

WHY HAVE DEVELOPERS BEEN POWERLESS TO DEVELOP OCEAN POWER?

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I. INTRODUCTION: BLUE—THE NEW GREEN!

Suppliers of renewable energy are having a hard time coming up with new sources of renewable energy . . . to meet the rise in [its] popularity.¹

Gone are the days when proponents of green energy are laughed at for their backward, hippy ideas. Alternative energy is now perceived as “hot.”² It is so desirable, in fact, that two federal agencies have heatedly vied for control over a promising, newly-appreciated, green energy source that is distinctively blue—the ocean. Since 2005, both the Department of Energy’s Federal Energy Regulatory Commission (“FERC” or the

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1. Timothy Roberts, *Green energy hot, price rising*, SAN JOSE B. J., Aug. 10, 2007, available at <http://sanjose.bizjournals.com/sanjose/stories/2007/08/13/story1.html>.

2. *Id.* Everything from America’s hurricane-vulnerable energy infrastructure, costly military presence in oil-rich countries, volatile prices at gasoline stations, and expanding eco-awareness to the election season have contributed to this perception. See *infra* note 9.

“Commission”) and the Department of the Interior’s Minerals Management Service (“MMS”) have claimed lead regulatory authority over alternative energy projects that are located on the portion of the Outer Continental Shelf (“OCS”)³ between approximately 3 to 12 nautical miles from the shore.⁴

Although both of these federal bodies exist to further the national good, their territorial debate has done the opposite. It has wasted precious public resources on the promulgation of duplicative regulations and has retarded the development of the fledgling hydrokinetic industry, which seeks to generate renewable and increasingly economically competitive power from the ocean.⁵

[F]ailure to definitively resolve the FERC-MMS jurisdictional dispute creates so much regulatory uncertainty and risk that it will drive away private investors and hobble our nation’s fledgling marine renewables industry at the precise point in time that our member developers have finally started to acquire their proverbial sea legs.⁶

Developers who want to place a project in the waters of the disputed zone have known neither which agency to seek regulatory approval from nor how the permits they receive now will be treated in the future.⁷ Furthermore, complying with two sets of overlapping and inconsistent regulations is a non-option for projects that reap little economic benefit at this early stage of development. This administrative bungle needs to be resolved permanently before the hydrokinetic industry can surge forward

3. See MMS: What is the Outer Continental Shelf?, <http://www.gomr.mms.gov/homepg/whoismms/whatsocs.html> (last visited Apr. 12, 2009). The OCS includes the submerged lands, subsoil, and seabed lying generally between 3 and 200 nautical miles from the shore. It is bounded by the seaward extent of state and federal jurisdiction. Although state jurisdiction typically extends out to 3 nautical miles from the shore, in Texas and the Gulf Coast of Florida it extends out to 3 marine leagues (9 nautical miles), and in Louisiana it extends out to 3 imperial nautical miles. Federal jurisdiction extends to the farthest of 200 nautical miles or, if the continental shelf can be shown to exceed 200 nautical miles, a distance not greater than a line 100 nautical miles from the 2,500 meter isobaths or a line 350 nautical miles from the baseline. *Id.*

4. See *infra* Part III (describing the conflict in detail); see also *infra* Postscript (discussing recent efforts to resolve the dispute).

5. See FERC: Hydropower-Hydrokinetic Projects, <http://www.ferc.gov/industries/hydro-power/Indus-act/hydrokinetics.asp#skipnavsub> (last visited Apr. 12, 2009) (defining “hydrokinetics” as hydroelectric generation from ocean waves, tides, currents, and inland waterways).

6. Minerals Mgmt. Serv., U.S. Dep’t of Interior, Comments of the Ocean Renewable Energy Coalition on Mineral Management Service’s Notice of Proposed Rulemaking on Alternative Energy Related Uses on the Outer Continental Shelf, RIN 1010-AD30 at 5 (Sept. 8, 2008), available at <http://www.oceanrenewable.com/wp-content/uploads/2009/01/mmsnoprcomments9081.pdf>.

7. FINLAY ANDERSON ET AL., A PROGRAMMATIC APPROACH TO WAVE ENERGY PLANNING: OPPORTUNITIES FOR THE OREGON WAVE ENERGY TRUST 2 (2007), http://www.csc.noaa.gov/cz/2007/Coastal_Zone_07_Proceedings/PDFs/Tuesday_Abstracts/3369.Anderson.pdf.

and the public can benefit from this essentially untapped renewable source of energy.

Since the agencies have radically different regulatory approaches and capabilities, the designation of a primary regulator will affect the long-term viability of the ocean power industry significantly. This article argues that FERC is the preferable administrator. FERC possesses institutional expertise with hydropower, something MMS lacks. FERC also has instituted regulatory programs that address the short-term needs of the nascent industry, which MMS has failed to do. More significantly, since FERC already indisputably possesses jurisdiction over ocean projects out to 3 nautical miles from the shore, giving FERC jurisdiction to 12 nautical miles will reap the benefits of consistency as nearly all offshore renewable energy projects will fall under the jurisdiction of one primary regulator, rather than two. FERC's regulatory approach is imperfect, however, and it can learn much from MMS's actions, including the value of soliciting the public's input throughout its efforts to establish a regulatory regime.

The rest of this article expands upon these arguments. Part II first describes the ocean's immense potential for fueling America's energy needs. Then Part II briefly explains the principle types of ocean energy technologies that are the subject of the inter-agency dispute. Part III probes the jurisdictional conflict by examining the statutory arguments of each agency and the actions taken to assert regulatory control. It determines that, in the absence of clear Congressional intent, chief regulatory authority should be allocated to the agency that has the greatest expertise with hydropower technologies, has already acted to address the industry's need for rapid regulatory action, and has primary jurisdiction over hydrokinetic projects up to the OCS boundary. Therefore, FERC should obtain the role of primary regulator. Part IV concludes that Congress, by clarifying that the Commission has the ultimate regulatory jurisdiction over wave, current, and tidal energy projects, could end the uncertainty that stifles the development of these new technologies. Finally, the Postscript considers recent efforts by the Obama Administration to resolve the dispute. It determines that these actions, though a step in the right direction, only provide a temporary resolution of the dispute. More regulatory certainty is needed to encourage the robust development of blue energy—the new green.

II. BACKGROUND TO THE CONTROVERSY

A. *The Powerful Ocean*

Covering almost three quarters of the planet, the ocean holds immense power. Waves and tides have shaped shorelines for millennia; ocean winds have chilled and warmed continents; and currents have dictated many a shipping route. Although relatively little of the power that fuels domestic residential, commercial, or industrial uses of energy derives from the oceans, this will likely change in the near future. The public is becoming increasingly alarmed about pollution from conventional fossil-fuel energy sources, the threat to national energy security that the United States' dependence on imported fuel creates, and the correlative relationship between the use of fossil fuels and global warming.⁸ In addition, the prices of traditional energy sources such as crude oil, gasoline, natural gas, and coal continue to climb dramatically making alternative sources of energy more economically feasible.⁹

As conditions ripen for the emergence of new energy sources, knowledge of the ocean's potential as an alternative energy source also grows. Ocean wave and current power is capable of producing over 350-terrawatt hours per year, which would more than double present hydropower production.¹⁰ A study performed for the Department of Energy by the Electric Power Research Institute ("EPRI") conservatively estimated that ocean wave energy devices could increase U.S. generation capacity by 10,000 megawatts (MW) by 2025 with a 3,000 MW increase for new hydrokinetic technologies.¹¹ The study further ventured that, if economic and regulatory incentives were designed to

8. See *Massachusetts v. EPA*, 549 U.S. 497, 532 (2007) (holding that the Environmental Protection Agency may regulate the emission of greenhouse gases because they are air pollutants); see also John Vidal & Tom Kington, *Pope issues new green message for world's Catholics*, THE GUARDIAN, Apr. 27, 2007, at 27, available at <http://www.guardian.co.uk/world/2007/apr/27/> ("The Vatican yesterday added its voice to a rising chorus of warnings from churches around the world that climate change and abuse of the environment is against God's will, and that the one billion-strong Catholic church must become far greener."); Press Release, The White House, President George W. Bush, President Bush Discusses United States International Development Agenda (May 31, 2007), available at <http://georgewbush-whitehouse.archives.gov/news/releases/2007/05/20070531-9.html> ("In recent years, science has deepened our understanding of climate change and opened new possibilities for confronting it. The United States takes this issue seriously.").

9. Darrell Blakeway & Carol Brotman White, *Tapping the Power of Wind: FERC Initiatives to Facilitate Transmission of Wind Power*, 26 ENERGY L.J. 393, 393 (2005).

