

WIND OVER NORTH CAROLINA WATERS: THE STATE'S PREPAREDNESS TO ADDRESS OFFSHORE AND COASTAL WATER-BASED WIND ENERGY PROJECTS*

JOSEPH J. KALO** AND LISA C. SCHIAVINATO***

Nationally, there is great interest in placing wind turbines in coastal and ocean waters. At this time, no such facilities exist. However, major projects are either underway or being planned for siting on the east coast. The ocean waters off the coast of North Carolina and the waters of its large internal sounds are attracting interest because of their high wind resource potential. Therefore, the State needs to be adequately prepared to address legal issues and ecological and other concerns that future water-based wind energy proposals will present. In this Article, the authors discuss water-based wind energy projects currently under development in the United States, a number of technical limitations affecting the near-future prospect of such projects being located in North Carolina coastal or ocean waters, the newly promulgated regulations for leasing the federal Outer Continental Shelf for such projects, the necessity of the State being prepared to use the Coastal Zone Management Act consistency requirement to protect state interests, and the state's existing regulatory structure, coastal development rules, and submerged lands leasing statutes impacting water-based wind energy. The authors conclude that if the State wishes to promote this form of renewable energy, certain agency jurisdictional conflicts need to be removed, some coastal development policies need to be modified, and its submerged lands leasing statutes need to be revised. The authors also discuss proposed legislation which would have addressed some of these issues but which failed to pass the North Carolina General Assembly in its 2009 Session.

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** Graham Kenan Professor of Law, University of North Carolina School of Law at Chapel Hill. Co-Director of the North Carolina Coastal Resources Law, Planning and Policy Center. B.A., Michigan State University, 1966; J.D., University of Michigan, 1968.

*** Coastal Law, Policy and Community Development Specialist, North Carolina Sea Grant College Program, and Co-Director, North Carolina Coastal Resources Law, Planning and Policy Center. B.A., University of South Florida, 1998; J.D., University of Florida, 2001.

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This proposed legislation is likely to be reintroduced in the 2010 Session.

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INTRODUCTION

As an alternative to traditional carbon-based energy sources, many look to the wind as a potential source of renewable energy. When wind energy developers, policy makers, and the public contemplate potential sites for wind energy facilities, many eyes turn toward coastal and offshore areas where the wind is “always blowing.” A simplistic view of water-based wind energy facilities is: There is all that available open space out there. Wind resources are strong and consistent in coastal and offshore waters.¹ The energy source is non-polluting. And, water-based wind energy projects have a significant advantage over land-based projects: the developer of a water-based project only has to deal with one landowner, either the State or, if the project is sited more than three miles from shore, the federal government.² Land-based projects may require dealing with a large number of individual landowners in order to acquire the acreage necessary for an economically viable wind energy project. Finally, looking to Europe, we see that it already has significant offshore wind energy generating facilities.³ In light of these facts, many ask why this country is slow to develop the wind energy potential of its coastal and ocean waters.

A careful examination of water-based wind energy, however, demonstrates that putting wind turbines and related equipment in coastal and ocean waters presents more, and different, technical and other difficulties than putting wind turbines and facilities on land.

1. According to the wind resources mapping project conducted by TrueWind Solutions, LLC for the North Carolina State Energy Office, North Carolina has significant wind resources along the Outer Banks. See N.C. Solar Center, The Coastal Wind Initiative, <http://www.ncsc.ncsu.edu/coastalwindinitiative.php> (last visited Aug. 10, 2009).

2. Submerged Lands Act of 1953, 43 U.S.C. § 1301(a)(2) (2000) (defining “lands beneath navigable waters” as to give states title to submerged lands and resources within three miles of coastline); Outer Continental Shelf Lands Act of 1953, 43 U.S.C. § 1331(a) (2006) (defining “outer Continental Shelf” as submerged land located beyond lands beneath navigable waters). For reasons unimportant to this Article, the Outer Continental Shelf begins nine miles off the coast of Texas and west coast of Florida. JOSEPH J. KALO ET AL., COASTAL AND OCEAN LAW: CASES AND MATERIALS 422 (3d ed. 2007).

3. See Wind Service Holland, <http://home.wxs.nl/~windsh/offshore.html> (last visited May 5, 2009).

Furthermore, similar complexities also exist regarding the infrastructure that will be required to transmit the energy from the turbines to land and then to connect the produced energy to the power grid to be used in homes and businesses.⁴

Unlike land-based wind energy facilities, placing an array of wind turbines in coastal and ocean waters is similar to putting a field of wind turbines in the middle of Yellowstone National Park. Coastal and ocean waters are public waters held in trust for the people of the state⁵ and, similar to a park, are open to multiple uses, such as fishing, commercial and recreational boating, swimming, and other water activities.⁶ Therefore, siting wind energy facilities in coastal and ocean waters raises a number of important potential user conflicts which require careful analysis of what would be gained and what would be lost if a wind farm⁷ is sited in a particular location.⁸

4. See generally Kevin C. Higgins et al., *Utility-Related Statutory & Regulatory Barriers*, in *COASTAL WIND: ENERGY FOR NORTH CAROLINA'S FUTURE* 207, 207–19 (2009) available at http://www.climate.unc.edu/coastal-wind/Coastal%20Wind-%20Energy%20for%20NC2019s%20Future.pdf/at_download/file (describing the regulatory barriers to water-based wind energy projects); see also Kevin C. Higgins & Caitlin M. Collins, *Utility Transmission Infrastructure*, in *COASTAL WIND: ENERGY FOR NORTH CAROLINA'S FUTURE*, *supra*, at 195, 195, 201–02, 205 (describing the inadequacy of the existing offshore utility transmission structure to accommodate more than a total of 260 MW of wind energy generated electricity).

5. 15A N.C. ADMIN. CODE 7H.0207(a) (2007) (describing public trust areas); see also *Gwathmey v. State ex rel. Dep't of Env't, Health, & Natural Res.*, 342 N.C. 287, 301, 464 S.E.2d 674, 682 (1995) (explaining that land lying under navigable waters falls within the public trust doctrine).

6. See, e.g., N.C. GEN. STAT. § 1-45.1 (2007) (“[P]ublic trust rights’ means those rights held in trust by the State for the use and benefit of the people of the State in common. They are established by common law as interpreted by the courts of this State. They include, but are not limited to, the right to navigate, swim, hunt, fish, and enjoy all recreational activities in the watercourses of the State and the right to freely use and enjoy the State’s ocean and estuarine beaches and public access to the beaches.”).

7. In what appears to be an effort to make offshore wind energy generating facilities seem as benign as possible, industry terminology has been transitioning over the last few years. Originally described as “wind farms,” perhaps to create images of waving fields of wheat in the public eye, such projects are now described as “wind parks,” with wind towers presumably replacing trees and suggesting a place for a family outing. Compare Cape Wind, America’s First Offshore Wind Farm on Nantucket Sound, <http://www.capewind.org/> (last visited May 5, 2009) (using the term “wind farm”), with Bluewater Wind Delaware Project, <http://www.bluewaterwind.com/delaware.htm> (last visited May 5, 2009) (using the term “wind park”).

8. See generally Charles H. Peterson et al., *Environmental Impacts, Synergies, and Use Conflicts*, in *COASTAL WIND: ENERGY FOR NORTH CAROLINA'S FUTURE*, *supra* note 4, at 37, 37–70 (discussing potential conflicts with military airspace, navigation corridors, heavily fished areas, recreational activities, submerged cultural resources, mineral resources, ocean dumping grounds, and visual and aesthetic values).

The recently promulgated federal regulations governing leasing of federal ocean waters and submerged lands for wind energy projects provide the necessary framework for developing their wind energy potential. What is now essential is that North Carolina's legal structure, applicable to development in either federal or state waters, be evaluated to assure that the relevant state agencies have the necessary legal tools and are fully prepared to address any water-based wind energy facilities proposal. Although the state is moving in that direction, our assessment is that some agency jurisdictional conflicts still exist and should be removed, certain existing agency rules may impede wind energy development and need to be revised, and state submerged lands leasing statutes need to be amended to provide clear authority to lease state-owned submerged lands for such projects.

Part I of this Article will briefly examine the general characteristics of a number of projects proposed to be sited in either federal waters or state waters to show how the characteristics of water-based wind projects make it unlikely that large scale wind energy facilities will be placed in ocean waters off North Carolina's coast during the next decade. What is more likely to occur is a proposal to place wind turbines in the sounds of North Carolina, an idea for which there is substantial support in the North Carolina General Assembly.⁹ Despite the growing enthusiasm for water-based

9. This support is reflected by the North Carolina General Assembly's directing the University of North Carolina ("UNC") to conduct a study of wind energy in the sounds, a study expanded at the request of the General Assembly to include ocean-based wind energy. Section 9.12 of the Appropriations Act of 2008 states:

SECTION 9.12. The University of North Carolina shall study the feasibility of establishing wind turbines in the Pamlico and Albemarle Sounds. The study shall include an analysis of energy production potential (including the resulting benefits due to a reduction in dependence on fossil fuel combustion for generation of electricity), siting, ecological impacts, and statutory or regulatory barriers to construction and operation of one or more wind turbines and associated support and interconnection facilities in the coastal sounds. The study shall also consider the feasibility and potential synergistic benefits of co-siting wind turbines and artificial oyster reefs.

The Board of Governors shall use available funds from its budget in conducting this study and may apply for, receive, or accept grants and contributions from any source for the purposes of conducting the study. The Board of Governors shall report the results of this study to the House Committee on Energy and Energy Efficiency and the Senate Committee on Agriculture/Environment/Natural Resources by July 1, 2009.

The Current Operations and Capital Improvements Appropriations Act of 2008, 2008 N.C. Sess. Laws 107 § 9.12. The authors participated in this study. Phase one of the study

wind energy, it will not be as simple as finding a technically feasible location for wind turbines. Significant resource conflict issues and user conflict issues may make it challenging to find an acceptable location in the sounds or ocean waters. But, the General Assembly's and the public's growing interest in such projects means that the State needs to be fully prepared to respond to applications for leases and permits for such projects.

Part II of this Article will discuss the legal framework that will govern any proposal for wind development projects in federal waters off the coast of North Carolina and will examine the regulations issued by Minerals Management Service ("MMS") on April 22, 2009.¹⁰ It will be critical for the State of North Carolina to ensure that its interests are adequately taken into account during any federal review of a project proposal. Although a project proposed for federal waters is under the jurisdiction of the federal government, under the consistency provision of the Coastal Zone Management Act ("CZMA"),¹¹ North Carolina has an opportunity to make sure that wind energy development in federal waters that may affect the state's coastal lands, natural resources, and waters is done in a manner consistent with the state's interests. In addition, because energy generated by wind turbines located in federal waters must be transmitted to receiving facilities on land, the necessary transmission lines will pass through state waters and across or under state coastal lands. These transmission lines will require not only federal permits but also permits and authorizations from the State.¹²

To maximize the opportunity afforded the state by the CZMA consistency requirement, North Carolina must be adequately

was completed in 2009. The UNC report, *Coastal Wind: Energy for North Carolina's Future*, was submitted to the House and Senate committees in June 2009. The authors wrote the chapter entitled *Legal Framework, Issues and Policy Concerns*. See Joseph J. Kalo & Lisa C. Schiavinato, *Legal Framework, Issues and Policy Concerns*, in COASTAL WIND: ENERGY FOR NORTH CAROLINA'S FUTURE, *supra* note 4, at 221, 221-61. A draft of that chapter was provided to the committees in March 2009.

10. Renewable Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf; Final Rule, 74 Fed. Reg. 19,638 (Apr. 29, 2009). See *infra* text accompanying note 82 for more about the MMS and its role in the administration of Outer Continental Shelf resources.

11. See Coastal Zone Management Act of 1972 § 307(c), 16 U.S.C. § 1456(c) (2006).

12. Relevant state permits or authorizations include a Coastal Area Management Act ("CAMA") permit. N.C. GEN. STAT. § 113A-118(a) (2007) (requiring a permit before developing in any area of "environmental concern"); *id.* § 143B-282(1)(u) (providing the Environmental Management Commission of North Carolina the power to provide section 401 state water quality certificates); *id.* § 146-11 (authorizing a submerged lands easement); *id.* § 62-101(a) (providing a State Utilities Commission certificate of environmental compatibility and public convenience and necessity).

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prepared to address proposals for wind energy projects proposed to be sited in state coastal and ocean waters, for it is those state requirements applicable to such projects that form the policies with which federal projects also must be consistent. For this purpose and the independent one of locating such facilities in state waters, Part III of this Article will examine the current state of the law in North Carolina.

Having a coherent regulatory framework for the development of wind energy policies is important for the future. Part III will show state agency jurisdictional conflicts exist which could impede creation of sound, consistent state wind energy policies.¹³ Part III will first discuss the nature of the conflicts and the proposed legislation aimed at removing them and providing the necessary coherent regulatory framework.

The North Carolina Coastal Resources Commission (“CRC”) is the regulatory and permitting authority for most types of development along the North Carolina coast and in its coastal and ocean waters. Therefore, the CRC’s existing authority and rules that impact any proposed wind energy project are given special attention in Part III. Our recommendation is that the North Carolina Coastal Resources Commission re-examine these rules and remove unnecessary impediments to water-based wind energy development while, at the same time, making sure that the public interests in coastal and ocean waters are protected.

Part IV will discuss the potential impediment to wind energy development in state waters created by the existing statutes governing the leasing of state-owned submerged lands. These statutes, dating back to 1959, were not crafted with wind energy in mind. Although section 146-10 of the General Statutes of North Carolina might provide the authority for the State Property Office to issue the necessary lease, that statute authorizes only leases of the submerged land and does not expressly authorize leases that cover the water column and air space. Our recommendation is that the State enact a new, comprehensive submerged lands leasing statute specifically tailored to the use of state-owned submerged lands for wind energy projects. We also recommend that the Department of Administration proactively prepare a detailed wind energy submerged land lease to accompany such a statute.

13. See *infra* Part III.A.1.

I. WHAT'S HAPPENING WITH WATER-BASED WIND ENERGY

A. *Developments Outside North Carolina*

Presently, no operational wind facilities are in place in coastal or federal waters, but the wind-based energy industry hopes to begin constructing offshore facilities by 2010.¹⁴ The projects in the planning and permitting stage include the Cape Wind project, to be located off the coast of Cape Cod in Massachusetts,¹⁵ and the Bluewater Wind project, to be located approximately eleven miles off the coast of Delaware.¹⁶ The Cape Wind project in particular has engendered considerable local opposition from some quarters: fishermen, sailors, some environmentalists, boaters, and others.¹⁷ However, despite the opposition, Cape Wind seems to be on a path toward receiving the permits necessary to commence the project.¹⁸

When completed, Cape Wind will consist of approximately 130 wind turbine generators¹⁹ capable of producing approximately 454

14. See, e.g., Cape Wind, *supra* note 7 (stating Cape Wind Associates, LLC hopes to begin turbine manufacturing and construction on a wind farm in Nantucket Sound in 2010).

15. See, e.g., MINERALS MANAGEMENT SERVICE, U.S. DEP'T OF THE INTERIOR, CAPE WIND ENERGY PROJECT FINAL ENVIRONMENTAL IMPACT STATEMENT, at E-1, E-2 (Jan. 2009) [hereinafter CAPE WIND EIS], available at <http://www.mms.gov/offshore/AlternativeEnergy/PDFs/FEIS/Cape%20Wind%20Energy%20Project%20FEIS.pdf> (providing a complete description of the Cape Wind project and maps showing its planned location in Nantucket Sound).

