalgeographic.com/2017/06/states-cities-usa-climate-policy-environment/>.

198. *Id.*

199. *Id.*; "We Are Still In" Declaration, WE ARE STILL IN, <https://www.wearestillin.com/we-are-still-declaration> (last visited Nov. 11, 2017).

200. *See infra* Sections V.A–D.

A. *State Renewable Portfolio Standards*

While many states have adopted renewable energy standards, the goals of individual states vary drastically.²⁰¹ One way for states to increase their impact is to adopt a standard RPS.²⁰² For example, Congress could set a minimum renewable energy goal for states, and individual states could set goals surpassing the minimum requirements voluntarily. Because a set minimum standard does not align with the new administration's priorities,²⁰³ states need to push for higher standards.

For this proposed five-year program, a minimum requirement for coastal states will be enacted with RPS of 25% by 2030. This requirement is an average standard compared to the coastal states that already have RPS.²⁰⁴ Hawaii has the nation's boldest goal of 100% by 2045.²⁰⁵ Both California and New York have increased their goals to 50% by 2030.²⁰⁶ However, some coastal states do not have RPS, such as Florida and Louisiana.²⁰⁷

A mandatory minimum requirement will set a baseline for all coastal states to improve the process for development of not only offshore wind, but for all renewable energy sources. Because coastal states are able to benefit from offshore wind, their standards should be higher than those in non-coastal states in the beginning of the program.²⁰⁸ For coastal states, the RPS should include carve-out provisions for offshore wind energy.²⁰⁹ At this time Maryland and New Jersey are the only two states that have adopted carve-out requirements.²¹⁰ Carve-out provisions will help states further their own energy goals while promoting offshore wind energy.²¹¹

201. See *infra* notes 205–07 and accompanying text.

202. See *infra* notes 204–08 and accompanying text.

203. See *supra* notes 15–16 and accompanying text.

204. See *infra* notes 205–07, 213 and accompanying text.

205. Durkay, *supra* note 193.

206. *Id.*

207. *Id.*

208. See *supra* notes 50–56 and accompanying text.

209. See JENNIFER TODD ET AL., INT'L ECON. DEV. COUNCIL, CREATING THE CLEAN ENERGY ECONOMY: ANALYSIS OF THE OFFSHORE WIND ENERGY INDUSTRY 17, 72 (Liz Thorstensen & Tye Libby eds., 2013), http://www.iedconline.org/clientuploads/Downloads/edrp/IEDC_Offshore_Wind.pdf. Carve-outs “are an additional requirement for a portion of the total renewable energy to come from a specific source such as offshore energy.” *Id.* at 72.

210. Durkay, *supra* note 193.

211. See TODD ET AL., *supra* note 209, at 17, 48, 72.

Maryland's RPS was established in 2004 and has been revised since.²¹² Under Maryland's RPS, the state must procure 25% of its energy electricity from renewable energy sources by 2020.²¹³ The state has designated yearly percentages for the different tiers of renewable energy sources.²¹⁴ Under the Maryland Offshore Wind Energy Act of 2013, the state's RPS carves out 2.5% of Maryland's total retail electricity sales for offshore wind energy.²¹⁵ In May, Maryland approved two offshore wind projects.²¹⁶ Two companies, U.S. Wind and Skipjack Offshore Energy, are seeking to install the turbines and claim that energy production could begin as soon as 2020.²¹⁷ The farms have faced opposition since their approval, including an amendment from United States Congressman Andy Harris which is designed to prevent construction based on aesthetic concerns.²¹⁸

B. *State Incentives*

Because cost plays a major role in the success of offshore wind,²¹⁹ coastal states should enact individual tax credits to benefit offshore projects. The number of policies and incentives vary dramatically by state.²²⁰ California has the highest number of renewable energy