10. FERC, Preliminary Permits for Wave, Current, and Instream New Technology Hydropower Projects, Notice of Inquiry and Interim Statement of Policy, No. RM07-08-000 at 3 (Feb. 15, 2007), available at <http://www.ferc.gov/whats-new/comm-meet/2007/021507/H-1.pdf> [hereinafter Notice of Inquiry] citing Hydroelectric Infrastructure Technical Conference, Docket No. AD06-13-000 (Dec. 6, 2006), transcript at 12, 22 (testimony of George Hagerman).

11. ELEC. POWER RESEARCH INST., ASSESSMENT OF WATER POWER POTENTIAL AND DEVELOPMENT NEEDS, FINAL REPORT vi (2007), http://www.aas.org/spp/cstc/docs/07_06_1ERPI_report.pdf.

foster this new technology, the growth would be far greater.¹² To put these figures into perspective, a 1 MW electricity-generating device operating at full capacity generates enough electricity to supply about 1,000 households.¹³

B. Ocean Technologies

Renewable energy may be harnessed from the ocean in the form of wind, wave, tidal, current, solar, and hydrogen power.¹⁴ To generate wind power, the most highly-developed renewable offshore technology,¹⁵ wind turbines, use aerodynamic lift to convert the kinetic energy of moving air into electricity. Offshore wind farms consist of a group of these turbines operating independently and delivering power to onshore customers through a common undersea cable.¹⁶ Onshore wind turbines have been used for centuries, but offshore sites offer the advantage of stronger and more consistent wind resources.¹⁷ Offshore wind farms have been successfully developed and connected to electrical grids in Denmark, England, Ireland, Holland, Sweden, and Wales.¹⁸ In the U.S., full-scale, offshore wind parks are only in the pre-planning and permitting stages.¹⁹ The Cape Wind project, which is a proposed wind farm off the coast of Cape Cod, Massachusetts, is farthest along in the permitting process.²⁰ As planned, the project would consist of 130 wind turbines with blades

12. *Id.* at vii.

13. 1 MINERALS MGMT. SERV., U.S. DEP'T OF THE INTERIOR, OCS ALTERNATIVE ENERGY FINAL PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT (EIS) ch. 3 at 3-1 (2007), available at http://www.ocsenergy.anl.gov/documents/fpeis/Alt_Energy_FPEIS_Chapter3.pdf [hereinafter PROGRAMMATIC EIS].

14. FERC has only asserted jurisdiction over projects that use water, not wind or sun, as the source of generation. Carolyn Elefant, *FERC's Aqua Energy Decision: Testing the Ocean Waters*, 4 (2008), <http://www.his.com/~israel/loce/cefercart.pdf>. However, the FERC-MMS dispute does affect the development of wind power technologies. FERC's permits and licenses grant ocean developers the exclusive rights to study or develop a particular area, enabling the developers to use the permits and licenses to effectively block offshore wind development or other potential uses. *Id.* Although the dispute could affect the development of solar technologies and production of hydrogen as well, these technologies are still in the conceptual stage and are not expected to be economically viable on the OCS for research, demonstration, or commercial ventures within the next five to seven years. PROGRAMMATIC EIS, *supra* note 13, at 3-1.

15. Jeremy Firestone et al., *Regulating Offshore Wind Power and Aquaculture: Messages from Land and Sea*, 14 CORNELL J.L. & PUB. POL'Y 71, 75 (2004).

16. PROGRAMMATIC EIS, *supra* note 13, at 3-3.

17. MINERALS MGMT. SERV., U.S. DEP'T OF THE INTERIOR, WORLDWIDE SYNTHESIS AND ANALYSIS OF EXISTING INFORMATION REGARDING ENVIRONMENTAL EFFECTS OF ALTERNATIVE ENERGY ON THE OUTER CONTINENTAL SHELF ch. 3 at 3-1 (2007), <http://www.mms.gov/offshore/AlternativeEnergy/PDFs/MMSAESynthesisReport.pdf> [hereinafter ALTERNATIVE ENERGY ON THE OCS].

18. *Id.* In Denmark, onshore and offshore wind technology provided 19% of total electricity consumption in 2004. *Id.* The London Array off the English coast, the largest proposed wind farm, is expected to provide electricity for 750,000 homes. *Id.*

19. *Id.*

20. Guy R. Martin & Odin A. Smith, *The World's Largest Wind Energy Facility in Nantucket Sound? Deficiencies in the Current Regulatory Process for Offshore Wind Energy Development*, 31 B.C. ENVTL. AFF. L. REV. 285, 287 (2004).

extending more than 400 feet above the sea, making it one of the largest offshore wind energy plants in the world.²¹

Wave power represents another promising form of offshore renewable energy source. Wave energy technologies generate electricity from the undulating motion of the ocean's waves.²² The power in a moving wave may drive a turbine or other device directly, or it may pressurize air or hydraulic fluid to power a generator.²³ Although the United States has considerable wave energy potential,²⁴ testing of ocean wave energy conversion technologies has occurred only on a small, prototype scale at a few locations. However, wave energy projects will likely be operational and connected to the U.S. grid within the next five to ten years.²⁵ Other countries have been more aggressive than the U.S. in their efforts to harness the power of ocean waves. The Scottish government, for instance, has provided grants of \$7.5 million for wave and tidal projects in its waters.²⁶ Portugal became the site of the world's first wave farm when a Scottish developer launched Pelamis machines, named after the Latin word for sea snake, into Portugal's waters. The machines consist of "a series of red tubes, each about the size of a small commuter train, linked together and pointed towards the waves . . ." ²⁷ As waves travel down the tubes, a hydraulic system harnesses the resulting movement and generates electricity.²⁸

Tidal technologies represent yet another form of hydrokinetic energy. Unlike other forms of offshore ocean energy technologies, tidal technologies typically occur close to shore, outside of any potential MMS jurisdiction.²⁹ These technologies are nevertheless relevant to the FERC-MMS dispute because they provide the basis for the development of the ocean current technologies that both agencies seek to regulate.³⁰ Tidal technologies take various forms. Barrage technologies generate electricity from the difference of water height on either side of an

21. *Id.* at 286.

22. NIC LANE, CONGRESSIONAL RESEARCH SERVICE REPORT FOR CONGRESS, ORDER CODE RL33883, ISSUES AFFECTING TIDAL, WAVE, AND IN-STREAM GENERATION PROJECTS CRS-3 (2007), http://www.policyarchive.org/bitstream/handle/10207/3144/RL33887_20020220.pdf?sequence=1 [hereinafter LANE].

23. *Id.*

24. Office of Energy Efficiency and Renewable Energy, U.S. Dep't of Energy, Energy Savers: Ocean Wave Power, http://www.eere.energy.gov/consumer/renewable_energy/ocean/index.cfm/mytopic=50009 (last visited Apr. 12, 2009).

25. ALTERNATIVE ENERGY ON THE OCS, *supra* note 17, at 3-14

26. *Id.*

27. Giles Tremlett and Paul Hamilos, *Portugal gambles on 'sea snakes' providing an energy boost*, THE GUARDIAN, Oct. 1, 2007, <http://www.guardian.co.uk/environment/2007/oct/01/waveandtidalpower.renewableenergy>.

28. *Id.*

29. PROGRAMMATIC EIS, *supra* note 13, at 3-1.

30. For instance, one ocean current technology under development uses submerged turbines that are designed to capture energy through the processes of hydrodynamic lift. *Id.* at 3-14.

impoundment built across an area subject to tidal flow, such as a river estuary.³¹ Tidal fences, another technology, can be erected across channels between small islands or across straits between the mainland and an island to capture the energy from tidal currents.³² Tidal turbine technologies, which resemble underwater wind farms, can use the energy of the tidal current to spin a turbine.³³ Ocean current energy technology is at a much earlier stage of development than tidal technologies in the U.S and abroad, with only a small number of prototypes and demonstration units having been tested to date.³⁴ Efforts to adapt tidal technology to ocean currents have raised a number of engineering challenges. Unlike tidal technologies, ocean current technologies are located relatively large distances from shore in sites where there is a lack of slack water and water depths range from 985 to 1,640 feet.³⁵

III. A JURISDICTIONAL OBSTACLE

Despite the growing recognition of the value of “green” ocean technologies, FERC and MMS have hindered their advancement by engaging in a jurisdictional battle. The controversy originated in 2003. In that year FERC held in its *AquaEnergy Group* decision that the scope of its power under the Federal Power Act (“FPA”)³⁶ to issue permits or licenses for wave energy projects extended beyond 3 nautical mile limits, the traditional limit of navigable waters, to the limits of the territorial sea, 12 nautical miles from the shore.³⁷ A couple of years later, the Energy Policy Act of 2005 granted the Secretary of the Department of the Interior the authority, subsequently delegated to MMS, to grant leases, easements, or rights-of-way authorizing activities that produce or support production, transportation, or transmission of energy from sources other than oil and gas on the OCS.³⁸ MMS has asserted that FERC’s authority does not extend beyond the traditional three-mile boundary of the

31. LANE, *supra* note 22, at CRS-2.

32. Office of Energy Efficiency and Renewable Energy, U.S. Dep’t of Energy, Energy Savers: Ocean Tidal Power, http://www.energysavers.gov/renewable_energy/ocean/index.cfm/mytopic=50008 (last visited Apr. 12, 2009).