16. Bluewater Wind Delaware Project, *supra* note 7. The Delaware Assembly has a Renewable Portfolio Standard requiring that twenty percent of the state's electricity needs come from renewable sources by 2019. DEL. CODE ANN. tit. 26, § 354 (2009). To help meet this goal, the General Assembly also directed Delmarva Power, the local utility, "to contract with new power resources that will guarantee stable prices for electricity." Bluewater Wind Delaware Project, *supra* note 7. In 2006, Delmarva Power issued a Request for Proposals for a new power plant in the state, and Bluewater Wind submitted a proposal for a wind park. *Id.* In 2008, Bluewater Wind entered into a power purchase agreement with Delmarva Power. *Id.* The wind park, once constructed and operational, will have a projected capacity of 450 megawatts ("MW"). *Id.*

17. See, e.g., Peter B. Brace, *Nantucket Shows Signs of Split on Cape Wind*, CAPE COD TODAY, Mar. 12, 2008, <http://www.capecodtoday.com> (search for "Nantucket shows signs of split," then follow article link); Mike Seccombe, *Fishing Concerns Dominate Cape Wind Hearings*, VINEYARD GAZETTE ONLINE, Mar. 14, 2008, <http://www.mvgazette.com/article.php?15714>; Mike Seccombe, *Two Sides Debate Cape Wind Plan*, VINEYARD GAZETTE ONLINE, Sept. 25, 2007, <http://www.mvgazette.com/article.php?912>. Despite concerns about harm to birds from some quarters, the National Audubon Society determined that studies show minimal threat to birds. *Assessing the Threat to Birds*, ONLINE NEWS HOUR, Nov. 16, 2005, http://www.pbs.org/newshour/indepth_coverage/science/wind_power/threattobirds.html.

18. CAPE WIND EIS, *supra* note 15, § 1.2.

19. *Id.* at E-2; see also Cape Wind, Project at a Glance, <http://www.capewind.org/article24.htm> (last visited May 5, 2009).

megawatts (“MW”) of energy.²⁰ The 3.6 MW wind turbine generators will be located approximately 0.3 to 0.5 miles apart and the total array spread over twenty-four square miles.²¹ Although the towers will extend only 257.5 feet above the water surface, each wind tower blade will reach 440 feet above the water.²² This wind facility will be located in federal waters in Nantucket Sound, sheltered on the north by Cape Cod, to the west by Martha’s Vineyard, to the south by Nantucket Island, and to the east by the Great Sound Shoal.²³ One reason Nantucket Sound was chosen as the location of this project is that it is relatively sheltered from significant Atlantic Ocean wave action and extreme storm waves.²⁴ Its closest distance to shore will be 4.7 miles, and its furthest will be approximately 11 miles.²⁵ This means a number of turbines will be visible from some points on the shores of Cape Cod and Martha’s Vineyard but not from Nantucket. The cost of construction for this project is estimated to be as high as \$2 billion.²⁶

20. CAPE WIND EIS, *supra* note 15, at 2-1.

21. See MINERAL MANAGEMENT SERVICE, U.S. DEP’T OF THE INTERIOR, CAPE WIND ENERGY PROJECT DRAFT ENVIRONMENTAL IMPACT STATEMENT 1-4 (2004) [hereinafter CAPE WIND DRAFT EIS], available at <http://www.nae.usace.army.mil/projects/ma/ccwf/section1.pdf>.

22. CAPE WIND EIS, *supra* note 15, at 2-2 fig.2-1.1-1.

23. CAPE WIND DRAFT EIS, *supra* note 21, at 1-3 to 1-4, 4-1; see also CAPE WIND EIS, *supra* note 15, at E-3 (providing a map of the proposed Cape Wind location); Cape Wind, Project Siting and Visual Simulations, <http://www.capewind.org/article7.htm> (last visited May 5, 2009) (providing a map of the proposed Cape Wind location).

24. Walter Brooks, *Long Island Offshore Wind Farm Scuttled; Cape Wind Predicted This Outcome 4 Years Ago*, CAPE COD TODAY, Aug. 24, 2007, http://www.capecodtoday.com/blogs/index.php/2007/08/24/long_island_offshore_wind_farm_scuttled?blog=109.

25. CAPE WIND DRAFT EIS, *supra* note 21, at 1-3 to 1-4; CAPE WIND EIS, *supra* note 15, at E-3.

26. Over the past six years, the cost estimates for the Cape Wind project continued to rise. See, e.g., GLOBAL INSIGHT, IMPACT ANALYSIS OF THE CAPE WIND OFF-SHORE RENEWABLE ENERGY PROJECT ON LOCAL, STATE, AND REGIONAL ECONOMIES (2003), available at <http://www.mms.gov/offshore/PDFs/CWFiles/68.pdf> (projecting that total costs for the project would total at least \$1.4 billion); Patrick Cassidy, *Report Big Win for Cape Cod Wind Farm*, CAPE COD TIMES, Jan. 17, 2009, <http://www.capecodonline.com/apps/pbcs.dll/article?AID=/20090117/NEWS/901170316> (mentioning a projected cost of \$2 billion for the Cape Wind project); Press Release, Save Our Sound, The Federal Draft Environmental Impact Statement for Cape Wind: What’s Changed Since 2004 Army Corps of Engineers’ Review? (Jan. 14, 2008), http://www.saveoursound.org/site/DocServer/DEIS_Backgrounder_1.14.08.pdf?docID=321 (underscoring that Cape Wind’s costs have risen to \$1.7 billion since its initial proposal).

In 2006, Bluewater Wind LLC (“Bluewater Wind”)²⁷ proposed a similar project, estimated to cost \$1.6 billion,²⁸ to be located in federal waters, at least eleven miles off the coast of Delaware in the Atlantic Ocean.²⁹ At this distance, the turbines would be barely visible from the Delaware coastline.³⁰ The future of this project is uncertain. The original project proposed the installation of more than 100 wind turbine generators capable of producing approximately 450 MW of electricity,³¹ however, the June 2008 power purchase agreement between Bluewater Wind and an onshore receiving utility company will only support the construction of fifty-five to seventy wind turbines.³² If Bluewater Wind decides to build more than seventy turbines, it will have to find another purchaser for the generated power.³³ Another factor is the uncertain financial future of Bluewater Wind itself. In February 2009, Babcock & Brown, the Australia-based company that owns virtually all of Bluewater Wind, announced plans to liquidate its assets in order to satisfy creditor claims.³⁴ This means that Bluewater Wind will need to find new financial backing for the Delaware project.³⁵

A major difference between the Cape Wind project and the Bluewater Wind project is that the Bluewater Wind project is the first one proposed for open ocean waters; for that reason, it will confront significant location and construction challenges. Sea conditions in an ocean location may be one reason for the September 2007 official cancellation of a similar project proposed by the Long Island Power

27. Bluewater Wind is owned by Babcock & Brown, an Australia-based company. *Babcock & Brown Buys Bluewater Wind Power Firm*, REUTERS, Sept. 30, 2007, <http://www.reuters.com/article/innovationNews/idUSSYD29636020070930>.

28. *Bluewater to Work with Delaware on Wind Farm*, REUTERS, Nov. 12, 2007, <http://uk.reuters.com/article/environmentNews/idUKN0823936520071112>.

29. See *Bluewater Wind Delaware Project*, *supra* note 7.

30. *Id.*

31. *Id.*

32. See Jeff Montgomery, *Bluewater Wind Owner's Financial Woes Threaten Offshore Project*, THE NEWS JOURNAL, Feb. 9, 2009, at A1, available at <http://www.windaction.org/news/19887>.

33. See *id.*

34. *Id.* On March 13, 2009, Babcock & Brown Ltd., the publicly traded parent company of Bluewater Wind, “collapsed into bankruptcy.” Aaron Nathans, *Bluewater Wind Project OK for Now; Plenty of Time to Line Up Financing, Experts Say*, THE NEWS JOURNAL, Mar. 18, 2009, at A7, available at <http://www.wind-watch.org/news/2009/03/18/bluewater-wind-project-ok-for-now-plenty-of-time-to-line-up-financing-experts-say/>.

35. See Nathans, *supra* note 34; see also Montgomery, *supra* note 32.

Authority (“LIPA”) to be sited off the South Shore of Long Island.³⁶ In 2003, when Cape Wind evaluated that site, the president of Cape Wind wrote a letter to LIPA stating “that the anticipated sea conditions in the Target Area pose unacceptable conditions. Both the significant wave and extreme storm wave are nearly three times that associated with current state-of-the-art offshore wind projects.”³⁷ The official LIPA reason for cancellation was the high cost of construction.³⁸ The original projected cost in 2003 was \$200 million but eventually ballooned to \$811 million by the time LIPA decided to cancel the project.³⁹

Other states, such as New Jersey and Rhode Island, are also pursuing wind energy development off their coasts. New Jersey has adopted a renewable energy incentive program⁴⁰ and an offshore wind rebate program for the installation of meteorological towers,⁴¹ in addition to awarding a \$4 million grant to Garden State Offshore Energy for a 345.6 MW offshore wind facility tentatively to be located sixteen miles southeast of Atlantic City.⁴² In Rhode Island, interest in wind energy development in coastal and offshore waters will likely rise as the State seeks to achieve its renewable energy portfolio standard of sixteen percent by 2020.⁴³ To help meet this goal, Governor Donald Carcieri announced in September 2008 that the company Deepwater Wind was selected to construct a wind energy project off Rhode Island’s coast.⁴⁴ The project will provide an

36. For a full description of the project, see Renewable Energy Long Island, Long Island Wind Park Description, http://www.lioffshorewindenergy.org/index.php?module=pagemaster&PAGE_user_op=view_page&PAGE_id=24 (last visited May 5, 2009).

37. Brooks, *supra* note 24.

38. Bruce Lambert, *LIPA Chairman Advises a ‘No’ on Offshore Windmills*, N.Y. TIMES, Aug. 24, 2007, available at <http://www.nytimes.com/2007/08/24/nyregion/24lipa.html?scp=1&sq=lipa%20chairman%20advises&st=cse>.

39. *Id.*

40. OFFICE OF CLEAN ENERGY, N.J. BOARD OF PUBLIC UTILITIES, RENEWABLE ENERGY INCENTIVE PROGRAMS, <http://www.njcleanenergy.com/renewable-energy/programs/renewable-energy-incentive-program> (last visited May 5, 2009).

41. New In the Matter of the Offshore Wind Rebate Program for the Installation of Meteorological Towers, Docket No. EO08110971 (N.J. Board of Public Utilities Order Nov. 26, 2008), available at <http://njcleanenergy.com/files/file/Board%20Orders/11-21-08-8A.pdf>.

42. Press Release, New Jersey Board of Public Utilities, Board of Public Utilities Approves Grant of \$4 Million for Offshore Wind Project Proposal (Oct. 3, 2008), <http://www.njcleanenergy.com/files/file/Press%20Releases/20081003.pdf>.

43. See R.I. GEN. LAWS § 39-26-4 (2006).

44. Press Release, Office of the Governor, State of R.I., Carcieri Names Deepwater Wind as Developer for Rhode Island’s Off-Shore Wind Farm (Sept. 25, 2008), <http://www.ri.gov/press/view.php?id=7202>.

estimated 1.3 million megawatt hours per year, which is approximately fifteen percent of the electricity used in the state.⁴⁵

States are attracted to wind energy not only as a potential alternative energy source, but also as a potential generator of royalty revenues earned from the leasing of state-owned submerged lands. For example, Texas issued leases to state-owned submerged lands to two different companies.⁴⁶ Superior Renewable Energy, which subsequently was acquired by Babcock & Brown,⁴⁷ obtained the largest lease covering 39,900 acres of submerged lands located off Padre Island.⁴⁸ Texas officials stated that the State expected “to earn anywhere from \$34 million to more than \$100 million from the lease.”⁴⁹

Despite projections for having some of these proposed projects online by 2009,⁵⁰ no wind turbines have been placed in Texas waters. In fact, the Superior Renewable Energy lease was abandoned in 2007, with the company citing the multibillion dollar cost for offshore construction as too high.⁵¹ Texas would like to enter into more leases but is having trouble finding takers.⁵² Recent hurricane activity in the Gulf of Mexico may have made other companies shy of putting

45. *Id.*

46. *Texas Bid Could be First U.S. Offshore Wind Farm*, RENEWABLEENERGYWORLD.COM, Oct. 31, 2005, <http://www.renewableenergyworld.com/rea/news/article/2005/10/texas-bid-could-be-first-u-s-offshore-wind-farm-38618> (reporting on a lease with Galveston-Offshore Wind, LLC, and explaining Texas’s unique control over expansive submerged lands).

47. *Babcock & Brown Cancels Wind Farm off Texas*, REUTERS, June 13, 2007, <http://www.reuters.com/article/bondsNews/idUSN1335705620070613>. Babcock & Brown, the owner of a majority share of Bluewater Wind, is in the process of liquidating its assets. *See infra* note 64.

48. *Texas Grants Lease for Gulf of Mexico Project*, RENEWABLEENERGYWORLD.COM, May 12, 2006, <http://www.renewableenergyworld.com/rea/news/article/2006/05/texas-grants-lease-for-gulf-of-mexico-wind-project-44884>.

49. *Id.* In 2005, state officials stated they expected to “receive a minimum of \$26.5 million in royalties over the course of the 30-year lease” granted to Wind Energy Systems Technology (“WEST”) for “46 square kilometers of water off Galveston Island.” Erin Wayman, *The Wind Over the Waves: Is Offshore Wind Power the Renewable Energy of the Future?*, GEOTIMES, Apr. 2008, http://www.geotimes.org/apr08/article.html?id=feature_wind.html.

50. Associated Press, *Texas Plans Offshore Wind Farms*, FOX NEWS, Nov. 7, 2005, <http://www.foxnews.com/story/0,2933,174806,00.html>.

51. *Babcock & Brown Cancels Wind Farm off Texas*, *supra* note 47.

52. *See* Posting of Kate Galbraith to Green Inc. blog, *A Few Snags but Hopes are Still High for Offshore Wind in Texas*, N.Y. TIMES, <http://greeninc.blogs.nytimes.com/2008/10/10/a-few-snags-but-hopes-are-still-high-for-offshore-wind-in-texas/> (Oct. 10, 2008, 7:37 EST).

billions of dollars in the path of future coastal storms that may have the strength of Hurricanes Katrina or Ike.

Each of the projects described above is proposed for location in waters relatively near the shore because of technology and cost limitations. Current technology allows wind facilities to be located in waters deeper than twenty to thirty meters.⁵³ In fact, existing technology would allow wind turbines to be sited in waters up to fifty meters in depth,⁵⁴ but at the present time, it is prohibitively expensive to construct the foundations for and to locate facilities in water much deeper than twenty to thirty meters.⁵⁵ For that reason, most of the 1470 MW of nearshore and offshore wind energy capacity in Europe has been constructed in shallow waters that are less than twenty meters in depth.⁵⁶ Until the cost of deeper water technology drops significantly, twenty to thirty meters is close to the economically feasible limit for offshore wind energy facilities.⁵⁷ Water depth is significant to North Carolina because along the coast in the area of Nags Head, the twenty-meter line at times is within three miles of the shore.⁵⁸ At other places offshore, it is ten to fifteen miles out.⁵⁹ That

53. See Peterson et al., *supra* note 8, at 46 (“Currently available technology and cost considerations limit anchoring of monopiles to waters less than 30m in depth.”). But see Soren Juel Petersen et al., *Foundation Concepts, in* COASTAL WIND: ENERGY FOR NORTH CAROLINA’S FUTURE, *supra* note 4, at 143 (“Current turbine installations are at depths of around 35-38 meters.”); Peter Fairley, *Wind Power That Floats*, TECHNOLOGY REVIEW, Apr. 2, 2008, <http://www.technologyreview.com/energy/20500/> (discussing new developments in wind technology that would enable the installation of wind turbines in waters deeper than twenty meters and far from shore).