-
212. *Renewable Energy*, MD. PUB. SERV. COMMISSION, <http://www.psc.state.md.us/electricity/renewable-energy/> (last visited Nov. 11, 2017); Lauren Tyler, *Maryland Kicks Off Application Period for Offshore Wind Development*, N. AM. WINDPOWER (Feb. 26, 2016), <http://nawindpower.com/maryland-kicks-off-application-period-for-offshore-wind-development>.
213. Pamela Wood, *After Veto Override, Renewable Energy Sourcing Accelerates in Maryland*, BALT. SUN (Feb. 2, 2017, 9:03 PM), <http://www.baltimoresun.com/news/maryland/politics/bs-md-senate-renewable-veto-20170202-story.html>.
214. MD. CODE ANN., PUB. UTIL. § 7-703(b) (West 2017).
215. Tyler, *supra* note 212.
216. Timothy Cama, *Maryland Approves Two Offshore Wind Farms*, HILL (May 11, 2017, 4:49 PM), <http://thehill.com/policy/energy-environment/333021-maryland-approves-two-offshore-wind-farms>.
217. Julian Sadur, *Off-Shore Wind Energy Hearings Underway in Maryland*, WMDT (Mar. 15, 2017, 3:39 PM), <http://www.wmdt.com/news/maryland/off-shore-wind-energy-hearings-underway-in-maryland/395665055>.
218. Rachel Siegel, *Rep. Andy Harris Erects New Obstacle in Path of Md. Wind-Farm Projects*, WASH. POST (July 22, 2017), https://www.washingtonpost.com/local/md-politics/rep-andy-harris-erects-new-obstacle-in-path-of-md-wind-farm-projects/2017/07/22/68d1d9d0-6d5b-11e7-96ab-5f38140b38cc_story.html?utm_term=.10f31c9f2e4b.
219. See TODD ET AL., *supra* note 209, at 5.
220. See *Find Policies & Incentives by State*, DATABASE ST. INCENTIVES FOR RENEWABLES & EFFICIENCY, <http://www.dsireusa.org/> (last visited Nov. 11, 2017) (displaying an interactive chart of the United States with the number of renewable energy policies and incentives per state).

policies and incentives and, unsurprisingly, Massachusetts and New York are among the highest on the East Coast.²²¹

The proposed program will require coastal states to provide separate tax incentives for offshore wind projects to enhance appeal. The tax incentives will be based on the amount of energy the proposed wind farm could produce compared to the state's RPS. For example, New York's RPS is already 50% by 2030,²²² so a large wind farm would receive increased tax credits and funding in order to begin production and help the state reach its goal. Meanwhile, a wind farm of the same size would receive fewer tax incentives in states such as Virginia that only have a voluntary renewable energy portfolio goal rather than RPS,²²³ and these states would have to adopt the mandated RPS of 25% by 2030 according to this proposed program. Because the incentives will correlate with the percentage of the state's RPS goal that the project would fulfill, states with a smaller RPS would offer lower incentives. In essence, the greater the impact that the wind farm is projected to have on helping its resident state reach its renewable goals, the greater the tax incentives should be.

On January 10, 2017, New York Governor Andrew Cuomo announced that New York plans to build the state's largest offshore wind farm.²²⁴ This is one of the steps Governor Cuomo is taking to meet his goal of providing 50% of New York's power from renewable energy sources by 2030.²²⁵ The project's price tag is expected to be \$740 million, and Deepwater Wind expects to be eligible for an Investment Tax Credit.²²⁶

In August 2016, Massachusetts Governor Charlie Baker signed into law "An Act to Promote Energy Diversity" (the Act).²²⁷ The Act

221. *Id.* New York and Florida have the highest number of renewable energy policies and incentives on the East Coast with 113 and 104 respectively, followed by North Carolina with 102, and Massachusetts with 99. *Id.*

222. Durkay, *supra* note 193.

223. *Id.*

224. Kit Kennedy, *New York State Plans 2400 MW of Offshore Wind by 2030*, NAT. RESOURCES DEF. COUNCIL (Jan. 10, 2017), <https://www.nrdc.org/experts/kit-kennedy/new-york-state-plans-2400-mw-offshore-wind-2030>.

225. *Id.*

226. Diane Cardwell, *Nation's Largest Offshore Wind Farm Will Be Built Off Long Island*, N.Y. TIMES (Jan. 25, 2017), <https://www.nytimes.com/2017/01/25/business/energy-environment/long-island-power-authority-offshore-wind.html> ("[Deepwater Wind's Chief Executive] Mr. [Jeffrey] Grybowski expressed confidence that the project would qualify for an investment tax credit . . . that is worth 24 percent of the [wind farm] development's cost.").

227. H.R. 4568, 189th Gen. Court, Reg. Sess. (Mass. 2016); *Bill H.4568*, MASS. LEGISLATURE, <https://malegislature.gov/Bills/189/House/H4568> (last visited Nov.

requires Massachusetts “energy distribution companies to enter into long-term contracts for 1,600 megawatts” of electricity from offshore wind by 2027.²²⁸ It also allows clean energy companies to submit bids for state funding through requests for proposals (RFPs) to the Department of Public Utilities.²²⁹ The winning offshore wind energy bid is scheduled to be selected between December 4, 2017, and February 23, 2018.²³⁰ Increased tax incentives and increased state funding pursuant to the proposed program will further the viability of the offshore wind industry.