33. *Id.*

34. PROGRAMMATIC EIS, *supra* note 13, at 3-14. California and Maine are considering tidal power generation. LANE, *supra* note 22, at CRS-4. Also, a prototype tidal project has been deployed in New York’s East River to power a grocery store and a parking garage. Salvatore Salamone, *The Power of the Tides*, RENEWABLE ENERGY WORLD, Apr. 16, 2007, <http://www.renewableenergyworld.com/rea/news/article/2007/04/the-power-of-the-tides-48131>.

35. *Id.*

36. 16 U.S.C. § 817 (2000). Section 23 of the FPA prohibits the development of electric power “in any of the navigable waters of the United States . . . except under and in accordance with . . . a license granted pursuant to the [FPA].” *Id.* (emphasis added).

37. AquaEnergy Group, LTD., 102 FERC ¶ 61,242, 61,734-61,735 (2003) (order denying rehearing), available at <http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=9647239>.

38. Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594 (2005).

territorial sea.³⁹ Rather, it has declared that “[s]uch activities on the OCS are expressly authorized and regulated by the MMS.”⁴⁰

The agencies have independently developed their own regulations to govern renewable energy projects in the disputed zone. FERC has been processing permit and license applications for wave and tidal energy projects since its *AquaEnergy* decision. MMS, on the other hand, has been establishing a cradle-to-grave process to oversee and coordinate projects from initial proposal evaluation, permitting, and leasing, to final project decommissioning at the end of a project’s useful life.⁴¹

Commentators have pointed out the detrimental impact this dispute could have on the development of the offshore alternative energy industry:

This struggle between FERC and MMS, whether perceived or real, may have a significant effect on the nascent industry seeking to develop alternative energy sources on the OCS. Many companies cannot afford to go through, for example, FERC’s permitting process only to find that, in fact, they should have gone through MMS’ permitting process, or vice versa. Obtaining approvals from both agencies would also be extremely burdensome. In short, interagency squabbling may delay the growth of this industry and serve as a bar that would prevent potentially interested companies and investors from entering into this field.⁴²

At a time when the development of alternative energy sources should be encouraged by the federal government to help the nation take a stance against global warming and the U.S.’s problematic reliance on foreign fuels, it is extremely unfortunate that two federal agencies have stifled the progress.

Even though joint regulation with both agencies sharing equally in the responsibility for protecting OCS resources and overseeing projects can be suggested as a possible resolution of the conflict, this should be summarily dismissed. Joint regulation would raise the risk of too many chefs spoiling the broth. Unless one agency accepts a subordinate regulatory role in relation to the other, such an approach would be overly burdensome on developers and would delay the much-needed technological innovation of alternative energy sources. Nonetheless, the agencies have entertained the possibility of joint regulation. They spent over a year negotiating a Memorandum of Understanding (“MOU”) to

39. Protest of the U.S. Mineral Mgmt. Serv., P-12752-000, at 2 (Jan. 31, 2007), available at <http://carolynelephant1.typepad.com/renewables/shore/files/mmsferc.pdf> [hereinafter Protest of the MMS].

40. *Id.* at 10.

41. LANE, *supra* note 22, at CRS-19.

42. Peter J. Schaumberg & William N. Sinclair, *Assessing Interior’s Implementation of the Energy Policy Act of 2005*, SUSTAINABLE DEV. L. & POL’Y, Spring 2007, at 35.

allocate authority on the OCS that was designed to ensure the agencies “don’t overlap or overburden each other.”⁴³ A draft MOU, sent from MMS to FERC on June 5, 2007, set up a three-step process for OCS projects.⁴⁴ MMS would have taken the lead on leasing, which was an area “FERC has no desire to get involved in.”⁴⁵ Then, with the Commission’s support, MMS would have headed the study phase as well.⁴⁶ Finally, FERC would have authorized the construction of projects and related transmission lines.⁴⁷

Although it was expected that the final MOU would be released by early summer,⁴⁸ the agencies did not finalize the MOU because they thought Congress intended to resolve the issue legislatively.⁴⁹ A legislative solution did not materialize, and the inter-agency dispute continued as each agency effected its own regulatory regime for the new technologies. Recently, on April 9, 2009, FERC and the Department of the Interior (“DOI”) signed into effect a new MOU that, like the earlier draft MOU, envisions a system of regulation with two lead regulators.⁵⁰ This agreement serves as a concrete indication that the government wants to resolve the dispute. However, an MOU is not a legally binding document and, as discussed in the Postscript, may not provide anything more than a temporary solution to the interagency dispute. Until a legislative solution appears, regulatory uncertainty will likely persist.

A consequence of the continuing regulatory uncertainty is that “companies are forced to hold off seeking funding for specific projects as financial institutions are loath to fund projects with so much risk within the permitting arena.”⁵¹ But Congressional inaction, though stifling for the infant industry, has an upside. Fermenting the dispute for several years has given FERC and MMS time to assert and defend their statutory arguments, demonstrate the types of regulatory approaches they will likely administer to future renewable energy projects on the OCS, and expose how regulation of these projects relates to their other official responsibilities.

43. *MMS, FERC to Coordinate Efforts on Leasing of OCS Wave Energy Projects*, INSIDE FERC, June 11, 2007, 1 (quoting Mark Robinson, Director of the Office of Energy Projects).

44. *Id.*

45. *Id.*

46. *Id.* at 10. The actual extent of FERC’s role was not resolved in the draft MOU, including whether the Commission would continue its preliminary permitting process for feasibility studies.

47. *Id.*

48. *Id.* at 9.

49. Interview with Staffer, FERC (Oct. 18, 2007).

50. Memorandum of Understanding between the U.S. Dep’t of the Interior and Fed. Energy Regulatory Comm’n 3 (Apr. 9, 2009), available at http://www.mms.gov/offshore/Alternative_Energy/PDFs/DOI_FERC_MOU.pdf [hereinafter MOU].

51. Sean O’Neill, *What’s Happening in Congress with Ocean Renewables?*, RENEWABLE ENERGY WORLD, Aug. 21, 2007, <http://www.renewableenergyworld.com/rea/news/article/2007/08/whats-happening-in-congress-with-ocean-renewables-49690>.

A. Statutory Authority

The administrative conflict cannot be easily resolved through analysis of statutory authority because congressional intent to designate a lead regulatory authority appears ambiguous. However, a close look at the statutory arguments of the two regulatory contenders reveals that FERC's claims of statutory authority require the less demanding interpretation of the relevant statutes. FERC does not dispute MMS's authority to issue permits and leases on the OCS but sees its own perceived role as lead regulator of offshore renewable energy projects as being mutually-compatible with MMS's role. In MMS's view, however, essentially any regulatory exercise of authority by FERC on the OCS invades its turf. MMS's extreme position makes its argument the toughest to prove, and the evidence does not provide MMS much support.

In its 2003 *AquaEnergy* decision, FERC asserted jurisdiction over wave energy projects located on navigable waterways, on government lands, or in commerce clause waters and affecting interstate commerce.⁵² The agency pointed to the Federal Power Act⁵³ as granting the agency primary federal regulatory authority over electric-generation projects in rivers and the territorial sea.⁵⁴ Section 23(b)(1) of the FPA defines those facilities that are required to be licensed by the Commission:

It shall be unlawful for any person, State, or municipality, for the purpose of developing electric power, to construct, operate, or maintain any dam, water conduit, reservoir, power house, or other works incidental thereto across, along, or *in any of the navigable waters of the United States . . .* except under and in accordance with . . . a license granted pursuant to the [FPA].⁵⁵

52. *AquaEnergy Group, LTD.*, 102 FERC ¶ 61,242, 61,734-61,735 (2003) (order denying rehearing), available at <http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=9647239>.

53. 16 U.S.C. § 817 (2000).