54. However, none of the planned projects in depths over forty-five meters use a fixed foundation. These projects are using experimental floating technology. In fact, only one existing fixed foundation project is in waters as deep as forty-five meters and only one new project using a fixed foundation is planned for waters as deep as forty meters. See Wind Holland Service, *supra* note 3. But see Wayman, *supra* note 49.

55. Fairley, *supra* note 53; see also Emily Waltz, *Offshore Wind May Power the Future*, SCIENTIFIC AMERICAN, Oct. 20, 2008, available at <http://www.sciam.com/article.cfm?id=offshore-wind-may-power-the-future&page=2> (“‘Going into deeper water is not something we’re comfortable doing yet,’ says Jim Lanard, a spokesperson for Bluewater Wind, a company that has proposed a wind park 13.2 miles (21.2 kilometers) from the Delaware shore that will employ monopiles to depths of about 75 feet (23 meters).”).

56. Of the thirty operational facilities, only three are in waters deeper than twenty-four meters. One project located in waters 108 meters deep is an experimental floating turbine, which is not connected to the electrical grid. Wind Service Holland, *supra* note 3. Europe has 1.492 GW operational and additional 2.797 GW under construction. *Id.* For the 2.797 GW projects under construction, the depth information is incomplete. However, several projects are planned for waters between twenty to thirty meters. *Id.*

57. See Peterson et al., *supra* note 8, at 46; Fairley, *supra* note 53.

58. See Peterson et al., *supra* note 8, at 52 fig.2.3, 55 fig.2.5 (showing twenty and thirty meter depth lines along the North Carolina coast).

means that water-based wind generating facilities may be visible from the shore.

B. Challenges to Siting Water-Based Wind Energy Facilities and their Relevance to North Carolina

Practical and economic factors make significant development of offshore wind energy difficult. First, at the present time, there is a limited supply of the necessary construction equipment.⁶⁰ Second, construction costs, operational costs, and maintenance costs of offshore wind facilities could be double that of land-based wind facilities.⁶¹ Third, some turbine manufacturers are unsure of the durability of their equipment when placed in deep water.⁶² Fourth, even with current subsidies, the cost of generated offshore wind energy is not competitive with traditional onshore energy facilities.⁶³ If oil prices continue to fall as they did in late 2008 and early 2009, the differential may be even greater. Finally, the chaos in the financial markets and money supply may make it more difficult to find financial backers for wind energy projects.⁶⁴ State renewable energy portfolio standards,⁶⁵ federal and state government subsidies and

59. *Id.* Another limitation is that the receiving onshore facility must be within twenty miles of the wind turbine generating facility due to the limited technical capability of transmitting energy by means of buried underwater transmission lines.

60. Fairley, *supra* note 53.

61. Wayman, *supra* note 49 (“[C]ost can be 50 to 100 percent higher for offshore wind than onshore wind.”); *see also* Posting of Ken Belson to City Room blog, *Waft of Patience Is Felt in the Offshore Winds*, <http://cityroom.blogs.nytimes.com/2008/09/24/waft-of-patience-is-felt-in-the-offshore-winds/> (Sept. 24, 2008, 15:14 EST) (quoting the chief executive of FPL Energy of Florida’s observation that “building wind turbines in deep water is two to three times more expensive than building on land”).

62. Belson, *supra* note 61.

63. For example, the projected cost of one MW of electricity generated by the Cape Wind project is \$122, as opposed to approximately \$66 for existing traditional onshore facilities. CAPE WIND EIS, *supra* note 15, app. f, at 17; *see also Feds Say Cape Wind Would Cost Two to Three Times Current Electrical Prices*, REUTERS, Jan. 17, 2008, <http://www.reuters.com/article/pressRelease/idUS176354+17-Jan-2008+PRN20080117> (detailing the significantly higher costs associated with offshore wind power).

64. In February 2009, in a controlled breakup and liquidation, Babcock & Brown, the Australia-based company owning almost all of Bluewater Wind, agreed to liquidate all of its assets to satisfy claims of creditors. This action left Bluewater Wind needing new financial backing for the proposed Delaware offshore project. *See* Montgomery, *supra* note 32; *see also* Galbraith, *supra* note 52 (explaining that one Texas offshore wind energy company lost two potential investors—Lehman Brothers and Wachovia—in the 2008–2009 financial downturn).

65. State renewable energy portfolio standards specify “that electric utilities generate a certain amount of electricity from renewable sources” by a given date. Pew Center on Global Climate Change, Renewable Portfolio Standards, http://www.pewclimate.org/what_s_being_done/in_the_states/rps.cfm (last visited May 5, 2009). These standards can

stimulus funds, and federal and state tax credits will continue to drive the interest in wind energy⁶⁶ and could provide sufficient incentives to direct some capital into offshore projects. However, the lower costs of land-based wind energy may prove more attractive. For example, the company that abandoned the Texas submerged lands lease moved its energies and efforts to developing a land-based wind facility.⁶⁷

Potential user conflicts may also impact the development of nearshore and offshore wind energy facilities. Wind energy generating equipment and offshore and onshore support facilities and infrastructure may present a number of user conflicts. In areas heavily dependent upon coastal tourism and those with shorelines filled with very expensive vacation homes, the aesthetic impacts may be a significant concern.⁶⁸ Commercial and recreational navigation and fishing, military airspace operations, marine mammal populations, seabird activity, the locations of beach quality sand and other non-living natural resources, and other water activities may also conflict with the siting of wind facilities in particular water locations.⁶⁹ Difficult choices may have to be made between energy independence and other uses of coastal and ocean resources.

Based on the information available for existing and proposed offshore wind energy projects, a number of characteristics are relevant in assessing their near-term feasibility. First, they will be

be either binding standards or nonbinding goals. *Id.* North Carolina has binding standards with the goal of 12.5% by 2021 for most utility providers. N.C. GEN. STAT. § 62-133.8(b)(1) (2007).

66. See RYAN WISER ET AL., U.S. DEPARTMENT OF ENERGY, ANNUAL REPORT ON U.S. WIND POWER INSTALLATION, COST, AND PERFORMANCE TRENDS: 2007, at 42–44 (2008), available at http://www1.eere.energy.gov/windandhydro/pdfs/wiser_data_report_summary_2007.pdf (discussing various incentives).

67. *Babcock & Brown Cancels Wind Farm off Texas*, *supra* note 47. At that time, Babcock & Brown stated it still planned to construct a \$700 million, 157 land-based wind turbine farm in a more remote part of Texas. *Id.* However, since then Babcock & Brown has suffered severe financial setbacks. See *supra* note 64. The present state of this project is unknown.

68. See, e.g., Elizabeth Mehren, *Cape Cod Wind Project May Be Headed for Pasture*, LOS ANGELES TIMES, May 5, 2006, at A4 (indicating that opponents of the Cape Wind project cite concerns about damaging the seascape and deterring tourism); Mark Svenvold, *Wind-Power Politics*, N.Y. TIMES, Sept. 14, 2008, at MM77 (indicating that opponents of the Cape Wind project argued that it would ruin the “pristine seascape”); Karen Lee Ziner, *Offshore Harvest of Wind Is Proposed for Cape Cod*, N.Y. TIMES, Apr. 16, 2002, at F3 (providing that opponents of the Cape Wind project argued that it would “scare away tourists”).

69. See generally Peterson et al., *supra* note 8, at 55–58, 63–70 (discussing potential conflicts with military airspace, navigation corridors, heavily fished areas, recreational activities, submerged cultural resources, mineral resources, ocean dumping grounds, and visual and aesthetic values).

extraordinarily expensive to construct—in the range of \$800 million to \$2 billion, if not higher in some areas.⁷⁰ Second, wind turbines will occupy a large water area, in the range of twenty to thirty square miles,⁷¹ and present a number of potential user conflicts.⁷² Third, it is not economically feasible to place the turbines in waters much deeper than twenty to thirty meters using existing technology; therefore, the facilities, for better or worse, may be visible from the shore. Fourth, and perhaps most significant, placing turbines farther from shore in open ocean waters may pose unacceptable risks for present state-of-the-art technology.⁷³ The high incidence of tropical storms, hurricanes, and nor'easters will make offshore North Carolina especially challenging.⁷⁴ Fifth, without a costly upgrade, the existing coastal onshore infrastructure, to which any water-based wind energy facility must connect, is simply inadequate to accommodate a large-scale wind project.⁷⁵ Finally, it is unclear how the economic downturn in the United States will inhibit investment in expensive offshore wind development, but it is likely investment will be impacted.

In the next decade, if there are serious proposals for wind energy projects in North Carolina, it is more likely such projects will be proposed for location in the larger, more protected sounds. However, there are complications associated with locating turbines in the sounds as well. In addition to the usual user and natural resource

70. The Cape Wind project is estimated to cost \$2 billion. Press Release, Alliance to Protect Nantucket Sound, (Jan. 14, 2008), http://www.saveoursound.org/site/DocServer/DEIS_Background_1.14.08.pdf?docID=321. The Bluewater Wind project to be located off the coast of Delaware is estimated to cost \$1.6 billion. *Bluewater to Work with Delaware on Wind Farm*, *supra* note 28. The cancelled Long Island project costs were projected to be over \$800 million. Belson, *supra* note 61.

71. See CAPE WIND DRAFT EIS, *supra* note 21, at 1-4 (describing the Cape Wind project area as twenty-four square miles, which is slightly smaller than the original twenty-eight square miles).

72. Brooks, *supra* note 24 (explaining Horseshoe Shoal in Nantucket Sound is an attractive wind farm site because it is shallow and protected from storm waves).

73. See, e.g., Barbara Barrett, *U.S. Opens the Way for Those Who Would Harness the Wind*, NEWS & OBSERVER (N.C.), Apr. 23, 2009, at A1 (describing hazards associated with location of wind facilities in offshore ocean waters).

74. Since 1886, “there have been 951 tropical cyclones that have been recorded in the Atlantic Ocean and the Gulf of Mexico.” N.C. STATE UNIV., STATE CLIMATE OFFICE OF N.C., HURRICANES, <http://www.nc-climate.ncsu.edu/climate/hurricane.php> (last visited May 31, 2009). “Approximately 166 or 17.5% of those tropical cyclones passed within 300 miles of North Carolina.” *Id.*

75. In the northern coast, which is the service territory of Dominion North Carolina Power, the existing infrastructure is suitable only for a small 10 MW project; in the middle coast, which is the service territory of Progress Energy Carolinas, the infrastructure would accommodate a total of 250 MW. See Higgins & Collins, *supra* note 4, at 195.

conflicts,⁷⁶ significant areas of the Pamlico Sound are restricted military space,⁷⁷ in some of which any structures greater than 200 feet are prohibited.⁷⁸ Four meters is the minimum depth required for barges used to install wind turbine monopile foundations.⁷⁹ This requirement eliminates a significant portion of the sounds as potential wind turbine facility sites.⁸⁰ However, assuming the user conflict issues can be resolved and depth requirements are met, the sounds may provide a sheltered space within a reasonable distance from the shore and the electrical grid.

II. WIND TURBINE FACILITIES IN FEDERAL WATERS AND THE CZMA CONSISTENCY REQUIREMENT

A. *The Legal Framework Governing Offshore Wind Development in Federal Waters*

Section 388 of the Energy Policy Act of 2005 grants authority to the Secretary of the Interior to issue leases and grant easements for alternative energy activities on the Outer Continental Shelf (“OCS”).⁸¹ Minerals Management Service (“MMS”), which also administers the OCS oil and gas leasing process, is the bureau within

76. Other potential conflicts involve protection of critical fish habitat, minimization of bird and bat strikes, and protection of cultural resources located in sound waters.

77. See 15A N.C. ADMIN. CODE 3R.0102(3) (2008); see also *id.* at 3I.0110 (explaining that certain coastal and inland fishing waters in North Carolina allow only restricted activities); MILITARY DANGER ZONES AND RESTRICTED AREAS, PICTORIAL DEPICTION OF RESTRICTED MILITARY AREAS OFF N.C. COAST, http://www.ncfisheries.net/maps/03R_0102_MDZRA/MDZRA-map_package.pdf (last visited May 5, 2009) (mapping military danger zones and restricted areas); Peterson et al., *supra* note 8, at 63–65 (discussing airspace restriction and providing maps of restricted airspace).

78. See Peterson et al., *supra* note 8, at 64–65 (wind turbines may disrupt radar signals); 14 C.F.R. § 77.13 (2008) (requiring FAA approval for structures taller than 200 feet); 14 C.F.R. § 77.23 (describing the standards for determining obstructions to air navigation). Although the regulations do not absolutely prohibit structures taller than 200 feet in restricted air space, the U.S. Marine Corps would object to any such structures proposed for location in restricted air space of Pamlico Sound. David Plummer, Regional Airspace Coordinator, Marine Corps Installations, East, Camp Lejeune, North Carolina, Remarks to the North Carolina Coastal Resources Commission (Sept. 25, 2008).

79. See Petersen et al., *supra* note 53, at 145 (suggesting the use of a heavy-lift vessel with a draft of 4.5 meters); Stanley R. Riggs & Dorothea V. Ames, *Geologic Framework of North Carolina's Coastal System*, in COASTAL WIND: ENERGY FOR NORTH CAROLINA'S FUTURE, *supra* note 4, at 151, 172 fig.4.16 (excluding areas of 4 meters or less as possible wind turbine sites).

80. Harvey Seim & Gary Lackmann, *Wind Power Estimation*, in COASTAL WIND: ENERGY FOR NORTH CAROLINA'S FUTURE, *supra* note 4, at 7, 24 fig.1.12, 32.

81. 43 U.S.C. § 1337(p)(1) (2006). For a definition of the Outer Continental Shelf, see *supra* note 2.

the Department of the Interior designated to develop the leasing program for OCS renewable energy activities.⁸² On April 22, 2009, MMS issued its regulations.⁸³

The regulations contemplate the issuance of two different types of OCS alternative energy leases: commercial and limited.⁸⁴ A commercial lease provides, subject to necessary approvals, the right to produce, sell, and deliver power on a commercial scale from an alternative energy source.⁸⁵ Commercial leases grant a five-year term to conduct site assessment activities and a twenty-five year operations term.⁸⁶ A commercial lease can be renewed, but there is no automatic right of renewal.⁸⁷ MMS rejects the idea of an open-ended term, or automatic extensions and renewals, for alternative energy leases.⁸⁸ Leases with such provisions are used for OCS oil and gas production, with continuation contingent upon drilling and production.⁸⁹ However, in the context of evolving alternative energy technology, the concern is that an open-ended alternative energy lease could perpetuate inefficient and obsolete forms of alternative energy operations.⁹⁰ MMS's judgment is that a fixed-term lease will promote and ensure diligent development and use of the most efficient alternative energy technology.⁹¹ MMS selected twenty-five years as a lease term because it matches the anticipated duration of power purchase agreements in which alternative energy lessees and onshore utilities are likely to enter.⁹² Limited leases are for periods of up to five years and grant access and operational rights for activities that

82. See Renewable Energy and Alternative Uses of Existing Facilities on the Outer Continental Shelf, 74 Fed. Reg. 19,638 (Apr. 29, 2009).

83. *Id.*

84. 30 C.F.R. § 285.200 (2009).

85. *Id.* The rights would include the right to one or more project easements. *Id.* § 285.200(3)(b).