C. State Planning

Specific state ocean planning will help states implement standards and tax incentives into law, as well as streamline the permitting and leasing process.²³¹ Under the proposed program, each coastal state will develop its own ocean management plan. The plans will help streamline the site assessment stage of the process by efficiently identifying potential areas for development.²³²

Massachusetts is one state guiding the way for offshore wind energy development.²³³ In 2009, Massachusetts released the Massachusetts Ocean Management Plan (the 2009 Plan).²³⁴ The

11, 2017); *see also* Chelsea Harvey, *Massachusetts Just Gave a Huge Boost to the Offshore Wind Industry*, WASH. POST (Aug. 8, 2016), https://www.washingtonpost.com/news/energy-environment/wp/2016/08/08/at-long-last-the-u-s-offshore-wind-industry-is-ramping-up/?utm_term=.36bc8cb8fedf (discussing the Act and its impact on offshore wind energy).

228. Elise Harmon, *In 2016, Massachusetts Passed a Landmark Renewable Energy Bill*, NEW ENG. CLIMATE CHANGE REV. (Dec. 19, 2016), <https://www.northeastern.edu/climate-review/?p=294>.

229. *Id.*

230. *Id.*

231. *See* SUSAN F. TIERNEY & STEPHEN CARPENTER, ANALYSIS GRP., INC., PLANNING FOR OFFSHORE ENERGY DEVELOPMENT 11–18, app. 3, at A3-6 (2013), http://www.analysisgroup.com/uploadedfiles/content/insights/publishing/planning_for_ocean_energy_development_complete.pdf.

232. *See supra* notes 162–69 and accompanying text.

233. *See* Iulia Gheorghiu, *East Coast States Take Lead in Offshore Wind After Paris Accord*, MORNING CONSULT (July 19, 2017), <https://morningconsult.com/2017/07/19/east-coast-states-take-lead-offshore-wind-paris-accord/>; *see also infra* notes 234–43 and accompanying text (describing Massachusetts’s developments in offshore wind energy).

234. *Massachusetts Ocean Management Plan*, MASS. GOV’T, <http://www.mass.gov/eea/waste-mgmt-recycling/coasts-and-oceans/mass-ocean-plan/> (last visited Nov. 11, 2017). In 2008, Massachusetts also enacted the Green Communities Act, which requires that 15% of the state’s electricity be from renewable energy by 2020, and the Global Warming Solutions Act, which creates a framework in order to establish economy-wide reductions in greenhouse gas emissions. David Danielson, *Finally, a*

2009 Plan designated two Wind Energy Areas off the state's coast, the Gosnold Wind Energy Area and the Martha's Vineyard Energy Area.²³⁵ Massachusetts implemented a detailed process for designating Wind Energy Areas.²³⁶ These areas were first chosen "based on the presence of a suitable wind resource and water depth, and the absence of conflict with other uses or sensitive resources."²³⁷ If areas passed this exclusionary step, they were examined in order "to determine if the cumulative effect of existing uses and/or natural resources would result in a higher or lower level of compatibility and/or conflict with existing uses or natural resources."²³⁸ Visual impact was also a huge factor in determining areas; sections located further away from established population areas were considered less likely to negatively impact homeowner and visitor views.²³⁹ The 2009 Plan "achieves the objective of minimizing visual impacts by locating the largest facilities as far away from as many people as possible."²⁴⁰

The 2009 Plan Wind Energy Areas were state-designated, but since 2009, no plans have been proposed for the areas.²⁴¹ The Plan also stated that several areas located in federal waters were "potentially suitable locations" for commercial-scale wind.²⁴² The Plan was revised in 2015 and further helps to address the opportunity for renewable energy.²⁴³

Good Energy Policy, MIT TECH. REV. (Aug. 7, 2008), <https://www.technologyreview.com/s/410570/finally-a-good-energy-policy/>.

235. 1 MASS. EXEC. OFFICE OF ENERGY & ENVTL. AFFAIRS, MASSACHUSETTS OCEAN MANAGEMENT PLAN 2-2 (2009), <http://public.dep.state.ma.us/EEA/eeawebsite/mop/final-v1/v1-complete.pdf>.

236. *See id.* at app. 3, 3-1.

237. *Id.* Exclusionary factors included whether the area was located within one "mile of shoreline (MLW) of inhabited land," known as the "[b]uffer from development and near-coast activities," whether the area had "[h]igh concentrations of whales," and whether the area was needed for "[w]ater-dependent marine uses," such as "Coast Guard-designated navigation areas" and "[a]reas of high commercial fishing effort and value." *Id.*

238. *Id.*

239. *Id.* at app. 3, 3-20.

240. *Id.*

241. 1 MASS. EXEC. OFFICE OF ENERGY & ENVTL. AFFAIRS, 2015 MASSACHUSETTS OCEAN MANAGEMENT PLAN 2-2 (2015), <http://www.mass.gov/eea/docs/eea/oceans/ocean-plan/2015-ocean-plan-v1-complete-low-res.pdf>.