54. *AquaEnergy Group*, 102 FERC at 61,734-735. FERC's regulatory authority under the FPA is comprehensive: Under the Federal Power Act, FERC has jurisdiction over the entire project works which includes both the generator and transmission lines. In contrast to MMS, FERC's jurisdiction over the transmission portion of the project applies whether the lines are located on state or federal lands. Also in contrast to MMS, FERC's authority preempts certain state and federal laws. For example, under § 10(j) of the FPA, FERC must give "due weight" to conditions for mitigation and enhancement proposed by state and federal fish and wildlife agencies. FERC retains ultimate authority, however, to decide whether any recommended conditions are "inconsistent with the purposes of" the FPA or other laws. Federal Power Act of 1920, § 10(j), 16 U.S.C. 803(j)(2) (2008); Minerals Mgmt. Serv., U.S. Dep't of Interior, Comments of the Ocean Renewable Energy Coalition on Mineral Management Service's Notice of Proposed Rulemaking on Alternative Energy Related Uses on the Outer Continental Shelf, RIN 1010-AD30 at 5 (Sept. 8, 2008), available at http://www.oceanrenewable.com/wp-content/uploads/2009/01/mmsnopr_comments9081.pdf.

55. 16 U.S.C. § 817.

The Commission construed the term *navigable water* to include waters off the U.S. coast.⁵⁶ Although the territorial sea over which the U.S. asserts jurisdiction traditionally extended 3 nautical miles into the ocean, FERC noted that Presidential Proclamation No. 5928 extended the territorial sea to 12 nautical miles⁵⁷ and thereby extended its own jurisdiction.⁵⁸ This interpretation enables FERC to claim jurisdiction over the portion of the OCS that extends out to 12 nautical miles. FERC also determined that the proposed wave technology project was nothing more than another type of hydroelectric project.⁵⁹ Specifically, the agency concluded that buoys that convert wave motion into pressurized water flow by means of two-stroke pumps are powerhouses pursuant to § 23(b)(1) of the FPA because they house a generator.⁶⁰

MMS objected to FERC's *AquaEnergy* decision and requested that FERC stop processing all permit applications for wave energy projects on the OCS.⁶¹ MMS argued that FERC's jurisdiction under the FPA has never extended beyond three nautical miles into the ocean.⁶² The Presidential Proclamation does not alter this fact, according to MMS, as it specifically states that its intent was not to extend or alter existing federal law or jurisdiction.

With respect to its own statutory authority over the disputed territory, MMS asserted that the Energy Policy Act of 2005 ("EPAct"),⁶³ which was enacted after FERC's *AquaEnergy* decision, makes it the exclusive regulator over renewable energy projects on the OCS. Section 388 of the EPAct amends § 8 of the Outer Continental Shelf Lands Act⁶⁴ by granting the DOI discretionary authority to issue leases, easements, or rights-of-way for activities on the OCS that produce or support production, transportation, or transmission of energy from sources other than oil or natural gas.⁶⁵ This section charges the DOI with establishing royalties or other payments for any lease, easement, or right-of-way granted under this section, and it directs the DOI to issue a final rule

56. Preliminary Permits for Wave, Current, and Instream New Technology Hydropower Projects, F.E.R.C., 118 FERC 61,112, 2007 WL 494959, *2-3 (2007) (notice of inquiry and interim statement of policy), *available at* <http://www.ferc.gov/whats-new/comm-meet/2007/021507/H-1.pdf>.

57. Proclamation No. 5928, 54 Fed. Reg. 777 (Dec. 27, 1988).

58. *AquaEnergy Group*, 102 FERC at 61,734-735.

59. *Id.*

60. *Id.*

61. Protest of the MMS, *supra* note 39, at 2.

62. *Id.*

63. Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594 (2005).

64. 43 U.S.C. § 1337 (2005).

65. It also grants the DOI discretionary authority to issue leases, easements, or rights-of-way for activities on the OCS that support exploration, development, production, or storage of oil or natural gas; support transportation of oil or natural gas, excluding shipping; produce or support production; or use, for energy-related or other authorized marine-related purposes, facilities used for OCS activities. 119 Stat. 594.

implementing this subsection within 270 days after the Act's enactment. The DOI delegated the authority to implement § 388 to MMS. MMS interprets § 388 "as also providing MMS authority to regulate or permit the activities that occur on those leases, easements or rights-of-way, if those activities are energy related."⁶⁶

In response to MMS, FERC pointed out that the language in § 388(a) supports the Commission's interpretation that the EAct reserves FERC jurisdiction under the FPA to license offshore energy hydropower projects.

Section 388 of the EAct does not explicitly oust jurisdiction by FERC as it states: "[n]othing in this subsection displaces, supersedes, limits, or modifies the jurisdiction, responsibility, or authority of any Federal or State agency under any other Federal law."⁶⁷ Certain sections of the EAct also indicate that Congress may have envisioned a cohesive effort to regulate wave and tidal projects on the OCS.⁶⁸ The Act tasks the Department of Energy with new obligations relative to renewable energy sources.⁶⁹ Title II of the Act provides that the Department of Energy will assess and generate detailed reports on renewable energy resources, and § 931 of the Act directs the Secretary of Energy to conduct research and development programs for ocean energy, including wave energy and hydrokinetic generation projects.⁷⁰

On the other hand, the timing of the EAct does help MMS's claims of exclusive jurisdiction. The EAct explicitly granted the Secretary of the DOI a new role with respect to renewable energy projects on the OCS, which was delegated to MMS, *after FERC asserted jurisdiction in AquaEnergy*. This Act could be considered Congressional rejection of FERC's assertion of jurisdiction over projects on the OCS. But it is more likely that Congress simply wanted to resolve concerns over Cape Wind's ability to site a large offshore wind project on the OCS without paying rental fees,⁷¹ and the Act had nothing to do with the jurisdictional issue. The timing thus provides weak evidence of Congress's intent and, at best, only suggests that Congress's intent to assign jurisdictional responsibility over the OCS is ambiguous.⁷²

66. Alternate Energy-Related Uses on the OCS, 70 Fed. Reg. 77,345 (Dec. 30, 2005) (to be codified at 30 C.F.R. pt. 285).

67. Energy Policy Act of 2005, § 388(a), Pub. L. No. 109-58, 119 Stat. 594 (2005).

68. *See id.* §§ 241-246.

69. *See id.* §§ 201-211.

70. *See generally id.* §§ 201-252, 931.

71. MMS-FERC Jurisdictional Smackdown!, Law Offices of Carolyn Elefant Offshore Renewable Energy Law Blog, http://carolynelefant1.typepad.com/renewables/offshore/2007/02/mmsferc_jurisdictional.html (Feb. 18, 2007, 15:18 EST) [hereinafter Jurisdictional Smackdown].

72. FERC subsequently asserted an additional source of authority under the FPA. In an October 16, 2008 order, FERC held that, notwithstanding its authority to license hydropower projects on navigable waters and "Commerce Clause waters," it also has jurisdiction over hydrokinetic projects on the OCS through its power to license hydropower projects on

Although MMS's claims for exclusive jurisdiction are hard to draw from the relevant provisions in the EPAct, FERC's claims stand on firmer ground. Classifying new projects that generate electricity from tides, ocean currents, and waves as hydroelectric power projects does not twist the meaning of the words. Hydroelectric projects produce electricity from hydropower, which is the force or energy of moving water. The new hydrokinetic projects generate electricity in this very manner; they produce power from moving waves, tides, and ocean currents. Even if FERC's interpretation could be found to stretch the meaning of hydropower, put in context, such an interpretation makes sense. Extracting energy from the ocean has only recently been thought plausible. When the FPA was enacted in 1920, likely no one foresaw that waves, tides, and ocean currents would ever provide a source of energy. The Act should provide for these unforeseen developments. If not, a major regulatory loophole would exist as no federal body could make any claims for primary regulatory authority over these projects outside the OCS. Not even MMS is willing to make that argument.

FERC's second assertion, that it has regulatory authority out to 12 nautical miles, is similarly not a radical twist of the meaning of *navigable waters*. Although the Supreme Court, in response to broad interpretations of the phrase *navigable waters* by various regulatory agencies, has in recent cases narrowed the range of plausible interpretations, at no point has it attempted to stretch the term beyond its traditional meaning.⁷³ The traditional definition of *navigable waters*, meaning "waters that are or were navigable in fact or that could reasonably be so made," easily includes the waters over which the Commission has extended its jurisdiction.⁷⁴

MMS has suggested, however, that a comparison of FERC's jurisdiction and that of other agencies, like the U.S. Army Corps of Engineers in particular, works against FERC's arguments.⁷⁵ The Corps of

"reservations of the United States." Pac. Gas & Elec., 125 FERC ¶ 61,045, P 42, 47 (2008). FERC concluded that the submerged lands of the OCS on which two proposed projects would be located are "lands and interests in lands owned by the United States" and, therefore, fall within the FPA's definition of "reservation." *Id.* Because FERC's other claims for jurisdictional authority appear to trump MMS's arguments, an analysis of this "reservation" argument is beyond the scope of this article.