86. *Id.* § 285.235(a) (noting that a longer term may be negotiated).

87. See *id.* § 285.425–429.

88. See Alternative Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf, 73 Fed. Reg. 39,376, 39,394 (proposed July 9, 2008).

89. *Id.*

90. *Id.*

91. *Id.*

92. *Id.* A “purchase power agreement” is an agreement between a utility company and an independent power generator. For a complete discussion of the purposes and nature of purchase power agreements, see John J. Beardsworth, *Financing Power Projects In Emerging Markets: Purchase Power Agreements and Related Financial Issues*, PLI COMMERCIAL LAW & PRACTICE COURSE HANDBOOK (1998). Purchase power agreements are used by a utility to satisfy its renewable portfolio standards obligations. See, e.g., *Power Purchase Contract Signed for First Offshore U.S. Wind Farm*, WIND ENERGY NEWS, Aug. 2008, <http://www.orricks.com/fileupload/1449.htm> (last visited Aug. 25, 2009).

support production of energy but do not directly result in the general production of electricity or energy for sale, distribution, or other commercial use.⁹³ A company might seek such a lease to test energy-generating devices or collect data and other information.⁹⁴

B. Application of the CZMA Consistency Requirement to Wind Energy

Intended to provide large-scale, long-term commercial energy production, the issuance of an OCS alternative energy commercial lease and federal authorization of specific activities will be of significant concern to coastal states. For commercial leases, the regulations contemplate four stages: (1) lease issuance; (2) site assessment activities; (3) construction, operation, and conceptual decommissioning planning; and (4) actual decommissioning.⁹⁵ For purposes of both the required National Environmental Policy Act (“NEPA”) analysis⁹⁶ and the Coastal Zone Management review, MMS has combined stages (1) and (2) to reduce the time needed to review competitive leases.⁹⁷ This reduces the number of opportunities that an affected coastal state or states will have to voice any concerns and have them addressed.⁹⁸ Any concerns about either

93. Renewable Energy and Alternative Uses of Existing Facilities on the Outer Continental Shelf, 74 Fed. Reg. 19,638, 19,657 (Apr. 29, 2009). The regulations would allow the sale of power generating during technology testing, up to the limit specified in the lease. *See id.* For additional information on limited leases, see 30 C.F.R. § 285.236(a).

94. *See* Alternative Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf, 73 Fed. Reg. at 39,392. MMS, however, encourages companies to obtain commercial leases. *Id.* at 39,393.

95. *See id.* at 39,417–19. A conceptual decommissioning plan would be part of the construction, operation, and production plan; however, because decommissioning will take place years in the future, MMS must approve the lessee’s decommissioning application before any decommissioning may take place. *Id.* at 39,418; 30 C.F.R. § 285.626(b)(13) (2009). That application would be subject to appropriate NEPA, CZMA, and other reviews. *See* Alternative Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf, 73 Fed. Reg. at 39,417; *see also* 30 C.F.R. § 285.627.

96. National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321–4370 (2006). The heart of a NEPA analysis is the environmental impact statement mandated by 42 U.S.C. § 4332(c).

97. Renewable Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf, 74 Fed. Reg. at 19,685. MMS will prepare a NEPA document and CZMA consistency determination for the lease sale and site assessment activities. 30 C.F.R. § 285.611(b) (2009). If the actual site assessment plan shows changes different from the impacts identified in the documents MMS has prepared, then an additional consistency review may be necessary. *Id.* §§ 285.611(b), 285.612(a).

98. This is a change from what MMS first proposed. *See* Alternative Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf, 73 Fed. Reg. at 39,379, 39,387–88.

the lease issuance or site assessment activities will have to be presented prior to the lease sale.

1. Lease Issuance

At the leasing stage, section 307(c)(1)(A) of the CZMA requires that any federal activity, including lease sales, that is reasonably likely to affect any land or water use or natural resource of a state's coastal zone must be consistent "to the maximum extent practicable" with that state's federally approved coastal zone management plan ("CMP").⁹⁹ Although a sale itself, which is nothing more than a paper transaction, would not directly affect any such land or water use or natural resource, it starts a chain of events that includes construction, maintenance, operation, and decommissioning, which could affect such land or water uses or natural resources. MMS must take into account such effects if they are reasonably foreseeable.¹⁰⁰ If MMS determines the existence of such future effects, it must structure the terms of the lease in a manner that is consistent to the maximum extent practicable with the enforceable policies of the coastal state's CMP and submit a statement (consistency determination) to the State that the sale will be so conducted.¹⁰¹ If the State disagrees with MMS's consistency determination, then the State may file an objection.¹⁰² If an objection is filed, and MMS and the State continue to disagree, then the issue may have to be resolved through mediation or litigation in federal court.¹⁰³

What is important for coastal states, such as North Carolina, is having appropriate enforceable policies in their CMPs that would apply to wind energy projects. For a policy to be enforceable, it must be legally binding as opposed to advisory in nature.¹⁰⁴ Thus, the application of the CZMA consistency provision to OCS alternative

99. Coastal Zone Management Act of 1972, § 307(c)(1)(A), 16 U.S.C. § 1456(c)(1)(A) (2006); *see also* Renewable Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf, 74 Fed. Reg. at 19,651 (describing section 307(c)(1)(A) of the CZMA). The CZMA defines "coastal zone" as "the coastal waters . . . and the adjacent shorelands . . . strongly influenced by each other and in proximity to the shorelines of the several coastal states" in 16 U.S.C. § 1453(1). North Carolina uses the term "coastal area" to describe its coastal zone. *See* N.C. GEN. STAT. § 113A-103(2) (2007).

100. 15 C.F.R. §§ 930.11(g), 930.31(a) (2009) (defining the terms "effect on any coastal use or resource" and "Federal agency activity" respectively).

101. *See* 16 U.S.C. § 1456(c)(1)(A), (C); 15 C.F.R. § 930.35.

102. *See* 15 C.F.R. § 930.32 (defining the term "consistent to the maximum extent practicable" and limiting the circumstances under which federal agencies are permitted to deviate from maximum consistency); *Id.* §§ 930.41, 930.43.

103. *See* 16 U.S.C. § 1456(c)(1)(B).

104. *See* 15 C.F.R. § 930.11(h) (defining the term "enforceable policy").

energy leases is directly related to how a coastal state treats similar projects proposed for state waters. For example, if a state (a) believes it is important to preserve existing sand resources for use in beach nourishment projects and, (b) to do that, prohibits placement of structures in areas where those resources exist, then it should promulgate a rule or rules prohibiting such activities in its own state waters. If the State enacts such a rule, then the rule would be applicable not only to projects in state waters but also, under the CZMA consistency provision, to projects in federal waters.¹⁰⁵ In essence, the consistency provision directs a federal agency to treat a state's policies, which are legally binding as to activities within the State, as legally binding for the federal agency.

2. Site Assessment Activities

After the lease is issued, the next stage is for the lessee to submit a site assessment plan ("SAP").¹⁰⁶ The SAP describes the planned activities for site surveys, data gathering, and related facilities and operations.¹⁰⁷ This plan must be approved by MMS before any site assessment activities begin.¹⁰⁸ Under the process created by the MMS regulations, unless the SAP submitted by the holder of a commercially issued lease shows impacts different from those identified in the combined lease/site assessment NEPA document and CZMA consistency determination MMS prepared, the SAP would not be subject to a new NEPA/CZMA and other federal reviews.¹⁰⁹ The process adopted by MMS raises a significant CZMA consistency issue. The degree of consistency required by the CZMA differs depending on whether the activity under review is a "federal agency

105. This assumes that, first, the rule adopted by the coastal state is approved as a proper amendment of the state's federally approved coastal zone management plan by the Office of Coastal Management of the Department of Commerce. 16 U.S.C. § 1455(e) (describing the process for amending a state's federally approved state coastal zone management plan); *see also* 15 C.F.R. § 923.80-.84 (describing the procedures by which amendments to management programs must be made). Secondly, this assumes that the activity affects a natural resource, land use, or water use of the state's coastal zone. *See* 16 U.S.C. § 1456(c)(1)-(2).

106. Renewable Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf, 74 Fed. Reg. 19,638, 19,840 (Apr. 29, 2009) (stating that a Site Assessment Plan ("SAP") and a Construction and Operations Plan ("COP") must be submitted and receive MMS approval before commencing activity under a lease).

107. 30 C.F.R. §§ 285.605-.618 (2009) (detailing, among other things, the required contents of the SAP and the SAP submission and approval process).

108. *See id.* § 285.614(a).

109. *Id.* § 285.611(b).

activity”¹¹⁰ or an activity by “any person who submits . . . any plan for the exploration or development of, or production from, [OCS leased lands].”¹¹¹ If it is a “federal agency activity,” then it must “be carried out in a manner which is consistent to the *maximum extent practicable* with the enforceable policies” of a state’s federally approved coastal zone management program.¹¹² However, if the activity is one described in a federal OCS lands lessee’s plan of exploration, development, or production, it must comply “with the enforceable policies of [the relevant state’s] approved [coastal] management program and . . . be carried out in a manner consistent with such program.”¹¹³ This means it must be completely consistent with the state’s enforceable policies.

If MMS plans to incorporate both the lease issuance and site assessment activities into one consistency determination, it raises some significant issues with respect to the implementation of the mandates of the CZMA. If the activity is a federal agency activity and the State disagrees, then the applicable legal standards¹¹⁴ and the process for resolving the disagreement differ dramatically from the situation in which a State does not concur in the consistency determination of an OCS lessee.¹¹⁵ If the State objects to a federal agency’s planned activity, it may mean mediation and a federal lawsuit.¹¹⁶ On the other hand, if the State does not concur in an OCS lessee’s consistency certification, the planned activity cannot take place so long as the State objects, unless the Secretary of Commerce overrides the objection.¹¹⁷ MMS’s decision to combine the lease issuance and site assessment activities consistency determination may

110. See 16 U.S.C. § 1456(c)(1)(A); 15 C.F.R. § 930.31(a) (defining the term “federal agency activity”).

111. *Id.* § 1456(c)(3)(B).

112. *Id.* § 1456(c)(1)(A) (emphasis added).

113. *Id.* § 1456(c)(3)(B).

114. Although the standard for federal agency activity is consistent “to the maximum extent practicable” and the standard for federal OCS permittees is complete consistency, in most cases the actual degree of consistency required is the same. Under the applicable regulations, federal agencies are required to be “fully consistent with the enforceable policies of [state] programs unless full consistency is prohibited by existing law applicable to the Federal agency.” 15 C.F.R. § 930.32(a)(1).

115. Compare 16 U.S.C. § 1456(c)(1) (discussing the requirement that federal agency activities be consistent with state enforceable policies and the process for resolving disputes), with 16 U.S.C. § 1456(c)(3)(B) (requiring that a State concur with the consistency determination before a license may be granted to an individual).

116. See 16 U.S.C. § 1456(c)(1) (noting also that the President may exempt certain federal agency activities from compliance if the activity is “in the paramount interest of the United States”).

117. See 16 U.S.C. § 1456(c)(3)(B).

expedite the review of commercial leases, but it presents serious questions about the administration of the CZMA consistency process and may conflict with a coastal state's right to object and block an OCS activity inconsistent with the state's enforceable policies.

3. Construction, Operation, and Conceptual Decommissioning Plan

After the site assessment is performed, the next stage is the submission of the Construction and Operations Plan ("COP").¹¹⁸ The COP must cover all proposed activities and operations associated with the construction and operation of the alternative energy facility¹¹⁹ and demonstrate that the activities are safe, do not unreasonably interfere with other uses of the OCS, do not cause undue harm or damage, use the best available and safest technology, use the best management practices, and use properly trained personnel.¹²⁰ MMS's review of the COP includes an assurance that the plan satisfies the requirements of NEPA and other applicable federal laws.¹²¹ At this time, a coastal state has another opportunity to address any inconsistencies between the proposed alternative energy operations and the state's enforceable policies under its federally approved coastal zone management plan. Any activities described in the COP affecting any land or water use of a natural resource in a state's coastal zone must be consistent with that state's enforceable policies.¹²²

One interesting aspect of the MMS regulations is the treatment of decommissioning.¹²³ MMS considered postponing

118. See Renewable Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf, 74 Fed. Reg. 19,638, 19,840 (Apr. 29, 2009). The lessee's COP may be incorporated into its SAP. *Id.*

119. 30 C.F.R. § 285.620 (2009).

120. 30 C.F.R. § 285.621; see also *id.* § 285.626 (listing project specific information requirements that must be included in the COP).

121. See *id.* § 285.628. MMS must approve the COP before any COP activities may take place. *Id.* § 285.620(c).

122. 16 U.S.C. § 1456(c)(3)(B).

123. Decommissioning is the dismantling of any structures created by the lessee or grant-holder. Renewable Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf, 74 Fed. Reg. 19,638, 19,707-88 (Apr. 29, 2009). Once he has finished using the submerged land, he must "clear the ocean floor of any obstructions" that he has erected down to fifteen feet below the mudline. *Id.* at 19,707. The lessee/grant-holder must submit a decommissioning plan no later than two years before his lease or grant expires. *Id.* Such a plan must identify the structures he will remove, describe the removal methods, propose a decommissioning schedule, identify the resources or activities that the process would affect, and explain any biological or archaeological features sensitive to the decommissioning process. *Id.* at 19,708. In the application, the lessee may request that certain structures might remain in place; the MMS reviews such requests on a "case-by-

decommissioning regulations because there are no large-scale alternative energy facilities on the OCS as of yet, and it may be twenty to twenty-five years or more before any project yet to be built would be decommissioned.¹²⁴ A lot could change between now and then. Nonetheless, MMS decided that decommissioning should be addressed so that lessees will know what would be required at the end of a project ahead of time.¹²⁵ The COP would include a conceptual decommissioning plan.¹²⁶ Although a coastal state has an opportunity to assert a consistency objection at the time the COP is presented, before the actual decommissioning takes place, the state *should* have another opportunity to raise any new consistency objections arising from new information or federally approved amendments to the state's CMP.

4. Actual Decommissioning

Minerals Management Service regulations state that a lessee must submit a decommissioning plan to MMS for approval before beginning actual decommissioning.¹²⁷ It is only when the operator is actually ready to decommission the facility, files the decommissioning plan, and seeks MMS approval that the precise decommissioning details will be known.¹²⁸ This decommissioning will take place many years after the approval of the COP and under potentially different ecological conditions and a changed legal environment, as new state coastal legislation or regulations are put into place or older statutes and regulations amended. The question is whether at that time another CZMA consistency review should be required.

case basis," after considering what impact the structures will have on the marine environment. *Id.* at 19,707. Minerals Management Service must review the plan and may either approve or deny it. *Id.* at 19,708. If the grantee's/lessee's plan is approved, he must file a decommissioning notice sixty days before he begins decommissioning, and he must file an additional report sixty days after he has completed the process. *Id.* at 19,707–88.

124. Alternative Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf, 73 Fed. Reg. 39,376, 39,432–33 (proposed July 9, 2008).

125. *See* Renewable Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf, 74 Fed. Reg. at 19,706–88.

126. *Id.* at 19,695 (requiring that the COP include a conceptual decommissioning plan); *see also id.* at 19,707 ("While the conceptual decommissioning plans will be included in the SAP, COP, or GAP, in many cases the project will not be decommissioned until many years after approval of the plan.").

127. 30 C.F.R. § 285.902(b) (stating that decommission plans may be submitted no later than two years before an anticipated decommissioning). The general requirements for decommission are set forth in 30 C.F.R. § 285.902.

128. *Id.* § 285.902.