242. *Id.*

243. Allison Lorenc, *Massachusetts Releases the MA Ocean Management Plan 2.0*, CONSERVATION L. FOUND. (Feb. 6, 2015), <http://www.clf.org/blog/massachusetts-releases-ma-ocean-management-plan-2-0-leading-nation-comprehensive-ocean-planning-management/>.

In 2016, New York launched the New York State Offshore Wind Master Plan (the Master Plan).²⁴⁴ The goal of the Master Plan is to reduce offshore development risk and lower costs to benefit the state.²⁴⁵ To lower costs, New York aims to undertake various pre-development activities, such as “resource assessment, baseline environment studies, and site characterization.”²⁴⁶ The Master Plan states that the pre-development steps taken will result in quality findings that can be utilized by BOEM and other agencies.²⁴⁷ The steps will ease the site assessment and characterization process, and will help investors and lenders with financing development.²⁴⁸

D. *Federal-State Task Forces*

Federal-state task forces have been initiated in fourteen different states.²⁴⁹ They are made up of federal, state, local, and tribal officials.²⁵⁰ These task forces must be expanded and utilized. In the proposed program, task forces will help facilitate offshore wind development by assisting with site assessment and characterization. These task forces will provide a bridge between federal, state, local, and tribal officials. The proposed program will require federal-state task forces in all coastal states. Because offshore wind development is subject to a wide array of regulations at all levels,²⁵¹ task forces are needed in order to guide projects.

Due to the complexity of regulations, energy task forces should meet consistently. The proposed program will require task forces to meet semi-annually, with an opportunity to meet quarterly if unexpected problems arise. This will allow for task forces to not only help with environmental studies and site assessment, but also to provide feedback to developers, investors, and other stakeholders. Because the EIS step of the process is deeply intricate and often one

244. N.Y. STATE ENERGY RESEARCH & DEV. AUTH., *supra* note 177, at 5. The plan is expected to be complete by the end of 2017. *Id.*

245. *Id.* at 7.

246. *Id.* at 15.

247. *Id.*

248. *See id.*

249. *Fact Sheet*, *supra* note 5 (stating that there are fourteen renewable energy task forces).

250. *Id.*; *State Activities*, BUREAU OCEAN ENERGY MGMT., <https://www.boem.gov/Renewable-Energy-State-Activities/> (last visited Nov. 11, 2017).

251. *See Regulatory Framework*, BUREAU OCEAN ENERGY MGMT., <https://www.boem.gov/Regulatory-Framework/> (last visited Nov. 11, 2017).

of the most daunting,²⁵² task forces should work on assessing prospective wind energy sites with interested developers. Project stakeholders should have the opportunity to meet with task force officials during task force meetings in order to streamline the process and prevent legal and regulatory problems from arising.

VI. CONCLUSION

Successful offshore wind development is taxing due to the vast number of agencies and regulations involved in the process. Challenges to offshore wind are aggravated by the current political climate, and the lack of government subsidies dissuades prospective stakeholders from investing.²⁵³ The proposed offshore wind leasing program provides several avenues for improving the current process through state action.²⁵⁴ States will play a crucial role in offshore wind development over the next four years and the proposed program shows how the inclusion of state governments can further the cause, despite the new administration's contrasting motives and policies.²⁵⁵

BOEM has developed a stricter, more consistent regulatory process for oil and gas leasing.²⁵⁶ Because oil and gas leasing on the Outer Continental Shelf is subject to the same agency regulations that offshore wind development is, oil and gas leasing processes and respective timetables should be mirrored.²⁵⁷ For at least the next four years, states will likely be the only drivers of renewable energy.²⁵⁸ Both federal and state governments have already enacted several policies concerning offshore wind energy.²⁵⁹ By strengthening these policies and increasing efficiency and consistency, the future of offshore wind energy can remain bright. There are several additional ways for states to further the cause of offshore wind without federal government backing.²⁶⁰ The proposed federal and state integrated program introduces an approach to offshore wind that should be implemented to ensure successful offshore wind energy development.

252. See *National Environmental Policy Act Review Process*, U.S. ENVTL. PROTECTION AGENCY, <https://www.epa.gov/nepa/national-environmental-policy-act-review-process> (last updated Jan. 24, 2017).

253. See, e.g., Ryan & Dlouhy, *supra* note 15 (discussing the Trump administration's aversion to offshore wind power); Shankleman & Parkin, *supra* note 189 (highlighting that wind power is unsubsidized in the United States).

254. See *supra* Part V.

255. See *supra* Part V.

256. See *supra* Part III.

257. See *supra* notes 5–9 and accompanying text; see also *supra* Part III (discussing the current regulatory processes for energy production).

258. See *supra* Part V.

259. See *supra* Parts III, V, and Section IV.A.

260. See *supra* Part V.