73. See *Rapanos v. United States*, 547 U.S. 715 (2006) (holding that non-navigable, isolated intrastate waters that do not abut a navigable waterway are not navigable waters); see also *Solid Waste Agency of Cook County v. U.S. Army Corps of Engineers (SWANCC)*, 531 U.S. 159 (2001) (holding that wetlands are navigable waters if they have a continuous surface connection with an adjacent channel that contains a relatively permanent body of water and is connected to traditional navigable waters); *Id.* at 174-88 (Stevens, J., dissenting) (suggesting that a wetland is a navigable water if it has a substantial or significant nexus to waters of the United States, more than a mere hydrological connection but not necessarily a continuous surface connection).

74. *Rapanos*, 547 U.S. at 759.

75. Protest of the MMS, *supra* note 39, at 3-4.

Engineers lacked the power to issue permits on the OCS pursuant to § 10 of the Rivers and Harbors Act⁷⁶ until § 4(d) of the Outer Continental Shelf Lands Act⁷⁷ extended the Corps' authority beyond the three mile limit to the OCS.⁷⁸ The Commission has not received comparable statutory authorization to exceed the three mile limit in its licensing jurisdiction.

However, this argument fails to consider the differing definition of *navigable waters* in the FPA and as applied to the permitting process under the Rivers and Harbors Act. The FPA defines *navigable waters* as those “bodies of water over which Congress has jurisdiction under its authority to regulate commerce with foreign nations and among the several States, and which either in their natural or improved condition . . . are used or suitable for use for the transportation of persons or property in interstate commerce”⁷⁹ Nowhere in this definition does the Act limit FERC's jurisdiction to a particular distance from the shore. In contrast, the Corps' jurisdiction under § 10 was explicitly limited to “all ocean and coastal waters within a zone three geographic (nautical) miles seaward from the baseline (The Territorial Seas).”⁸⁰

B. Regulatory Approaches

Regardless of what Congress's original intent was in appointing regulatory responsibilities over the OCS, Congress holds the power to clarify who should receive primary regulatory jurisdiction. In identifying the superior regulatory agency for this role, Congress can and should take into account the fact that the differing regulatory approaches and other responsibilities of the agencies could affect the developmental success of the offshore renewable energy industry substantially.

The approaches of the two regulatory contenders differ with respect to public involvement, timeliness, and risk. FERC has taken more of an incubator approach, designed to provide conditions favorable to the progress of the infant industry. For instance, the Commission addressed the industry's immediate need to have a regulatory regime in place so that experimental projects can be put in the water. MMS, in contrast, has effected a deliberative approach that has enabled it to solicit more public involvement and to take a harder look at the potential risks of ocean power. Given the compelling short-term need of the industry to have a regulatory boost, FERC's regulatory approach is preferable to that of

76. 33 U.S.C. § 403 (1899).

77. 43 U.S.C. § 1333(e) (1953).

78. 33 C.F.R. § 320.2(b) (2006).

79. 16 U.S.C. § 796(8) (2005).

80. 33 C.F.R. § 329.12 (1986).

MMS at this point. Nonetheless, FERC can still learn from MMS's approach so that, in the long term, the industry remains viable.

1. Speed

FERC was quick to recognize and address a short-term interest critical to the development of a new industry that MMS has not; to stay competitive with developments abroad, hydrokinetic projects need to be implemented as soon as technologically feasible, something developers can only do once a regulatory regime is in place.

The Commission wasted no time in providing interested hydrokinetic developers with a process to apply for permits and licenses. As of April 30, 2009, FERC had issued 193 permits and 56 were pending.⁸¹

To further speed the regulatory process, in November 2007 the Commission commenced a pilot program under which it could issue conditioned licenses for wave, tidal, and ocean current projects.⁸² The pilot program responded to the industry's desire to shorten the time it takes to obtain regulatory approvals. A milestone for the development of power from ocean sources occurred on December 20, 2007, when FERC issued the first license under the program to AquaEnergy's successor, Finavera Renewables Ocean Energy, Ltd.⁸³ FERC conditioned a five-year license upon Finavera obtaining all necessary federal permits before beginning construction.⁸⁴ The license also authorized FERC to shut down or remove the project if the agency finds that operations unacceptably affect the surrounding environment.⁸⁵

MMS, in contrast, has been criticized for taking too long to issue any actual regulations.⁸⁶ It did not issue any regulations for hydrokinetic projects on the OCS until April 22, 2009,⁸⁷ approximately four years after it claimed jurisdiction over these projects.

81. FERC: Issued and Valid Issued and Valid Hydrokinetic Projects Preliminary Permits, <http://www.ferc.gov/industries/hydropower/indus-act/hydrokinetics/permits-issued.asp> (last visited Apr. 30, 2009); FERC: Pending Hydrokinetic Projects Preliminary Permits, <http://www.ferc.gov/industries/hydropower/indus-act/hydrokinetics/permits-pending.asp> (last visited Apr. 30, 2009).

82. See Press Release, FERC, FERC Hydrokinetic Energy Project Policy Statement Allows Conditioned Licensing (Nov. 30, 2007), available at <http://www.ferc.gov/news/news-releases/2007/2007-4/11-30-07.asp> [hereinafter Policy Statement]. The Commission did not commence a rulemaking process in generating this program.

83. See Press Release, FERC, FERC Issues First License for Hydrokinetic Energy Project, (Dec. 20, 2007), available at <http://www.ferc.gov/news/news-releases/2007/2007-4/12-20-07-H-1.asp>.

84. *Id.*

85. *Id.*

86. PROGRAMMATIC EIS, *supra* note 13, at 1-13.

87. Press Release, The NewsRoom, President Obama, Secretary Salazar Announce Framework for Renewable Energy Development on the U.S. Outer Continental Shelf, (Apr. 22, 2009), available at <http://www.mms.gov/ooc/press/2009/press0422.htm>.

2. Public Involvement

Although FERC was quick to appreciate the short-term needs of the industry, it was slower than MMS to appreciate the value of public input:

Offshore Alternative Energy is a new and highly anticipated frontier for the nation, as well as a new regulatory program for the Department of the Interior and the Minerals Management Service This is an important step in fostering a new industry offshore that will diversify our Nation's power supplies and open up new avenues to supply renewable energy to areas that may otherwise have limited options onshore.⁸⁸

As this passage reveals, MMS has acknowledged that regulating renewable energy projects on the OCS is a new responsibility for it and will require a totally new regulatory approach.⁸⁹ This has enabled the agency to take a step back, identify the relevant interests of the public, and deliberate on how to establish a regulatory regime. FERC, whose jurisdictional argument is based on the idea that ocean power projects are just another form of hydroelectric project, instead initially bypassed its opportunities to obtain public input by squeezing the new technology under the umbrella of an existing regulatory scheme. Considerable problems have arisen due to FERC's failure to engage the public in its decision-making processes.

After deciding *AquaEnergy*, the Commission commenced issuing permits for companies to study ways to capture the energy from ocean waves, tides, and currents for proposed project sites within 12 nautical miles of the shore.⁹⁰ This procedure was essentially the same permitting process that FERC uses for dam projects.⁹¹ Companies that sought permits had three years to make their projects work to obtain rights for a license. Then, on April 14, 2005, FERC concluded that the short-term *experimental* testing of new hydropower technology that meets certain criteria would not require a Commission license.⁹²

The Commission's program generated much interest from potential developers but was heavily criticized as presenting barriers to the

88. Press Release, U.S. Dep't of the Interior, The Interior Department Releases Alternative Energy Environmental Impact Statement and Announces Offshore Alternative Energy Initiative (Nov. 5, 2007), available at <http://www.mms.gov/ooc/press/2007/pressdoi1105.htm> (quoting Secretary of MMS Dick Kempthorne).

89. PROGRAMMATIC EIS, *supra* note 13, at Appendix B-4.

90. FERC maintains a website that describes its permitting and licensing procedures for hydroelectric generation from ocean waves, tides, and currents and from free-flowing rivers; lists applicants for such permits and licenses; and posts links to related conferences and issuances. FERC: Hydropower-Hydrokinetic Projects, <http://www.ferc.gov/industries/hydropower/industry/hydrokinetics.asp#skipnavsub> (last visited Apr. 12, 2009).

91. *Tidal Energy Turf War* (New Hampshire public radio broadcast Jul. 16, 2007), available at <http://www.nhpr.org/node/13473>.