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The MMS regulations suggest such a review will only take place if the decommissioning plan in the submitted application results in “a significant change in the impacts previously identified,” requires any additional authorizations, or “[p]ropose[s] activities not previously identified and evaluated.”¹²⁹ This implies that impacts associated with changed ecological conditions or a decommissioning activity not described in the COP will be subject to a consistency review at the time of the decommissioning application. However, the proposed rules do not discuss the relevance of any intervening changes in a state’s enforceable policies in its CMP. On one hand, if the state had an opportunity to object to the decommissioning plan set forth in the COP but stated no objections at that time, then the federal lessee/operator should be able to rely upon its submitted COP.¹³⁰ On the other hand, it seems that the consistency of an activity that was not intended to take place until some date long into the future should be based on compliance with the enforceable policies of the state’s coastal management plan in existence at the time when decommissioning actually occurs. Because the Secretary of Commerce can override a state’s consistency objection, the better path would be to require the decommissioning applicant to submit a consistency certification at that time, to allow the State to object if there are grounds, and, if no satisfactory resolution can be reached among the parties, to allow the applicant to appeal to the Secretary and seek an override of the state’s objection.

129. *Id.* § 285.907(b). When MMS presented its original proposed regulations, it stated: “Additional ... CZMA review may be required if the revisions for ... decommissioning: (1) Result in a significant change in the impacts previously identified and evaluated; (2) Require any additional authorizations; or (3) Propose activities not previously identified and evaluated.” *Alternative Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf*, 73 Fed. Reg. at 39,420. The document did not discuss whether federally approved changes in the state’s coastal zone management plan may be the basis for a further consistency review if the decommissioning activity described in the COP is no longer consistent with the state’s coastal zone management plan. *Id.*

130. Under the CZMA consistency provision, if a state fails to object within the proscribed time period to an applicant’s consistency certification, the state’s concurrence is conclusively presumed. *Coastal Zone Management Act of 1972*, 16 U.S.C. § 1456(c)(3)(B) (2006). Therefore, if the State fails to object and the MMS approves the conceptual decommissioning described in the COP, the applicant is entitled to rely on that approval. The question is whether, with respect to activities that will take place far into the future, the state’s concurrence should only be presumed with respect to the enforceable policies in existence at the time of the submission of the COP.

C. Making the Most of the Consistency Review

The actual utility of the consistency review is dependent upon the State having the enforceable policies in its CMP to address the important ecological, environmental, and economic issues likely to be presented by locating alternative energy facilities in ocean waters. North Carolina's CMP was approved by the National Oceanic and Atmospheric Administration ("NOAA") in 1981.¹³¹ The enforceable policies in that plan include all "policies which are legally binding through constitutional provisions, laws, regulations, land use plans, ordinances, or judicial or administrative decisions by which . . . [North Carolina] exerts control over private and public land and water uses and natural resources in the coastal zone."¹³² The North Carolina Coastal Area Management Act ("CAMA")¹³³ then is only one body of law that is part of the State's coastal management plan, and the Coastal Resources Commission ("CRC")¹³⁴ is only one of a number of State commissions and entities promulgating regulations and issuing permits to implement the State's coastal management plan.¹³⁵ With such a large body of statutes and regulations potentially applicable to alternative energy projects proposed for ocean waters, only a few major areas of concern will be addressed in this Article.

For the most part, there are only a few major areas of concern because, as a general matter, past experience has prepared North Carolina for consistency review of alternative energy projects. In early 1988, the State reviewed a proposal, subsequently abandoned, by Mobil Oil to drill an exploratory well in federal waters off the

131. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Ocean and Coastal Resource Management, <http://coastalmanagement.noaa.gov/mystate/nc.html> (last visited May 4, 2009).

132. 16 U.S.C. § 1453(6a) (defining "enforceable policy").

133. Coastal Area Management Act of 1974, N.C. GEN. STAT. §§ 113A-100 to -134.3 (2007).

134. *See id.* § 113A-104 (establishing the Coastal Resources Commission and describing its membership).

135. Other entities include: (1) the Environmental Management Commission, *Id.* § 143B-282(a) (establishing the Commission and conferring power to, among other things, approve Coastal Habitat Protection Plans and establish renewable energy standards); (2) the Division of Water Quality, 15A N.C. ADMIN. CODE 2B.0201–2B.0261 (2008); (3) the Marine Fisheries Commission, N.C. GEN. STAT. § 143B-289.51–.52 (creating the Commission and delegating authority to regulate marine and estuarine resources as well as coastal fisheries); (4) the North Carolina Utilities Commission, *Id.* §§ 62-101(a), -110 (requiring public utilities to obtain Commission approval before constructing new transmission lines and to obtain a certificate before constructing, acquiring, or operating a public utility plant); and (5) the Department of Administration, *Id.* §§ 146-1(a), -10 (vesting the Department of Administration with the power to manage vacant, unappropriated land and to lease or rent such land).

northern Outer Banks.¹³⁶ In preparing for the consistency review of that project, the State reviewed its existing ocean policies and made amendments to its coastal zone management plan.¹³⁷ Many of the state's concerns about alternative energy development are similar to those associated with OCS oil and gas development, but some are unique. In light of the growing interest in placing wind energy facilities in coastal or ocean waters, the time is ripe to review existing state laws and policies to assure that the State is prepared to fully address any such proposals.

III. ESTABLISHING A REGULATORY FRAMEWORK FOR WATER-BASED WIND ENERGY PROJECTS IN NORTH CAROLINA

A. *Who Establishes Environmental Standards and Issues Permits for Water-Based Wind Energy Projects?*

1. Who is in Charge?

Three important state-level entities, the Coastal Resources Commission ("CRC"), the Utilities Commission,¹³⁸ and the

136. See WALTER F. CLARK & STEVEN E. WHITESELL, NORTH CAROLINA'S OCEAN STEWARDSHIP STUDY: A MANAGEMENT STUDY 31–32 (1994), available at http://www.nccoastallaw.org/pubs/clark_oceanpolicy_1994%20.pdf.

137. See *id.* Although that project never materialized, as a result of that review, the State was prepared to address any future oil and gas leasing proposals. However, the 1990 executive moratorium on the issuance of oil and gas leases in locations other than areas off the coasts of Texas, Louisiana, Alabama, and limited parts of Alaska put a hold on such proposals for almost two decades. Energy Information Administration, *Moratorium on Offshore Drilling* (1990), http://www.eia.doe.gov/oil_gas/natural_gas/analysis_publications/ngmajorleg/moratorium.html. With renewed interest in developing offshore oil and gas, President George W. Bush lifted the executive moratorium in the summer of 2008, and a similar Congressional moratorium expired in the Fall of 2008. Congress allowed its own leasing prohibition to expire in the fall of 2008. Tom Doggett, *Congress to let Offshore Drilling Ban Expire*, REUTERS, Sept. 24, 2008, <http://www.reuters.com/article/politicsNews/idUSTRE48N8NA20080924>. With the expiration of the moratoria, in January 2009, MMS put forth a proposal to begin issuing leases in the South Atlantic. Department of Interior, Minerals Management Service, Request for Comments on the Draft Proposed 5 Year Outer Continental Shelf (OCS) Oil and Gas Leasing Program for 2010–2015, 74 Fed. Reg. 3,631, 3,631–35 (Jan. 21, 2009). In light of those events, the time is ripe for the State once again to review the adequacy of its existing oil and gas development policies and a new task force was created to do that. See *Task Force to Look at Offshore Drilling*, NEWS & OBSERVER (N.C.), http://projects.newsobserver.com/under_the_dome/task_force_to_look_at_offshore_drilling (last visited May 5, 2009).

138. N.C. GEN. STAT. §§ 62-10 to -15 (describing the organization and function of the North Carolina Utilities Commission).

Environmental Management Commission (“EMC”),¹³⁹ have significant roles in developing the policies and rules for wind energy projects. When multiple agencies are involved in the assessment and permitting of projects, it is not unusual to find some overlap of jurisdiction. A 2008–2009 study revealed that such overlaps existed between the CRC, Utilities Commission, and the EMC with respect to establishing environmental standards for, and the permitting of, water-based wind energy projects.¹⁴⁰

a. The CRC and the Utilities Commission

Under CAMA, the CRC has authority to designate areas of environmental concern (“AEC”).¹⁴¹ State estuarine and ocean waters are designated public trust AECs.¹⁴² With limited exceptions, any “development” in an AEC requires a CAMA permit.¹⁴³ “Development” is defined as:

[A]ny activity in a duly designated area of environmental concern (except as provided in paragraph b of this subdivision) involving, requiring, or consisting of the construction or enlargement of a structure; excavation; dredging; filling; dumping; removal of clay, silt, sand, gravel or minerals; bulkheading, driving of pilings; clearing or alteration of land as an adjunct of construction; alteration or removal of sand dunes; alteration of the shore, bank or bottom of the Atlantic Ocean or any sound, bay, river, creek, stream, lake or canal; or

139. *Id.* § 143B-282 (establishing the Environmental Management Commission and describing the Commission’s powers and duties).

140. See JOSEPH J. KALO, LISA C. SCHIAVINATO, & SCOTT GEIS, NORTH CAROLINA COASTAL RESOURCES LAW, PLANNING & POLICY CTR., DEVELOPING A MANAGEMENT STRATEGY FOR NORTH CAROLINA’S COASTAL OCEAN: REPORT OF THE OCEAN POLICY STEERING COMMITTEE 31–37 (2009). This report was submitted to the North Carolina Coastal Resources Commission in April 2009. In early 2008, an Ocean Policy Steering Committee, chaired by the authors, was established. The committee met regularly and discussed ocean policy issues, with the authors acting as co-chairs of the committee. The committee report was written by the authors and Scott Geis, Ocean and Coastal Policy Analyst, North Carolina Division of Coastal Management, and approved by the full committee.

141. N.C. GEN. STAT. § 113A-113 (authorizing the Coastal Resources Commission to designate areas of environmental concern which satisfy criteria specified by statute).

142. See *id.* § 113A-113(b)(2); 15A N.C. ADMIN. CODE 7H.0201–.0208 (2007). Public trust areas include, among other things, “all waters of the Atlantic Ocean and the lands thereunder . . . all natural bodies of water subject to measurable lunar tides and lands thereunder . . . all navigable natural bodies of water and lands thereunder . . .” 15A N.C. ADMIN. CODE 7H.0207.

143. See N.C. GEN. STAT. § 113A-118(a) (“[E]very person before undertaking any development in any area of environmental concern shall obtain . . . a permit pursuant to the provisions of this part.”).

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placement of a floating structure in an area of environmental concern identified in G.S. 113A-113(b)(2) or (b)(5).¹⁴⁴

Normally, any significant “development” in estuarine or ocean waters, such as a wind energy project, requires a CRC-issued CAMA major development permit.¹⁴⁵ However, certain activities are excluded by CAMA from being considered “development” and are not subject to CAMA permit requirements.¹⁴⁶ Wind turbine facilities are potentially such an activity.

Section 113A-118(5)(b)(3) of the General Statutes of North Carolina excludes from the CAMA definition of “development” “work by any utility and other persons for the purpose of construction of facilities for the development, generation, and transmission of energy to the extent that such activities are regulated by other law or by present or future rules of the State Utilities Commission.”¹⁴⁷ Wind energy facilities located in coastal or ocean waters have three major components: (1) wind turbine generators, (2) transmission lines crossing submerged lands, and (3) onshore receiving facilities. The first two relate directly to activities in CAMA AECs and raise the potential of a conflict between the authority of the Utilities Commission and the CRC.

Under the North Carolina Public Utilities Act, the State Utilities Commission regulates public utilities.¹⁴⁸ The definition of “public utility” includes facilities that generate electricity to be furnished to the public for compensation,¹⁴⁹ which would encompass alternative

144. *Id.* § 113A-103(5)(a).

145. *See id.* § 113A-118(c)–(d) (defining “major” and “minor” developments); *see also* 15A N.C. ADMIN. CODE 7J.0201 (requiring that persons undertaking major developments obtain CRC permits).

146. N.C. GEN. STAT. § 113A-103(5)(b) (listing those activities which are not considered “development”).

147. *Id.* § 113A-103(5)(b)(3).

148. *See* North Carolina Public Utilities Act, § 62-2(b) (vesting authority in the North Carolina Utilities Commission to regulate rates, services, and operations of public utilities).

149. “Public utility” is defined as:

[A] person, whether organized under the laws of this State or under the laws of any other state or country, now or hereafter owning or operating in this State equipment or facilities for: producing, generating, transmitting, delivering or furnishing electricity, piped gas, steam or any other like agency for the production of light, heat or power to or for the public for compensation; provided, however, that the term “public utility” shall not include persons who construct or operate an electric generating facility, the primary purpose of which facility is for such person’s own use and not for the primary purpose of producing electricity, heat, or steam for sale to or for the public for compensation.

energy facilities located in coastal or ocean waters. Construction of wind turbine facilities thus requires a certificate of public convenience and necessity from the Utilities Commission.¹⁵⁰ Therefore, to the extent that activities associated with the construction, operation, and maintenance of such facilities are addressed in rules of the Utilities Commission, CAMA permit requirements do not apply.¹⁵¹ However, environmental considerations are not a factor in the issuance of the certificate.¹⁵² Therefore, the siting of wind facilities per se does not pose a conflict between the CRC and the Utilities Commission at this time.

The siting of transmission lines, however, does present a more direct possibility of conflict between Utilities Commission actions and CAMA rules and policies. Water-based renewable energy facilities, whether located in state or federal waters, require transmission lines to bring the energy to receiving facilities onshore. The Utilities Commission is the body that is authorized to regulate transmission lines.¹⁵³ Section 62-101(a) of the General Statutes of North Carolina states that “[n]o public utility or any other person may begin to construct a new transmission line without first obtaining from the Commission a certificate of *environmental compatibility* and public convenience and necessity.”¹⁵⁴ An applicant for such a certificate must file an application containing the following information: “An environmental report setting forth: a. [t]he environmental impact of the proposed action; b. [a]ny proposed mitigating measures that may minimize the environmental impact; and c. [a]lternatives to the proposed action.”¹⁵⁵ The commission shall issue the certificate for construction of the proposed transmission line if it finds:

- (4) That the impact the proposed transmission line will have on the environment is justified considering the state of available technology, the nature and economics of the various alternatives, and other material considerations; and

Id. § 62-3(23)(a)(1).

150. *See id.* §§ 62-110(a), -110.1 (detailing certificate of convenience and necessity requirements for public utility plants and electricity generating facilities).

151. *See id.*; *see also id.* § 113A-103(5)(b)(3) (exempting from the definition of “development”—and thus from CAMA permit requirements—construction projects regulated by the State Utilities Commission).

152. *See id.* §§ 62-110(a), -110.1.

153. *See id.* § 62-101.

154. *Id.* § 62-101(a) (emphasis added). There are some exceptions, but none would be applicable to transmission lines coming from water-based alternative energy production facilities. *See id.* § 62-101(c) (listing specific transmission lines the construction of which does not require a certificate).

155. *Id.* § 62-102(a)(4).

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(5) That the environmental compatibility, public convenience, and necessity require the transmission line.¹⁵⁶

Although an environmental report submitted to the Utilities Commission would identify the adverse environmental impacts, including those raised by any conflict between the proposed development and existing CAMA rules and policies, insofar as construction of transmission lines in CAMA AECs is concerned, the Utilities Commission has the ultimate authority to weigh the benefits and adverse environmental impacts, not the CRC. In such circumstances, construction of transmission lines would not be a “development” requiring a CAMA permit.