92. Verdant Power LLC, 111 FERC ¶ 61,024, *order on reh'g* 112 FERC ¶ 61,143 (2005).

development and commercialization of new ocean wave, current, and tidal energy technologies. Not only is FERC's pre-existing permitting process for hydroelectric projects notoriously long and expensive, but it creates significant risks for developers of a new technology:

Under existing FERC process, a developer who applies for a three year preliminary permit for exclusive rights to investigate a site must be ready to file a license application at the end of the permit term or risk a competitor filing for a competing application. If the competitor is a municipality, the Federal Power Act requires that preference be given to the municipality. Because a three-year term can often be inadequate for developing a license application, which in the traditional hydropower arena can take more than five years and millions of dollars to complete, a private developer's investment in new technology site investigations may be at significant risk of being lost to a competitor at the end of three years.⁹³

MMS has also pointed out that FERC's preliminary permits tie up large areas of potential development based on the first applicant rather than the best applicant.⁹⁴ Trey Taylor, the President of Verdant Power (the only company producing tidal power in the U.S.) has voiced a similar complaint, "There were a lot of people that came out of the wood work and started throwing permits around like a land grab on those sites with a hope that a technology that they're working on might work."⁹⁵

Rob Sinq-Mars, an electrical engineer and founder of freeflowenergy.com, a website devoted to renewable technology, identified how FERC's permitting process enabled this land grabbing to occur: "The applications are marked by a profound lack of specificity. People aren't saying what they're going to put in the water; they aren't saying if they have any experience; they aren't saying they have any demonstration projects to conduct any of the studies."⁹⁶

Perhaps FERC could have preempted these problems if it had sought comments from interested parties *before* initiating its permitting process. This is precisely what MMS did. In endeavoring to establish a new cradle-to-grave regulatory process,⁹⁷ on December 30, 2005, MMS published an advanced notice of proposed rulemaking seeking public comment on various regulatory issues for alternative energy projects on the OCS, other than oil or gas, and for alternative uses of OCS facilities, like using oil and gas platforms for aquaculture.⁹⁸ MMS then gave concerned parties

93. ANDERSON ET AL., *supra* note 7, at 2.

94. LANE, *supra* note 22, at CRS-21.

95. *Tidal Energy Turf War*, *supra* note 91.

96. *Id.*

97. LANE, *supra* note 22, at CRS-21.

98. PROGRAMMATIC EIS, *supra* note 13, at 1-13.

more opportunities for participation when it issued a Notice of Intent to prepare a programmatic EIS in May 2006 and when it held scoping meetings in spring of 2006. The public expressed considerable interest in MMS's new regulatory regime; almost 200 individuals, organizations, and government agencies provided comments on the draft programmatic EIS.⁹⁹ MMS issued a draft for comment in March 2007 and held public hearings in spring of 2007.

MMS released the final programmatic EIS on November 5, 2007,¹⁰⁰ and announced an interim policy for authorization of the installation of offshore data collection and technology testing facilities in federal waters.¹⁰¹ Under the proposed action identified in its programmatic EIS, MMS plans to use the public's input it has gained thus far to guide it in establishing a framework for issuing leases, easements, and rights-of-way for alternative energy and alternate use activities on the OCS. It will then engage the public yet again when it conducts another NEPA analysis for its rulemaking. Through its comprehensive efforts to engage the public in developing a new regulatory regime, MMS can recognize the problems inherent in FERC's regulatory scheme. Unlike MMS, the Commission lost the opportunity to gain important information that may have helped it prevent its regulatory blunders.

Nonetheless, FERC's hesitation to involve public input did enable it to concentrate its efforts on the most pressing issue at the time, the short-term demands of the industry. Now that a regulatory regime is established, the agency has shifted gears. It recognized the importance of gathering public comments, and, in December of 2006, the Commission held a technical conference on hydrokinetics to gather input from state and federal agencies, tribes, developers, and stakeholders.¹⁰² In response to the participants' comments, on February 15, 2007, FERC posted a Notice of Inquiry soliciting comments on how it should treat future applications for preliminary permits to study hydropower projects utilizing new wave, current, and instream technologies and how it should

99. *Id.* at 1-4 and 1-6.

100. The final programmatic EIS analyzes the potential environmental impacts that could result from the development of alternative energy and alternate use projects on the OCS in the reasonably foreseeable future, defined in the document as five to seven years, and identifies potential mitigation measures. The EIS's proposed action was to establish the Alternative Energy and Alternate Use Program on the OCS through rulemaking. It did not present any actual regulations.

101. Press Release, U.S. Dep't of the Interior, The Interior Department Releases Alternative Energy Environmental Impact Statement and Announces Offshore Alternative Energy Initiative (Nov. 5, 2007), available at http://www.mms.gov/ooc/press/2007/press_doi1105.htm; PROGRAMMATIC EIS, *supra* note 13, at 3-18.

102. Press Release, FERC, FERC Hydrokinetic Energy Project Policy Statement Allows Conditioned Licensing (Nov. 30, 2007), available at <http://www.ferc.gov/news/news-releases/2007/2007-4/11-30-07.pdf>.

oversee any permits.¹⁰³ The issuance outlined an interim policy under which FERC would issue preliminary permits for wave, tidal, and in-stream generation projects.¹⁰⁴ To prevent the recognized problem of site-banking and to promote competition, FERC decided to administer these permits under a *stricter scrutiny* policy, meaning the agency would issue preliminary permits with limited project boundaries, would carefully scrutinize the semi-annual reports that the agency requires all permit holders to file, and would consider canceling permits where sufficient progress was not shown.¹⁰⁵ FERC's actions demonstrate that the agency will no longer rigidly conform its permitting and licensing requirements for conventional hydroelectric projects, like dams, to hydrokinetic technologies.

3. Risk

Closely-tied to FERC's weak efforts to involve the public in the early stages of its regulatory determinations, the agency has expended little effort in identifying the potential risks of the new technologies. The Commission has issued permits and licenses without pausing to assess the overarching safety and environmental implications of these new technologies. FERC's failure to prepare any form of EIS for its new regulations, such as its program for issuing conditioned licenses, raises questions about its compliance with the requirements of the National Environmental Policy Act ("NEPA").¹⁰⁶ Because hydrokinetic projects are still small-scale and not developed to the point of commercial viability, the issue poses no urgent threats at present, but detrimental consequences could result if FERC does not change its tune.

Despite being renewable energy sources with emission-free operation, hydrokinetic technologies could generate a number of risks, including safety and environmental hazards that are wholly different than those associated with conventional hydropower generation. For instance, converting wave power into electricity could reduce wave height and thereby alter the coastal or marine environment.¹⁰⁷ Surfers, for this reason, constitute a proactive opponent of wave technologies. In

103. Notice of Inquiry, *supra* note 10.

104. *Id.* at 1.

105. *Id.* at 4.

106. NEPA requires that all federal agencies include an EIS "in every recommendation or report on proposals for . . . major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(c) (2000). Given that FERC's program of issuing permits and licenses for hydrokinetic programs may significantly affect the environment, it is alarming that FERC has not made any effort to prepare an EIS. Unfortunately, a full analysis of this issue is beyond the scope of this article.

107. ELEC. POWER RESEARCH INST., OFFSHORE WAVE POWER IN THE US: ENVIRONMENTAL ISSUES 4-7 (2004), http://oceanenergy.epri.com/attachments/wave/reports/007_Wave_Envr_Issues_Rpt.pdf [hereinafter OFFSHORE WAVE POWER].

addition, above-surface facilities may artificially provide resting space for seals and sea lions and nesting for sea birds, and below-surface facilities may create artificial reefs for aquatic organisms below the surface.¹⁰⁸ Altering or removing these facilities could adversely impact the animals that may come to depend on them. Fish and marine mammals can also be injured by devices with open-spinning turbines and those using hydraulic fluid, which may leak and release pollutants.¹⁰⁹ Although perhaps less serious, the visual appearance of some devices may raise aesthetic concerns and some designs may produce noise that affects humans or marine life.¹¹⁰ Finally, habitats and structures on the seabed and sediment deposition may be affected by construction and decommissioning of facilities.¹¹¹

These risks reveal that long-term tampering with the ocean is not a trivial or minor undertaking. Moreover, unlike traditional methods of generating power, where the effects are relatively well-understood, hydrokinetic power technologies are still in the experimental stage. As they have never been established in U.S. waters on a commercial basis, many of their ultimate effects on the environment are yet to be discovered.¹¹² The uncertainty of the consequences of harnessing power from the ocean, coupled with the potentially massive ramifications, provides a compelling reason for deliberation before projects enter the large-scale construction phase.