Even though it has the authority, present practice is for the Utilities Commission to defer to the CRC,¹⁵⁷ which makes sense because the CRC, with its Division of Coastal Management support staff,¹⁵⁸ is the entity with the most experience in regulating coastal development in a manner consistent with the public interest in coastal waters and natural resources. However, to provide a known, stable legal framework for potential applicants for permits for water-based wind energy facilities and transmission lines, the General Assembly should clarify the respective roles of the two entities, and explicitly place all environmental permitting authority in the CRC.

b. The Role of the EMC

With respect to wind energy development in coastal and ocean waters, the relationship of the EMC, the Utilities Commission, and the CRC is even more uncertain. In 2007, in an amendment to section 143B-282(a) of the General Statutes of North Carolina, the General Assembly granted the EMC the authority to:

[E]stablish a procedure for evaluating renewable energy technologies that are, or are proposed to be, employed as part of a renewable energy facility . . . establish standards to ensure that renewable energy technologies do not harm the environment, natural resources, cultural resources, or public health, safety, or welfare of the State; and, to the extent that there is not an environmental regulatory program, establish an

156. *Id.* § 62-105(a)(4)–(5).

157. Telephone Interview with Scott Geis, Coastal and Ocean Policy Analyst, N.C. Div. of Coastal Mgmt., in Raleigh, N.C. (Mar. 4, 2009).

158. See 15A N.C. ADMIN. CODE 7A.0101 (2007) (stating that the Division of Coastal Management’s purpose is to provide staff support to, among others, the CRC).

environmental regulatory program to implement these protective standards.¹⁵⁹

Under this statute, the EMC's authority to establish environmental standards extends to all forms of renewable energy, whether land-based or water-based. This includes wind energy. However, the relationship between the EMC, the Utilities Commission, and the CRC remains unclear.

c. The EMC and the Utilities Commission

If the EMC adopts environmental standards for all forms of wind energy, then this does not pose any conflict between the EMC and the Utilities Commission, insofar as the siting of wind energy facilities are concerned, for two reasons: (1) the Utilities Commission has no environmental rules that clash with any adopted by the EMC, and (2) environmental considerations are not an element of the grant of a certificate of convenience and necessity.¹⁶⁰ On the other hand, transmission line construction does create a conflict. Insofar as the permitting of transmission lines is concerned, the Utilities Commission still appears to be the entity with the *express* authority to issue the necessary certificate authorizing the construction of such lines and to weigh environmental considerations.¹⁶¹ But, if the EMC adopts rules prohibiting the placement of transmission lines in a certain location, is the Utilities Commission clearly bound by those rules? The answer appears to be "yes."

Section 62-105(a) of the General Statutes of North Carolina allows the Utilities Commission to weigh the adverse environmental impacts against the state of technology, the nature and economics of various alternatives, and other material considerations.¹⁶² However, section 143B-282(a), which is the later statute, empowers the EMC to establish environmental standards that are binding on all other state entities, such as the CRC and Utilities Commission.¹⁶³ Nonetheless, a further legislative clarification of the line of authority is advisable to eliminate any possible regulatory authority uncertainty that might

159. N.C. GEN. STAT. § 143B-282(a)(6).

160. *See supra* notes 150–52 and accompanying text.

161. *See supra* notes 153–54 and accompanying text.

162. *See* N.C. GEN. STAT. § 62-105(a)(4) (requiring the Utilities Commission to consider whether the environmental impact of the proposed transmission line is justified before granting a certificate).

163. *See id.* § 143B-282(a) (authorizing the EMC to promulgate rules "to be followed in the protection, preservation, and enhancement of the water and air resources of the State").

inhibit water-based wind energy investment and development in North Carolina.

d. The EMC and the CRC

The primary authority to develop environmental standards for wind energy projects, wherever located in the state, resides in the EMC.¹⁶⁴ On one hand, the EMC may choose to establish a set of state-wide standards applicable to the permitting of all wind energy projects and binding on all state agencies involved in the permitting process.¹⁶⁵ On the other hand, with respect to wind energy projects in coastal waters, it could decide to defer to the CRC, adopt CAMA rules as its standards for water-based projects, and devote itself to the development of the rules applicable to land-based wind energy facilities proposed for location outside CAMA AECs, which itself is a large task.¹⁶⁶ This is an acceptable approach for two reasons. First, the CRC, and its Division of Coastal Management support staff, has more experience in regulating development in state coastal and estuarine waters, has an established CAMA permit program, and could provide the vehicle for a comprehensive review of wind projects proposed for location in state estuarine or ocean waters.¹⁶⁷ In fact, the CRC already has in place coastal energy policies that are

164. Letter from Francis Crawley & Jennie Willheim Houser, Special Deputy Attorneys General, to Stephen T. Smith, Chairman of the Renewable Energy Comm. of the Env'tl. Mgmt. Comm'n (Sept. 10, 2008) (on file with the North Carolina Law Review).

165. The EMC's authority also extends to establishing an environmental regulatory program to implement its standards if there is no existing program through which the standards may be implemented. N.C. GEN. STAT. § 143B-282(a)(6). Yet, because the CAMA program is an environmental regulatory program capable of implementing any "protective standards," there is no need to establish a new one to regulate wind energy facilities placed in coastal waters. See Memorandum from Robin W. Smith, Assistant Sec'y for the Env't, N.C. Dep't of Env't & Natural Res. to the Renewable Energy Comm. of the Env'tl. Mgmt. Comm'n (Nov. 12, 2008) (on file with the North Carolina Law Review). So, if the EMC decided to develop its own comprehensive protective environmental standards, the CRC would be the entity to apply those standards to development in CAMA AECs.

166. Under this scenario, the EMC would be responsible for the permitting of wind energy facilities in the eighty remaining counties of North Carolina, which includes the western mountain region—an area with extremely strong wind power potential. See Seim & Lackmann, *supra* note 80, at 15 fig.1.4.

167. In fact, because the North Carolina coastal zone includes the twenty coastal counties, the CRC could be the vehicle for a comprehensive review of any wind energy projects proposed for location anywhere in those counties. See Memorandum from Robin W. Smith, *supra* note 165. CAMA authorizes the CRC to designate any area within the coastal zone impacted by a "key facility" as an AEC. N.C. GEN. STAT. § 113A-113(b)(7). The term "key facilities" includes "major facilities on nonfederal lands for the development, generation, and transmission of energy." *Id.* § 113A-103(6)b.

applicable to large-scale wind energy projects in coastal or ocean waters, as well as other rules that also apply.¹⁶⁸ Second, if the EMC adopts the CRC rules as its own to regulate wind facilities in coastal waters, then those rules would be binding on the Utilities Commission.¹⁶⁹

2. The 2009 Proposed Legislation: An Attempt to Clear the Waters

In early March 2009, instead of going through the agency rule-making process to establish the environmental standards, the EMC sent recommended draft legislation to the General Assembly.¹⁷⁰ The draft legislation divides jurisdiction over wind energy projects between the CRC and the Department of Environment and Natural Resources (“DENR”).¹⁷¹ Under the draft legislation, the CRC is responsible for issuing permits for wind energy projects to be undertaken within the coastal area,¹⁷² while DENR would issue permits for all other wind energy projects.¹⁷³ Under the proposed legislation, permit applicants would submit a number of studies and comply with a set of minimal environmental standards. Among the studies required would be “[a] study of the noise impacts of the proposed facility,” “[a] study on shadow flicker impacts of the proposed facility,” “[a] study on avian and bat impacts of the proposed facility,” and “[a] study on viewshed impacts of the proposed facility.”¹⁷⁴

Permits would be denied if:

- (1) Construction or operation of the facility would result in significant adverse impacts to ecological systems, natural resources, cultural sites, recreation areas, or historic sites of

168. The adequacy of these policies and rules is discussed later in this Article. *See infra* Part III.B.1.

169. *See supra* note 165 and accompanying text.

170. N.C. ENVTL. MGMT. COMM’N., REPORT TO THE ENVTL. REVIEW COMM’N: DEVELOPMENT OF A WIND ENERGY PERMITTING PROGRAM IN NORTH CAROLINA (Mar. 17, 2009) [hereinafter EMC REPORT].

171. *See id.* at 9–15.

172. *See id.* at 9 (recommending the addition of a new section 113A-118.3(a) to amend the General Statutes of North Carolina). For the definition of “coastal area,” see section 113A-103(2) of the General Statutes of North Carolina. For a list of the twenty counties subject to CAMA also displayed on a map, see N.C. Dept. of Env’tl. & Natural Res., Div. of Coastal Mgmt., CAMA Counties, http://dcm2.enr.state.nc.us/cama_counties.htm (last visited May 5, 2009).

173. *See* EMC REPORT, *supra* note 170, at 11 (recommending the addition of a new section 143-215.740 to amend the General Statutes of North Carolina).

174. *Id.* at 9 (recommending the addition of new sections 113A-118.3(b)(6)–(9) to amend the General Statutes of North Carolina).

more than local significance. These areas include, but are not limited to, national or State parks or forests; wilderness areas; historic sites; recreation areas; segments of the natural and scenic rivers system; wildlife refuges; preserves and management areas; areas that provide habitat for threatened or endangered species; and primary nursery areas and critical fisheries habitat designated by the Marine Fisheries Commission.

(2) Construction or operation of the facility would obstruct major navigation channels or create a significant obstacle to navigation in coastal waters

(3) Construction or operation of the facility would have a significant adverse impact on fish or wildlife.

(4) Construction or operation of the facility would have a significant adverse impact on views from any State or national park, wilderness area, significant natural heritage area, or other designated public lands or dedicated private conservation lands with high recreational values.

(5) A permit for the facility would be denied [for any other reason the CRC is authorized to deny CAMA permits].

(6) The cumulative impact of the proposed facility with other existing or proposed wind energy facilities would result in significant adverse impacts to ecological systems, natural resources, cultural sites, recreation areas, or historic sites of more than local significance.¹⁷⁵

Four aspects of this legislation deserve additional comment. First, one may question the wisdom of placing the responsibility and burden upon the CRC of permitting of both land-based wind projects and water-based projects located anywhere in the twenty coastal counties, interior water areas, and state ocean waters that comprise the state's coastal zone.¹⁷⁶ At the present time, CRC authority is limited to CAMA jurisdictional activities within AECs,¹⁷⁷ which

175. *Id.* at 9–10 (recommending the addition of new sections 113A-118.3(c)(1)–(6) to amend the General Statutes of North Carolina).

176. *See supra* note 172 and accompanying text.

177. N.C. GEN. STAT. § 113A-118 (2007) (requiring that persons seeking to undertake projects in areas of environmental concern obtain a permit from the CRC). AECs are areas designated as such by the Coastal Resources Commission. *Id.* § 113A-113

comprise approximately seven percent of the land and all of the public waters in the coastal area.¹⁷⁸ Even with this limited jurisdiction, the CRC is already responsible for a large number of coastal permitting and other regulatory matters.¹⁷⁹ Because many coastal land areas may also provide good locations for wind projects,¹⁸⁰ placing permitting responsibility on the CRC for such land-based wind projects may severely tax its staff resources and take time away from matters more directly related to activities in AECs and to the purposes of CAMA.

Second, the proposed legislation removes a major impediment to the permitting of water-based wind energy. Generation of wind energy involves a non-water dependent structure.¹⁸¹ There is nothing inherent in wind energy facilities that requires them to be sited in a water area. It may be desirable to put them in a specific water area, but it is not essential because wind turbines work as well on land as on water. Although the wind is more constant and stronger in some water areas than in some land areas,¹⁸² it is arguable that that natural characteristic does not make a wind turbine water-dependent in the same way as a wave energy turbine or traditional water uses, such as fishing and navigation. Wave energy turbines or navigation, fishing, and similar activities must be sited or performed in water locations;

(authorizing the Coastal Resources Commission to designate areas of environmental concern which satisfy criteria specified by statute).

178. N.C. DEP'T. OF ENVTL. & NATURAL RES., DIV. OF COASTAL RES., COASTAL RESOURCES ADVISORY COUNCIL GUIDEBOOK 5 (2009).

179. See Milton S. Heath, Jr. & David W. Owens, *Coastal Management Law in North Carolina: 1974-1994*, 72 N.C. L. REV. 1413, 1425-40 (1994) (discussing the management of areas of environmental concern under the CAMA from 1974 to 1993).

180. See, e.g., N.C. State Univ., N.C. Solar Ctr., North Carolina Coastal Wind Working Group, <http://www.ncsc.ncsu.edu/coastalwindworkinggroup.php> (last visited Aug. 10, 2009); N.C. State Univ., N.C. Solar Ctr., The Coastal Wind Initiative, <http://www.ncsc.ncsu.edu/coastalwindinitiative.php> (last visited Aug. 10, 2009) (suggesting that, in the coastal area, the most promising locations are offshore, barrier islands, sounds, and the inland land area nearest to the sounds; wind potential drops significantly further inland in the coastal area).

181. A water dependent structure is one that must be located in or over the water to serve its purpose. See 15A N.C. ADMIN. CODE 7H.0208 (2007) (offering as examples of uses that are not water dependent: restaurants, residences, and apartments, etc.; and examples of uses that are water dependent: docks, wharfs, and boat ramps.). *But see* EMC REPORT, *supra* note 170, at 5 (recommending that the General Assembly make a legislative finding that wind energy is water dependent because data suggest wind over sounds and the ocean is most commercially viable). In 2008, the CRC decided that wind turbines were not water dependent. E-mail from Scott Geis, Coastal and Ocean Policy Analyst, N.C. Div. of Coastal Mgmt., (Apr. 23, 2009) (on file with the North Carolina Law Review).

182. See Barrett, *supra* note 73, at A1.

they are water dependent. A water location simply is not essential to the functioning of a wind turbine generator.

Existing CAMA general use standards, with limited exceptions, do not allow the siting of non-water dependent structures within the public trust areas, which include ocean waters and estuarine waters. CAMA rule 15A.7H.0208(a)(1) states that “uses which are not water dependent shall not be permitted in coastal wetlands, estuarine waters, and public trust areas.”¹⁸³ It is possible to get a permit for development that conflicts with this rule. CAMA rule 15A.7H.0208(a)(3) states:

When the proposed development is in conflict with the general or specific use standards set forth in [7H.0208], the CRC may approve the development if the applicant can demonstrate that the activity associated with the proposed project will have public benefits as identified in the findings and goals of the Coastal Area Management Act, that the public benefits clearly outweigh the long range adverse effects of the project, that there is no reasonable and prudent alternate site available for the project, and that all reasonable means and measures to mitigate adverse impacts of the project have been incorporated into the project design¹⁸⁴

A properly designed water-based wind energy project should be able to satisfy these requirements, thereby allowing the CRC to issue a permit for a wind energy facility, even though it is not water dependent.¹⁸⁵ However, under the proposed legislation, by legislative

183. 15A N.C. ADMIN. CODE 7H.0208(a)(1).

184. *Id.* at 7H.0208(a)(3).

185. The CRC could create a specific exception for wind turbine facilities by amending its general use standards for public trust areas and estuarine waters. But, the process for amending CAMA rules could take two years or more. *See* N.C. GEN. STAT. §§ 150B-1, 150B-2(1)(a), 150B-18, 150B-21.2, 150B-21.8 to 150B-21.20 (2007). Also, CAMA contains a procedure for requesting variances. *See id.* § 113A-120.1(a) (“Any person may petition the Commission for a variance granting permission to use the person’s land in a matter otherwise prohibited by rules or standards prescribed by the Commission . . .”). However, the statutory requirements for granting a variance would be difficult to satisfy. In order to receive a variance, four conditions must be satisfied. N.C. GEN. STAT. § 113A-120.1(a)(1)–(4). Two of these conditions would make it difficult to receive a variance to put a non-water dependent wind energy turbine in coastal waters. Section 113A-120.1(a)(1) of the General Statutes of North Carolina provides that, in order to receive a variance, the petition must show that “[u]nnecessary hardships would result from strict application of the rules” But, according to section 113A-120.1(a)(2), the hardship must arise out of “conditions that are peculiar to the property, such as the location, size, or topography of the property.” Any hardship imposed by the water-dependency rule upon siting of wind turbines in water areas results not from the “location, size, or topography of the property” because all water areas are similar in nature. The “hardship,” if any, arises

fiat, the *water dependency* issue would be taken off the table. The General Assembly simply would declare “a wind energy facility in the coastal area is a water-dependent use.”¹⁸⁶

Third, one of the grounds for denial of a wind energy permit is that either its construction or operation would have an adverse impact on certain scenic views.¹⁸⁷ This standard precludes the placement of wind turbines in locations from which the wind facilities might be visible from the Cape Hatteras National Seashore, Shackleford Banks, Fort Macon, and other similar areas. Although this scenic view protection criterion might seem to introduce a new factor in the CAMA permit process, in fact, it does not. Existing CAMA coastal energy policy rules, which are discussed below,¹⁸⁸ already include a broader scenic views protection requirement.¹⁸⁹

Fourth, the practical effect of this legislation would be to create a consolidated process for the review of environmental impacts of any proposed water-based wind energy project. Such projects would trigger the North Carolina Environmental Policy Act of 1971 (also known as the State Environmental Policy Act, or “SEPA”).¹⁹⁰ SEPA applies when a project (1) involves an expenditure of public monies or use of public lands, (2) involves an action by a state agency subject to the chapter, and (3) has a potential environmental effect.¹⁹¹ Water-based wind energy projects meet these three requirements. Wind energy projects located in state coastal and ocean waters would be

from a desire to place the turbines in a water area and not on land. In addition, the petitioner must establish that the “hardships did not result from actions taken by the petitioner.” N.C. GEN. STAT. § 113A-120.1(a)(3). Again, the hardship is a result of a business choice to try to place turbines in water areas.

186. See EMC REPORT, *supra* note 170, at 9 (recommending the addition of a new section 113A-118.3(c)(2) to amend the General Statutes of North Carolina which would state: “For purposes of this section, a wind energy facility in the coastal area is a water dependent use.”).

187. See *id.* at 11–12 (proposing the additions of N.C. GEN. STAT. § 113A-118.3).

188. See *infra* text accompanying notes 193–219.

189. See *infra* text accompanying notes 206–12.

190. North Carolina Environmental Policy Act of 1971, N.C. GEN. STAT. §§ 113A-1 to -259 (2007). The Department of Administration administers the SEPA process, adopts rules to implement the act, *id.* § 113A-11, and maintains a clearinghouse to coordinate and administer SEPA requirements. 1 N.C. ADMIN. CODE 25.0211(a) (2008). The State Clearing House “(1) receive[s] and circulate[s] environmental documents for review and comment; . . . (2) forward[s] all comments generated by the review process to the State Project Agency and, . . . where appropriate, prepare[s] a single integrated letter of response; (3) retain[s] a complete record of environmental documents, review documents, and other substantive materials related to the operation of the Clearinghouse; . . . and (5) coordinate[s] the establishment of minimum criteria and ensure[s] that thresholds are consistent among all agencies.” *Id.* at 25.0211(b).

191. See N.C. GEN. STAT. § 113A-4(2).

sited on state-owned public trust submerged lands, require a CAMA permit from the CRC, a state agency, and potentially have a number of significant environmental effects. When a project falls within the parameters of SEPA, a highly refined, comprehensive, potentially lengthy, inter-agency environmental review process is initiated, which may include the preparation of an environmental impact statement (“EIS”), public hearings, and public comments.¹⁹² With the proposed legislation clearly vesting permitting authority in the CRC, this complete environmental review would be conducted as part of the review of an application for a CAMA major development permit.

B. Existing CAMA Authority and Rules and their Application to Wind Energy

1. “Key Facilities” and Coastal Energy Policies

The proposed legislation would still allow the CRC to deny permits based on “any other criteria” in section 113A-120 of the General Statutes of North Carolina.¹⁹³ Under this section, the CRC considers a number of environmental and ecological factors, such as significant impacts to coastal wetlands and estuarine waters; loss of long-term productivity of certain coastal resources; major damage to historic, cultural, scientific, or other values; interference with public trust rights; and location in a natural hazard area.¹⁹⁴ The section also specifically requires denial of a permit for a “key facility” if the CRC finds that “the development is inconsistent with the State guidelines [for coastal development] or the local land use plans.”¹⁹⁵ “Key facilities” include “major facilities on nonfederal lands for the development, generation, and transmission of energy.”¹⁹⁶

In addition, the CRC has promulgated a set of comprehensive coastal energy policies applicable to projects proposed for either state

192. *See id.* § 113A-4; 1 N.C. ADMIN. CODE 25.0501-.0606 (describing the submission and review processes for Environmental Assessments and Environmental Impact Statements).

193. EMC REPORT, *supra* note 170, at 10 (recommending the addition of a new section 113A-118.3(c)(5) to amend the General Statutes of North Carolina).

194. *See* N.C. GEN. STAT. § 113A-120(a) (listing specific grounds on which a permit may be denied).

195. *Id.* § 113A-120(a)(7).

196. N.C. GEN. STAT. § 113A-103(6)(b). Major facilities are not defined further; however, in a later rule, the term “major energy facility” is defined. 15A N.C. ADMIN. CODE 7M.0402(b). That definition could pose problems for the application of N.C. GEN. STAT. § 113A-120. “Major energy facilities” are defined, in part, as facilities over 300 MW. *Id.* at 7M.0402(b)(4). The 300 MW size limitation might exclude some projects proposed for siting in the sounds.

coastal waters or federal ocean waters.¹⁹⁷ These policies contain standards that go beyond those contained in the new legislation. These standards conform more to the unique and site-specific concerns presented by water-based energy facilities.¹⁹⁸ However, the current policies were adopted when alternative energy development was not at the forefront as it is now.¹⁹⁹ The rules were designed primarily with offshore oil and gas projects in mind and not wind energy facilities or other forms of alternative energy.²⁰⁰ In addition, these rules apply only to “major energy facilities,” and energy projects of less than 300 MW are not considered to be major energy facilities.²⁰¹ If facilities under 300 MW are excluded, then that could exclude from the coastal energy policies’ standards ocean-based wind projects of up to 100 wind turbines.²⁰²

The CRC’s coastal energy policies are also applicable to projects proposed for siting in the estuarine waters.²⁰³ The exclusion in those policies for facilities generating less than 300 MW from the definition of “major energy facilities” could be more of a concern with respect to projects targeting the waters of the sounds. The smaller size of the sounds, the closer distance to land, and other factors suggest that any sound-based project could be smaller, both in terms of number of turbines and electricity that is generated, than ones proposed for

197. 15A N.C. ADMIN. CODE 7M.0400–0403.

198. *See id.* at 7M.0401(a), .0403(e).

199. These policies were initially adopted in 1979, and last amended in 2000. *Id.*

200. *See* WALTER F. CLARK & STEVEN E. WHITESELL, NORTH CAROLINA’S OCEAN STEWARDSHIP AREA: A MANAGEMENT STUDY 31–32, 35 (1994), available at http://www.nccoastallaw.org/pubs/clark_oceanpolicy_1994%20.pdf; *see also* 15A N.C. ADMIN. CODE app. 6 (proposing amendments to the coastal energy policies that focused primarily on the dangers associated with exploration for oil and gas resources).

201. *See* 15A N.C. ADMIN. CODE 7M.0402(b)(4).

202. Usual turbines are three to four MW. *See supra* notes 19–21 and accompanying text. If a water-based project consists of three MW wind turbines, the project would have to have over 100 turbines to fall within the coastal energy policy rules.

203. 15A N.C. ADMIN. CODE 7M.0401 (describing policies applicable to energy facilities and energy resources within state and in offshore waters); *see also id.* at 7M.0403(a) (describing policies for “placement and operations of major energy facilities in or affecting any land or water use or natural resource of the North Carolina coastal area”).

ocean waters.²⁰⁴ Therefore, it is important that the coastal energy policy rules be amended to include facilities of less than 300 MW.²⁰⁵

If a proposed wind facility does qualify as a “major energy facility,” then the CAMA coastal energy policies set forth a number of conditions that must be met. One significant policy is the protection of “[t]he scenic and visual qualities of coastal areas.”²⁰⁶ This scenic protection rule is broader than that in the proposed legislation. In the proposal, the scenic views component is limited to projects having a “significant adverse impact on views from any state or national park, wilderness area, significant natural heritage area, or other designated public lands or dedicated private conservation lands with high recreational values.”²⁰⁷ The existing CAMA coastal energy rule requires that “[e]nergy development shall be sited and designed to provide maximum protection of views to and along the ocean, sounds and scenic coastal areas.”²⁰⁸ Strict application of this rule would take into consideration views from virtually any coastal location and not just areas of special scenic significance. Because the proposed legislation continues to allow the CRC to deny permits for reasons for which permits could be denied prior to the passage of the legislation,²⁰⁹ the standard recommended by the EMC and incorporated in the proposed legislation would not displace the CAMA coastal policies scenic view rule.

In determining the visual impacts and buffer distance necessary to avoid these impacts, presumably, visibility both at day and at night would be relevant. Most of the online “visualizations” of proposed water-based wind projects attempt to reassure the public by showing the benign nature of facilities located nine to eleven miles from the shore.²¹⁰ But, these visualizations are the proposed facilities on a

204. This is suggested by the fact that a number of nearshore, shallow water projects built in European waters use wind turbines smaller than 3 MW and are in smaller arrays. See Wind Service Holland, *supra* note 3. A land project proposed for coastal Carteret county would have used three 1.5 MW wind turbines. See Lori Wynn, *Carteret Wind Farm Ordinance Takes Flak*, CARTERET COUNTY NEWS-TIMES (N.C.) (Sept. 17, 2008).

205. In fact, research and development of alternative energy production facilities other than wind, i.e., current, tidal, or wave, which might generate considerably less than 300 MW, suggests a reconsideration of the definition of “major energy facilities” is needed.

206. 15A N.C. ADMIN. CODE 7M.0403(e).

207. EMC REPORT, *supra* note 170, at 12.

208. 15A N.C. ADMIN. CODE 7M.0403(e).

209. See EMC REPORT, *supra* note 170, at 12.

210. See, e.g., Bluewater Wind Delaware Project, *supra* note 7 (follow the “Wind Park Visualizations” hyperlink, then follow the instructions for viewing the individual visualizations) (last visited May 4, 2009); Cape Wind, *supra* note 7 (follow the “Click here for a computer simulation of the view from points around Cape Cod and the Islands” hyperlink).

clear or relatively clear day.²¹¹ None of them show the project at night. At night, aircraft warning lights, some of which are strobe lights, and other lighting on the turbine towers may create greater scenic visibility issues than what appears when an array of white wind turbine towers is depicted on a sunny day against a bright, light blue horizon.²¹² Therefore, in determining whether a facility will have a significant adverse impact on protected scenic views, the CRC should require adequate information about night visibility under differing conditions.

The CAMA coastal energy rules also contain a number of other criteria that must be satisfied before a CAMA permit will be issued for a major energy facility.²¹³ All these CAMA rules are enforceable policies for purposes of a consistency review of a project to be sited in federal waters. Consequently, a complete review should be undertaken of these rules in light of potential water-based alternative energy development to determine whether all potential adverse impacts will be fully addressed in the CRC CAMA permit process.

2. CAMA Rules Impacting Transmission Line Placement

In order to transfer the electricity generated to the electrical grid, transmission lines from the offshore facilities will have to pass through state waters and cross or pass under state coastal shores. The placement of those transmission lines could require a major CAMA development permit.²¹⁴ Although such transmission lines are “water dependent uses,”²¹⁵ and a CAMA general permit exists for the installation of utility lines, that rule directs that “[d]evelopment carried out under this permit must be consistent with . . . AEC

211. See Bluewater Wind Delaware Project, *supra* note 7; Cape Wind, *supra* note 7.

212. CAPE WIND DRAFT EIS, *supra* note 21, § 5.3.3.4.2, at 5-197 to -198. The final environmental impact statement does contain some night view simulations approximating the appearance of the Cape Wind turbines from several land locations. See CAPE WIND EIS, *supra* note 15, app. A, at fig.5.3.3-2.

213. See 15A N.C. ADMIN. CODE 7M.0403(f) (2007).

214. Whether a major development permit would be required depends in part upon the existence or nonexistence of Utilities Commission rules addressing the environmental issues presented by such transmission lines.

215. They would be water-dependent uses for two reasons. One is that the new legislation declares a “wind energy facility” to be a water-dependent use and transmission facilities are included in the definition of “wind energy facilities.” See EMC REPORT, *supra* note 170, at 11. Second, even in the absence of the new legislation, the only means for delivering the generated electricity from offshore wind energy facilities to the onshore grid is by transmission lines passing through water areas. Therefore, in order for such transmission lines to perform their essential function, they must be located in a water area and could be reasonably classified as water dependent.

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guidelines”²¹⁶ One of the guidelines states that “[i]n the siting of energy facilities and related structures, the following areas shall be avoided . . . primary dunes and frontal dunes [and] established recreation areas.”²¹⁷ If transmission lines are viewed as “related structures,” the rule would prohibit such lines from crossing any ocean beach. Even if transmission lines fall outside of this rule, other CAMA rules prohibit almost all forms of “development” seaward of the erosion setback lines and on or through the beach and adjacent dunes.²¹⁸ Because transmission lines are not one of the activities exempted from these rules, a CAMA permit could not be obtained to cross or pass under coastal shorelines. This would leave the inlets as the only other possible passage area.²¹⁹ Unless technical limitations exist or concerns about shifting channels or interference with navigation are presented, the passage of such lines through the inlets would be possible and consistent with CAMA. However, if the State intends to support and promote wind energy development in ocean waters, a re-examination of the CAMA rules limiting the location of transmission lines is needed.

IV. OBTAINING THE LEGAL RIGHT TO OCCUPY STATE-OWNED SUBMERGED LANDS

A. *Leases of State-Owned Submerged Lands*

In addition to a CAMA permit and any other necessary state and federal permits, a wind energy project proposed for state waters will need a submerged lands lease and related easement rights from the

216. 15A N.C. ADMIN. CODE 7H.1604(h). Another rule contains some specific conditions that would affect the location of the placement of transmission lines in the sounds, such as avoiding wetlands. 15A N.C. ADMIN. CODE 7H.1605.

217. *Id.* at 7M.0403(f)(10)(G), (H). Whether the rule will be a barrier depends in part upon how the EMC’s, State Utilities Commission’s, and CRC’s authority over transmission lines is resolved.

218. *See, e.g., id.* at 7H.0309(a) (listing the few exceptions to the general prohibition).

219. One qualification exists. Under the Federal Coastal Zone Management Act, “lands the use of which is by law subject solely to the discretion of or which is held in trust by the Federal Government, its officers or agents” is excluded from the definition of “coastal zone.” 16 U.S.C. § 1453(1) (2006). That means that areas such as the National Seashore are not part of North Carolina’s “coastal zone.” Therefore, unless an activity in such a federal enclave “spills over” into the state’s coastal zone, CZMA consistency is not required. That means transmission lines could cross National Seashore barrier islands or other federal lands along the coast of North Carolina because federal agencies could issue the necessary permits. However, it should be remembered that such transmission lines would still need state easements and permits for crossing any state-owned submerged lands.