Through the preparation of its programmatic EIS, MMS has engaged in an open process of identifying the risks stemming from the technologies that are new to marine waters. As MMS has pointed out: “Initiating a programmatic EIS at this stage allows the public to engage in an early dialogue with the MMS concerning important environmental issues.”¹¹³ In completing this document, MMS was able to identify initial policies and best management practices (“BMPs”) that it can consider as mitigation measures to alleviate risks of harm if it implements a regulatory program. As the program matures, MMS intends to modify the BMPs and potentially develop new mitigation measures. It may also prepare other environmental assessments that are more focused on specific regions, areas, or technologies.

Although FERC has not been nearly as proactive as MMS in its NEPA obligations, FERC has not ignored the statute completely. The agency requires the preparation of an EIS before a particular project may go forward. This ameliorates some concerns about harm. And if FERC had

108. *Id.* at 4.

109. *Id.* at 16.

110. *Id.* at 18.

111. *Id.* at 23.

112. PROGRAMMATIC EIS, *supra* note 13, at Appendix B-4.

113. *Id.* at 1-2.

prepared an EIS in a rulemaking process for its pilot program, the program would likely not be in effect for another year or so, stalling the progress of what is anticipated to be an environmentally-superior alternative to conventional fossil fuels. Moreover, MMS has been criticized by many as preparing a programmatic EIS too broad to be of any actual value.¹¹⁴ While the Commission's failure to perform any overall EIS for its regulations over the hydrokinetics industry is troubling, it still has ample time to consider the broad implications of developing hydrokinetic projects on the OCS as, to-date, no hydrokinetic projects on the OCS have received authority to begin construction.

C. Other Responsibilities

Beyond the agency's regulatory approaches, another factor—the interrelationship between regulating hydrokinetic technologies on the OCS and the regulator's other responsibilities—affects the determination of whether MMS or FERC would be the better regulator. The strongest argument for bestowing FERC with jurisdiction over the OCS relates to its other responsibilities. Unlike MMS, FERC already has jurisdiction over wave, ocean current, and tidal power projects up to the boundary of the OCS; so, for purposes of consistency, it makes sense to give it primary regulatory authority over all such projects regardless of which side of the OCS line they fall on. If Congress gave MMS the primary regulatory authority over these renewable energy projects, the OCS boundary could become an arbitrary line where regulatory authority over the same technologies transfers, potentially subjecting projects that straddle the line to two regulatory regimes and producing artificial incentives for developers to site their projects on a particular side to take advantage of the least burdensome regulatory scheme.

Because FERC will be establishing regulations for hydrokinetic technologies regardless of how Congress allocates jurisdiction over the OCS, FERC could achieve administrative economies of scale by serving as the primary authority responsible for the OCS as well. The environmental, aesthetic, and public use concerns of locating a project at 2.9 nautical miles do not greatly differ from those at 3.1 nautical miles offshore. Hence, it is duplicative and inherently wasteful for two separate agencies to expend public resources investigating all the same issues and conducting rulemaking proceedings independently of each other for regulation of essentially the same activities. As FERC's regulations for ocean-related technologies will already be necessitated by its jurisdiction over the ocean up to approximately three nautical miles from the shore, it makes sense for FERC to be the primary regulator of these activities no

114. *Id.* at 1-1.

matter which side of the OCS line they fall on. In addition, the Commission's established relationships with state and local regulators have enabled it to develop interwoven, complimentary regulations that reduce the risks and regulatory hurdles for prospective developers.¹¹⁵

Beyond the inefficiency of having two regulatory bodies generating regulations for essentially the same activities, such a scheme is damaging for an up-and-coming industry. Projects that straddle the OCS boundary, such as ocean current technology projects that must be located relatively large distances from the shore, would need to comply with two sets of regulations, thus raising their costs and increasing the time necessary to achieve all regulatory approvals. Protracted regulatory processes pose an acute risk for emerging technologies that could become obsolete before they ever receive the necessary approvals for development.

That a developer would choose a suboptimal location for an emerging technology in order to self-select its regulator is more than a possibility; it has already been attempted. On April 29, 2002, AquaEnergy Group filed a declaration of its intent to locate an ocean wave energy project about 1.9 nautical miles offshore of Waatch Point in Clallam County, Washington.¹¹⁶ For various reasons, the developer thought it would be exempt from regulation by FERC.¹¹⁷ When it realized that FERC intended to assert jurisdiction over the project, on November 1, 2002, AquaEnergy informed the agency of its decision to relocate the project to the OCS, 3.17 nautical miles from the coastline.¹¹⁸ The developer believed such relocation would enable it to evade the Commission's permitting and licensing procedures.¹¹⁹ FERC concluded otherwise, finding that the OCS boundary did not limit its authority.¹²⁰ This in turn motivated the developer to restore the proposed project location to its original planned distance from the shore.¹²¹

The *AquaEnergy* controversy predated the EPAct's grant of authority over renewable energy projects on the OCS, so it should not be seen as a sign that developers prefer MMS jurisdiction over that of FERC. However, it reveals how developers will attempt to opt out of regulation by a particular entity by relocating a project over one nautical mile from its optimal location. Recent commentators have suggested that the

115. Telephone Interview with Carolyn Elefant, Founder, The Law Offices of Carolyn Elefant (Sept. 16, 2008).

116. AquaEnergy Group, LTD., 102 FERC ¶ 61,242, 61,733 (2003), available at <http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=9647239>.

117. *Id.*

118. *Id.* at 61,734.

119. *Id.*

120. *Id.* at 61,734-735.

121. Policy Statement, *supra* note 82.

current decisions to site hydrokinetic projects are based on similar efforts to evade jurisdiction by a particular regulator:

MMS' authority stops at the three mile limit, so for projects located less than three miles from shore (or ten miles in the case of Texas and the Gulf Coast of Florida), FERC will have power to license wave and tidal projects. And right now, that's where most wave and tidal developers are proposing projects - both to keep transmission costs down, but also to eliminate the possibility of dual jurisdiction.¹²²

Given that the costs of power generation will eventually be passed onto consumers, the siting of projects should be affected by engineering constraints, not developers' regulatory preferences. Furthermore, developers of new ocean-powered technologies already have plenty of engineering constraints relating to water depth and distance from shore affecting the siting of their projects.¹²³

AquaEnergy also teaches another value of consistent regulation of hydrokinetic energy projects. Although many near-shore projects would not require any regulation by MMS if this agency obtained primary federal regulatory authority over alternative energy projects on the OCS, the converse is not necessarily true. Independent of its jurisdiction over the OCS, FERC may be able to assert jurisdiction over many, if not most, OCS projects because the transmission lines and other structures associated with a given project will likely need some means of accessing the shore and an electric grid. In the *AquaEnergy* conflict, FERC clarified that the sea and land components of the project, which would be located on federal land in the Olympic Coastal National Marine Sanctuary, formed an independent basis for requiring a FERC license.¹²⁴

Although MMS cannot provide the same consistency as FERC, it does have a few potential arguments to make. MMS has more experience regulating the OCS than FERC, has authority over the use of retired oil and gas platforms, and has received authority from the EPAct to regulate certain types of offshore renewable energy technologies like wind farms over which the Commission has no authority. A close examination of these responsibilities, however, reveals they cannot outweigh the benefits of FERC regulation.

The first argument MMS can make is that it is better versed in regulating the OCS than FERC. While FERC only recently asserted jurisdiction over the OCS in its 2003 *AquaEnergy* decision, MMS has

122. Jurisdictional Smackdown, *supra* note 71.

123. PROGRAMMATIC EIS, *supra* note 13, at 3-1 to 3-2. In general, transmission system installation, maintenance, and repair costs tend to increase the farther a project is from shore. Large projects with higher electricity production can justify the higher costs associated with siting farther from the shoreline.

124. *AquaEnergy Group*, 102 FERC at 61,735.

developed institutional expertise in this area from its 27 years¹²⁵ of experience managing the mineral and other energy resources on the OCS in an environmentally sound and safe manner.¹²⁶ Regulating the OCS is no minor undertaking—oil and natural gas comprise the principal mineral resources there and provide for approximately 23% of domestic natural gas production and 30% of domestic oil production.¹²⁷ MMS's success as a regulator is evidenced by its annual contributions of approximately \$8 billion to the Federal Treasury from sources such as permits and taxes.¹²⁸

MMS's experience potentially enables it to better understand and mitigate the effects of OCS activities on the marine environment than FERC. Over the years, MMS has devoted significant funding to environmental studies on the OCS. For instance, MMS's Environmental Studies Program has been tasked with gathering and synthesizing relevant environmental, social, and economic science information.¹²⁹ MMS's programmatic EIS indicates how its knowledge about the OCS ocean environment informs its judgment as a regulator. The programmatic EIS pointed out that “[r]esearch has established that sound also acts as a stressor to marine animals. Observed effects include changes in responsiveness to other stimuli, masking, temporary threshold suppression, and injury, as well as the general effects on communication, echolocation, spawning, and shoaling behavior.”¹³⁰ After identifying these sonar hazards of OCS projects on marine mammals, MMS was able to suggest a mitigation option that regulators, such as itself, “can establish effective noise controls as stipulations to leases or permits required to be secured for such activities.”¹³¹ Although FERC would likely be able to identify such relevant issues, most likely there would be a steeper learning curve for the Commission than for MMS.