State.²²⁰ Existing statutes do not specifically authorize leasing state-owned submerged lands for use as sites for wind energy or any form of renewable energy. But, section 146-10 of the General Statutes of North Carolina appears to grant the North Carolina Department of Administration (“DOA”) the necessary authority to enter into such leases.²²¹ Section 146-10 authorizes the DOA to “lease or rent the vacant and unappropriated lands, swamplands, and lands acquired by the State by virtue of being sold for taxes.”²²² Section 146-10 does not specifically include the leasing of “submerged lands.”²²³ Therefore, the statutory interpretation question is whether “vacant and unappropriated” lands include “submerged lands.” At times, in chapter 146, subchapter I, “vacant and unappropriated lands” appears to be a separate category from “submerged lands.” For example, the purpose of subchapter I of chapter 146 is:

to vest in the Department of Administration, subject to rules and regulations adopted by the Governor and approved by the Council of State as hereinafter provided, responsibility for the management, control and disposition of all *vacant and unappropriated lands* . . . and *submerged lands*, title to which is vested in the State or in any State agency, to be exercised subject to the provisions of this Subchapter.²²⁴

Other examples are section 146-4, which provides that the DOA “may sell the vacant and unappropriated lands”²²⁵ and section 146-3, which states that “[a]ny State lands may be disposed of by the State . . . with the following exceptions: (1) [n]o submerged lands may be conveyed in fee, but easements therein may be granted, as provided in this Subchapter.”²²⁶ Section 146-6(b), which deals with unauthorized raising of any submerged lands above water, also appears to create such a distinction.²²⁷ That section states that such

220. The state holds title to submerged lands lying under navigable waters. Therefore, a private entity seeking to place wind turbines in such areas will need to obtain the necessary rights from the appropriate state agency. *See Gwathmey v. State ex rel. Dep’t of Env’t, Health, & Natural Res.*, 342 N.C. 287, 293, 302, 304, 464 S.E.2d 674, 678, 683–84 (1995); *see also* Monica Kivel Kalo & Joseph J. Kalo, *The Battle to Preserve North Carolina’s Estuarine Marshes: The 1985 Legislation, Private Claims to Estuarine Marshes, Denial of Permits to Fill, and the Public Trust*, 64 N.C. L. REV. 565, 576–77 (1986) (indicating that the State holds title to submerged lands for the public trust).

221. *See* N.C. GEN. STAT. § 146-10 (2007).

222. *Id.*

223. *See id.*

224. *Id.* § 146-1(a) (emphasis added).

225. *Id.* § 146-4.

226. *Id.* § 146-3.

227. *See id.* § 146-6(b).

raised submerged lands “shall become a part of the vacant and unappropriated lands of the State.”²²⁸ This implies that while the lands are submerged, they are not part of the “vacant and unappropriated lands of the State.”

On the other hand, section 146-64 places “submerged lands” as a subcategory of “vacant and unappropriated lands.”²²⁹ This statutory section states that “‘vacant and unappropriated lands’ means all State lands title to which is vested in the State as sovereign.”²³⁰ Since the definition of “State lands” includes “submerged lands”²³¹ and title to submerged lands is held by the State as sovereign, “vacant and unappropriated lands” would include all “submerged lands.” In addition, ancestors of chapter 146 support the inclusion of “submerged lands” within “vacant and unappropriated lands.” For example, an 1855 act of the North Carolina General Assembly provided that “[a]ll vacant and unappropriated lands, belonging to the State, shall be subject to entry . . . except, . . . [l]ands covered by navigable waters.”²³² Because “submerged lands” are by definition “lands covered by navigable waters,”²³³ this early statute shows that the General Assembly intended to include “submerged lands” within any statute using the phrase “vacant and unappropriated lands,” unless the General Assembly specifically stated otherwise.

B. The Need for a New Leasing Statute

Even though section 146-10 provides the necessary leasing authority, it is advisable for the General Assembly to enact a new statute specifically designed to address the multitude of issues associated with leasing state-owned submerged lands for wind energy projects. Unlike other activities occupying State submerged lands, such as piers, bridges, power lines, pipelines, and transmission lines (for which leases or easements are issued under these statutes), a wind energy facility will occupy a large water area; will contain a large number of wind turbine towers and blades extending over 400 feet above the water surface; will include deep, broad foundations, connecting transfer lines, and other infrastructure; and will

228. *Id.*

229. *Id.* § 146-64(9).

230. *Id.*

231. *Id.* § 146-64(6).

232. Act of Feb. 2, 1855, ch. 18, § 1.1, 1854–1855 N.C. Pub. Laws 37, 37.

233. Section 146-64(7) defines “submerged lands” as “State lands which lie beneath . . . [a]ny navigable waters within the boundaries of this State, or . . . [t]he Atlantic Ocean to a distance of three geographical miles seaward from the coastline of this State.” N.C. GEN. STAT. § 146-64(7).

necessitate substantial disruptions of the water bottom to install.²³⁴ Arguably, under such conditions, a wind energy developer will need not only the rights to occupy the submerged lands, but also explicit rights to occupy significant parts of the water column and air space above the water surface. Section 146-10 does not specifically authorize the authority to lease or grant water column rights and air space rights.²³⁵ To avoid any uncertainties about or challenges to the granting of water column rights and air space occupancy rights, the General Assembly should pass specific comprehensive legislation to address these and other important and related questions.

Having a comprehensive lease statute would also provide an established framework for such projects. Among the issues a comprehensive statute could address are: (1) the type of leases (exploration versus development); (2) the length of the term of leases; (3) the royalties and other compensation payable to the State; (4) performance requirements and the relationship of the performance requirements to the continuation of the lease; (5) grounds for termination of the lease; (6) maintenance and decommission obligations; (7) responsibilities in the event of storm or other damage; (8) preference funds, bonds, or other financial assurances; (9) how potential user conflicts should be evaluated; and (10) the establishment of guidelines for addressing any potential user conflicts in both the lease issuance decision and in the lease itself.

Before the State enters into any long-term lease to occupy large areas of state-owned submerged lands located in public waters, each of these matters deserves careful analysis. For purposes of federal alternative energy leasing of the OCS, MMS conducted an in-depth examination and analysis of commercial leasing issues.²³⁶ Minerals Management Service's discussion and proposed rules provide useful guides for North Carolina in its efforts to address similar questions.

Compensation to the State and performance bonds and other financial assurances should be the subject of particularly careful thought. Wind energy facilities located in public trust waters may produce significant revenues during the life of any lease. The public,

234. See, e.g., CAPE WIND EIS, *supra* note 15, at 2-1, 2-6 (detailing the project size and space requirements); see also DONG ENERGY ET AL., DANISH OFFSHORE WIND: KEY ENVIRONMENTAL ISSUES 34, 37, 41 (2006), available at http://193.88.185.141/Graphics/Publikationer/Havvindmoeller/havvindmoellebog_nov_2006_skrm.pdf (discussing different types of foundations).

235. The statute authorizing shellfish leases specifically addresses the right to occupy the water column. See N.C. GEN. STAT. § 113-202.1.

236. See Alternative Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf, 73 Fed. Reg. 39,376, 39,377-78 (proposed July 9, 2008).

through the State, should be both fully and fairly compensated for the use of this public resource and for the unavoidable adverse impacts upon other public uses.²³⁷ The State must take care not to create a compensation structure that subsidizes water-based wind energy more than land-based wind energy, which could have the unintended consequence of pushing wind energy development into coastal and ocean waters.²³⁸ Secondly, there should be detailed provisions that guarantee the existence of the funds necessary for decommissioning and restoring a site at the end of its functional life.²³⁹ This could be accomplished by setting aside a percentage of the revenues into a decommissioning fund or by requiring the project developer to provide a performance bond.

237. In its annual leases for offshore tracts, Texas includes an annual fee per tract until production begins. Once production begins royalty fees are paid. The royalty fees start at 3.5% of the revenue and increase to 6.4% over the productive life of the lease. Texas General Land Office, Wind Energy Lease, *reprinted in* Kalo & Schiavinato, *supra* note 9, app. C at 263–314; *see also* Alternative Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf, 73 Fed. Reg. at 39,407 (indicating that acreage-based fees are charged during the pre-operational period and are replaced by royalty fees once production starts).

238. *See* Jeremy Firestone et al., *Regulating Offshore Wind Power and Aquaculture: Messages from Land and Sea*, 14 CORNELL J.L. & PUB. POL'Y 71, 105 (2005). In its discussion of its proposed rates for federal offshore wind energy leases, MMS recognizes that external costs of fossil fuels may be reduced by substitution of wind energy. Alternative Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf, 73 Fed. Reg. at 39,408. MMS believes that existing incentives, such as federal production tax credits and renewable energy portfolio programs, are the principal compensation to projects for the social benefits derived from alternative energy production. *Id.* at 39,409. Its goal in establishing rates was to ensure that the rate structure does not seriously undermine the purpose of that compensation. *Id.*

The following example illustrates MMS's proposed rate structure:

An offshore lease, issued non-competitively, on 12,000 acres of the OCS would be required to pay \$36,000 to the Government annually based on a charge of \$3.00 per acre in rent during the site assessment Once . . . the operations term begins, . . . operating fees typically are payable. For a lease with an installed capacity of 200 megawatts and an operating capacity factor of 0.38, i.e., 38 percent, the operating fee payable to the Government would be about \$333,000 during the first two years of the operations term and about \$666,000 annually thereafter if the applicable electricity price was \$50 per megawatt hour.

Id. at 39,412. As is apparent, over the life of a twenty-five year operating term lease, the rent received would be substantial. Arguably, the State has a fiduciary obligation to the public to assure that the state-issued leases provide for commensurate rent for state-owned submerged lands.

239. Firestone et al., *supra* note 238, at 107. If remediation is not possible, then the public should be compensated for the damage that has occurred. *Id.*

These matters could be left for the DOA to address on a case-by-case basis, but having a comprehensive statute would provide a clear, consistent legal framework for investors and developers in wind energy, who may be considering North Carolina waters as potential sites for wind energy facilities. It would also provide the transparency needed to assure that the public interest in both energy development and appropriate use of state waters is taken into account when the State enters into any such leases. A potential general model for such a statute would be section 146-12 of the General Statutes of North Carolina, enacted by the General Assembly in 1999.²⁴⁰ Section 146-12 created a comprehensive framework for the issuance of riparian leases for piers and other structures extending into state navigable waters and addressed a wide range of leasing issues.²⁴¹ Although wind energy leases present more complex and difficult issues than leases for piers and other structures extending into state navigable waters, both the concept of a comprehensive statute and the general framework of section 146-12 are applicable to wind energy leasing.

In addition to any guidance that the General Assembly might provide through a comprehensive statute, the DOA should develop a lease form. A wind energy lease is, and should be, a very complex instrument. This complexity is illustrated by the forty-seven page, somewhat-small print, wind energy lease used by the Texas General Lands Office.²⁴² Careful advance development of such a lease for use in North Carolina would avoid the unintentional oversights and mistakes that sometimes occur when faced with the pressure of a pending project.

C. *Easements for Transmission Lines and Related Infrastructure*

Obtaining easements for transmission lines or other similar infrastructure does not pose any problem for developers of water-based wind turbine facilities. Section 146-11 of the General Statutes of North Carolina authorizes the DOA to “grant easements . . . [and] rights-of-way . . . in State lands for the purposes of[:] (1) [c]ooperating with the federal government, (2) [u]tilizing the natural resources of the State, or (3) [o]therwise serving the public interest.”²⁴³ Each of these three grounds provides a basis for issuing easements related to the development of wind energy facilities. The

240. N.C. GEN. STAT. § 146-12.

241. *Id.*

242. Texas General Land Office, *supra* note 237.

243. N.C. GEN. STAT. § 146-11.

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first would certainly apply to wind energy projects sited in federal waters that need easements across state lands to shore-based facilities. The second could be broadly interpreted to include “wind” as a natural resource. The third would encompass the public interest in the development of renewable energy sources.

D. Easements for Structures Extending from the Shore

If a wind energy development’s onshore receiving facilities require structures such as piers, no easement from the State would be required for such structures. Presumably, the wind energy producer will own or lease riparian land to which the piers or other similar structures attach. Although easements normally are required for such structures, section 146-12 of the General Statutes of North Carolina exempts “[s]tructures constructed by any public utility that provide or assist in the provision of utility service.”²⁴⁴

CONCLUSION

The central conclusion of this Article is that the State of North Carolina presently is not fully prepared to address regulatory concerns raised by proposals to place wind turbines in state or federal waters. The State must address potential jurisdictional conflicts between the Utilities Commission, the EMC, and the CRC; update its existing coastal energy policies; amend CRC rules that present unintended barriers to the development of wind energy in coastal waters; and revisit and revise its existing submerged lands leasing statutes to provide a comprehensive framework for the granting of rights to occupy and use state-owned submerged lands, waters, and air space for alternative energy generation purposes, especially for wind energy projects. Clarifying North Carolina’s legal framework would reduce unnecessary regulatory confusion and burdens for applicants for permits to place such projects in state waters, assure that North Carolina is prepared to address the important environmental and other resource issues presented by such proposals, and provide the State with a set of tools to assure that development of wind energy and other forms of water-based renewable energy in

244. *Id.* § 146-12(n)(2). Although section 146-12(n) states that “[t]he following types of structures shall not require an easement under this section,” leaving open the possibility that an easement might be required by another section of chapter 146, the intent of the General Assembly was to exclude the exempted structures from any lease requirement. *Id.*

federal waters is done in a manner consistent with North Carolina's interests.

The proposed 2009 legislation offered the State an opportunity to provide the necessary clarity by vesting permitting authority for water-based wind energy projects in the CRC and by legislatively removing some of the potential impediments to water-based wind energy development. With some amendments, the legislation passed the Senate but failed to pass the House before the close of the 2009 Session on August 11, 2009.²⁴⁵ The provisions addressing wind energy development in the mountains, and not the coastal provisions, were the source of disagreement.²⁴⁶ It is likely the legislation will be considered again during the General Assembly's 2010 Session. Hopefully, the House and Senate can resolve any differences at that time. The General Assembly's continuing interest and support for water-based wind energy is shown by the inclusion of Section 9.14 in the 2009–2010 State Budget. This section authorizes the University of North Carolina to continue to study water-based wind energy and, through a third party, to construct as many as three demonstration water-based wind turbines.²⁴⁷

245. The history of Senate Bill 1068 appears at <http://www.ncleg.net/gascripts/BillLookUp/BillLookUp.pl?Session=2009&BillID=s+1068>. The history of the companion House Bill 809 appears at <http://www.ncleg.net/gascripts/BillLookUp/BillLookUp.pl?Session=2009&BillID=h+809>.

246. See Posting of John Downey to Power City blog, *Bill to Regulate N.C. Wind Energy Makes Progress*, http://charlotte.bizjournals.com/charlotte/blog/power_city/2009/07/bill_to_regulate_nc_wind_projects_makes_progress.html (Jul. 7, 2009, 4:17 EDT) (noting that there was strong opposition to the bill from many citizens who reside in the mountains).

247. The 2009 State Budget is contained in Senate Bill 202. Section 9.14(a), entitled "Coastal Demonstration Wind Turbines," appropriates \$300,000 for the continuation of the UNC wind energy study, including contracting with a third party for the design, permitting, construction, operation, and decommissioning of up to three demonstration water-based wind turbines and necessary support facilities. Current Operations and Capital Improvements Appropriations Act of 2009, 2009 N.C. Sess. Laws 451 § 9.14(a).