Use of the ocean also generates user conflicts that would not be triggered by FERC's regulation of conventional hydropower projects. Whereas hydropower has generally operated in locations where property ownership is relatively clear and has pre-defined means of resolving conflicts, the ocean is a common property resource with a long history of multiple use.¹³² For instance, commercial fishermen may have traditionally fished at a proposed location for an ocean-powered project. These fishermen will likely want to play an active role in regulatory proceedings. Other interested parties may include those involved in

125. U.S. Dep't of the Interior, DOI History (Jan. 6, 2008), <http://www.doi.gov/history.html> (last visited Apr. 14, 2009).

126. PROGRAMMATIC EIS, *supra* note 13, at 1-14.

127. *Id.* at Appendix B-4 p. 3.

128. *Id.* at 1-15.

129. *Id.* at 6.

130. *Id.* at 4-44.

131. *Id.* at 4-46.

132. ANDERSON ET AL. *supra* note 7, at 2.

industries like shipping and boating or in recreational activities like fishing and surfing.¹³³

Another added value that MMS could bring as the primary regulator of alternative energy projects on the OCS is that it could more easily allow for retired oil and gas platforms to be used by new renewable energy projects.¹³⁴ Retired platforms could likely be used by some of these projects as it would cut down the costs of construction. Instead of having to work with two regulators, if MMS has primary regulatory jurisdiction, developers could simply obtain the necessary authorizations for the projects and for usage of retired platforms from MMS, which would likely further reduce the time and costs of developing new technologies.

Finally, MMS will be responsible for offshore wind projects, over which FERC has no jurisdiction. From regulating wind power, the most developed offshore, ocean-related technology, MMS has gained knowledge that will inform its judgment as a regulator of hydrokinetic projects. The Cape Wind project in particular has given MMS the opportunity to see the barriers that may obstruct other technologies. Despite the public's support for offshore wind power in the abstract and the prediction that the project will provide Massachusetts with over 10% of its demand for electricity,¹³⁵ community members developed what one could call a NIMO, "Not in My Ocean," attitude with respect to the Cape Wind project. Local environmental organizations, politicians, business interests, property owners, and fishing interests have staunchly opposed the project and delayed its progress.¹³⁶

Unfortunately for MMS, none of its arguments for institutional expertise are entirely unique to it. Whereas MMS may have some experience managing oil and natural gas projects on the OCS and other technologies (offshore wind power projects) that may involve issues similar to those implicated by wave, tidal, and current power, FERC has surged ahead regulating the very technologies at issue—hydrokinetic technologies. No experience is quite as valuable as direct experience. Through trial and error, FERC has gained an in-depth appreciation for the needs of the hydrokinetic industry. In addition, although the property boundaries are more clear on lakes and rivers than on the ocean, FERC's extensive regulation of hydropower projects has given it great familiarity with multiple-use concerns. Building a dam, for instance, will likely affect the interests of downstream fishermen, recreational rafters,

133. OFFSHORE WAVE POWER, *supra* note 107, at 4. See also EPRI, *Overview: EPRI Ocean Energy Program* (Sept. 2006), <http://www.epri.com/oceanenergy/oceanenergy.html>.

134. PROGRAMMATIC EIS, *supra* note 13, at 1.

135. Firestone et al., *supra* note 15, at 76.

136. For further discussion of the Cape Wind project, see Brit T. Brown and Benjamin A. Escobar, *Wind Power: Generating Electricity and Lawsuits*, 28 ENERGY L.J. 489 (2007).

environmental groups, and many others. With respect to MMS's control over retired facilities, at this point they are primarily of interest only to offshore wind developments over which FERC has no control. Thus, MMS has little chance of defeating the above-described benefits of using one hydrokinetics regulator for regulation from zero to 12 nautical miles offshore.

IV. CONCLUSION

Until the jurisdictional dispute between MMS and FERC is resolved permanently, few benefit. The much needed research, development, and use of hydrokinetic power as a clean, renewable energy source will not be realized unless bewildered developers know whose rules to follow. An analysis of the Energy Policy Act of 2005 and the Federal Power Act, coupled with the persistence of the administrative debate, suggests that Congress's intent to allocate authority over the OCS is unclear and needs clarification. The legislative branch now has more information before it than ever before to decide who could best promote the development of a robust hydrokinetic industry.

FERC should be designated the primary regulator of hydrokinetic projects on the OCS. Although this agency initially blundered in its efforts to regulate hydrokinetic projects by not engaging the public in its decision-making processes, it has altered its course in effecting its most recent regulations. Furthermore, it has addressed a key need of the developing industry, the need for speed, by putting a regulatory regime in place right after its *AquaEnergy* decision and by issuing conditioned licenses. More significantly, because there is little dispute that the Commission has jurisdiction over hydrokinetic projects within 3 nautical miles of the shore, allocating lead regulatory authority to the agency out to 12 nautical miles creates administrative efficiency, reduces the regulatory burdens on developers, and discourages developers from locating projects on sub-optimal sites.

Nonetheless, the controversy highlights the fact that FERC still has room to improve as a regulator. Its fast-paced approach may soon generate new problems; the Commission has not yet performed any EIS in association with its development of regulations over hydrokinetic projects. With its permitting and licensing regulations, the harmful discouragement of the development of the budding industry was reversible through subsequent regulatory programs. When the hydrokinetic industry becomes more established, the environment may suffer permanent and substantial damage unless FERC takes a broader, long-term look at these risks.

POSTSCRIPT

As this Article goes to print, several late-breaking developments deserve attention and brief analysis as they interrupt the four-year regulatory stalemate over renewable projects on the OCS. In January 2009, the Obama Administration came to power, bringing with it a campaign promise of *change*. Change came swiftly to the FERC-MMS jurisdictional dispute. Shortly after his inauguration, President Obama appointed John Wellinghoff as Chairman of FERC and Kenneth Salazar as the United States Secretary of the Interior. On April 9, 2009, these two new administrative heads signed into effect an MOU attempting to resolve jurisdiction over renewable energy projects on the OCS.¹³⁷ Then, on April 22, MMS tipped its hat to Earth Day by issuing regulations that finalize its regulatory framework for renewable energy development on the OCS.¹³⁸

The MOU constitutes a concrete step towards ending the inter-agency dispute. The MOU gives MMS exclusive jurisdiction over leases, easements, and rights-of-way for hydrokinetic projects on the OCS.¹³⁹ The MOU provides FERC with exclusive jurisdiction to grant licenses for hydrokinetic projects on the OCS after the developers of these projects obtain a lease from MMS.¹⁴⁰ This system carves out a significant role for MMS while enabling FERC to utilize its institutional expertise with hydropower to address the short-term needs of the emerging industry.

While the MOU is a move in the right direction, regulatory uncertainty may continue to hinder the development of hydrokinetic projects on the OCS. First of all, guidance documents to clarify MMS's framework for alternative energy projects need to be issued before developers will likely be ready to pursue commercial projects on the OCS. In addition, the MOU seems destined to push developers to locate their projects within three nautical miles of the coastline because projects in these waters will be exclusively within FERC's jurisdiction and can thus avoid the cost and time burdens of complying with MMS's regulations. Once developers exhibit a clear preference for state waters, MMS and FERC may be forced to renegotiate their system of shared responsibility. Finally, an MOU is essentially a formal gentleman's agreement; it is not legally enforceable. Without a legislative solution, it is yet to be seen whether a gentleman's agreement can provide a long-term solution to the

137. MOU, *supra* note 50, at 3.

138. *President Obama, Secretary Salazar Announce Framework for Renewable Energy Development on the U.S. Outer Continental Shelf*, THE NEWSROOM, Apr. 22, 2009, <http://www.mms.gov/ooc/press/2009/press0422.htm>.

139. MOU, *supra* note 50, at 1.

140. *Id.*

jurisdictional brawl. A new era may be dawning for hydrokinetics energy, but a little more regulatory certainty would still be a helpful change.