BEFORE THE UNITED STATES OF AMERICA
DEPARTMENT OF INTERIOR
MINERALS MANAGEMENT SERVICE

Advanced Notice of Proposed Rulemaking)		
Alternative Energy-Related Uses	**)**	**RIN 101-AD30**
On the Outer Continental Shelf	**)**	

COMMENTS OF THE OCEAN RENEWABLE ENERGY COALITION (OREC) ON ALTERNATIVE ENERGY RELATED USES ON THE OUTER CONTINENTAL SHELF

The United States, always a land of opportunity, now stands poised on the shore of an ocean of opportunity. Section 388 of the Energy Policy Act of 2005, which authorizes the Minerals Management Service (MMS) to lease the Outer Continent Shelf for development of alternate energy, opens a vast opportunity for our nation to explore and harness our oceans' power for clean, sustainable energy; to advance research and development of innovative technologies with applications not just in our oceans, but on coastal lands, in rivers and overseas; and to develop a robust, domestic ocean renewables industry that will generate jobs and economic growth, and reduce our dependence on foreign oil. The question of whether we can construct a regulatory craft that is stable, straight-forward and nimble enough to allow us to set sail on this sea of opportunity – or whether we become ensnared in turf wars between agencies, paralyzed by uncertainty regarding project impacts or drowned by costs of royalty payments, surety bonds and permitting - lies at the heart of this MMS rulemaking on alternative energy on OCS.

Accordingly, the Ocean Renewable Energy Coalition (OREC) hereby files these comments in response to MMS' Advance Notice of Proposed Rulemaking (ANPR) on Alternate

Energy Related Uses on the Outer Continental Shelf. OREC is a national trade association dedicated to promoting the advancement and commercialization of energy generation from clean, renewable ocean resources, including offshore winds, ocean waves, tidal and river currents, marine biomass, and ocean thermal gradients. OREC's members include developers of various forms of ocean renewable technologies, financial entities with an interest in potentially funding ocean technologies and prominent environmental and regulatory consulting firms. OREC is joined in these comments by the Community Environmental Council, a California-based non-profit environmental organization.

We organize our comments as follows. Part I summarizes our guiding principles for this proceeding. Part II offers background and context for this proceeding. Part II.A explains that a comprehensive, robust and streamlined offshore renewable energy program is vital to our nation's goal of achieving energy independence. Part II.B gives an overview on the current status of ocean energy technologies in the United States and overseas, many of which are presently in, or on the cusp of, either demonstration or commercial development. Part II.C identifies some of the other regulatory systems, specifically the Federal Energy Regulatory Commission (FERC) or NOAA's regulation of OTEC and aquaculture, that may overlap with MMS jurisdiction over alternate energy development. Part II.C also references the President's Executive Order on Streamlining Energy Projects and the recent Task Force Recommendations on improving the NEPA process. Part III of the Comments contains our responses to the 36 multi-part questions presented in the ANPR.

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APPENDICES

I. Guiding Principles and Executive Summary

In these comments, OREC has provided detailed responses to most of MMS' requests. Our responses reflect the following Guiding Principles that are integral to the development of a successful offshore alternate energy program.

1. Streamlining Permitting and Resolving Jurisdictional Conflicts: The MMS regulatory framework must provide a streamlined, coordinated process for approval of leases and minimize duplication of effort between federal and state agencies. To achieve these goals, OREC recommends (a) an expedited demonstration project program (*see* Part IV: "Access to OCS Lands"), preparation of a programmatic EIS for offshore areas, with developers preparing site specific EAs, *id*. and efficient processing of applications for pilot and commercial projects consistent with recent federal initiatives on streamlining energy projects and expediting the NEPA process. (Part IV: Operations). With regard to jurisdictional conflicts, OREC proposes creation of a Joint Office of Renewables Office, use of MOUs to resolve overlapping jurisdiction (Part IV: Consultation and Coordination) and cooperative efforts between MMS and the states on coastal zone management.

2. Balance Between Comprehensive, Orderly Development And Individual Initiatives:

OREC supports individual efforts to develop offshore wind and wave energy resources. Data gained from these experiences will help inform a licensing program going forward. At the same time, to fully stimulate optimal development of alternate energy on the OCS, we must move towards a program of comprehensive development, characterized by an initial government resource assessment (with input from the public), followed by programmatic environmental impact statements. A comprehensive development system must be flexible enough to accommodate exceptions for private innovation (for example, a developer would always retain the ability to nominate a site outside of

specified area, unless precluded by environmental considerations), but in the long run, serves as the best way to expedite development of OCS renewable energy resources. Part A, Access to Public Lands.

Proportionality and Practicality Regulatory approvals must be proportionate to the type of project proposed. Where impacts are uncertain, approvals can provide for post-approval monitoring and mitigation in lieu of onerous and extensive pre-approval studies and date collection. We have proposed a tiered, review structure, with minimal review for Demonstration Projects and site specific studies for projects proposed within an area covered by a Programmatic EIS. Part A, Access to Public Lands.

Exemptions For Demonstrations A successful regulatory regime must include a clearly defined program for pilot technologies and demonstration plants. The pilot/demonstration program would allow for less stringent permitting requirements, a streamlined, approval process, categorical exclusions from NEPA in some instances and exemptions from royalty payments. A pilot program should also encourage development of technology hub facilities and hybrid proposals that enable developers to share costs. Part IV, Access to Public Lands and Operations.

Strike a Balance Between Competition and Technological Innovation Section 388 requires MMS to issue leases on a competitive basis. But while competition produces optimal results in a mature industry where parties compete for uniform benefits (e.g., FCC rights), competition, if not implemented properly, can bias development in favor of first movers that may not possess optimal technology for all sites. A competitive system must emerge where leases are issued on the basis of a broad range of factors, including adaptability to a particular environment, cost and potential benefits. Part IV, Access to Public Lands.

Broad View of A Project's Non-Monetized Public Benefits: A successful regulatory framework must recognize that ocean renewable development is an "uncharted country" where one must use a different currency. Thus, a regulatory program must take new approaches to valuation (such as quantification of externalities or differentiating between the cost of extractive versus non extractive resources) for purposes of determining royalties, appropriate surety amounts and other lease costs. ***See*** Part IV: Royalties.

Flexibility and Forward Looking: To paraphrase Heraclitus, we never step into the same ocean twice. Even as attempt to put in place regulations for projects that are in near stage development, technology continues to change and move forward. A successful regulatory program must be designed with sufficient flexibility to accommodate technologies that have not yet been conceived. Thus, in several instances, such as development of a demonstration program or devising royalties, we have asked MMS to continue to evaluate these programs as the offshore renewable industry matures.

Differentiation Between Near Term and Long Term Goals: While in the long run, a successful regulatory program must take a comprehensive approach to management of OCS lands, development of this type of program takes time and will be informed and improved by our early experiences in permitting. Thus, even as MMS embarks on development of a comprehensive, multi use program, it must put in place interim regulations to allow projects that are ready now to move ahead. In addition, MMS should immediately begin to entertain *ad hoc* proposals for demonstration projects even before it formulates a comprehensive program. See Part IV: Coordination and Consultation (discussing interim regulations and grandfathering).

Sufficient Funding and Support: MMS must commit to secure sufficient funding and support to ensure the success of its offshore renewable OCS leasing program. Funding must support staff to

review and process lease applications, resource assessment and mapping of the OCS and to support data collection and studies needed for development of resources that also benefit the public at large.

II. Overview Offshore Renewables Energy and Technology

This Part places this proceeding in context, describing (1) its significance to our nation's current energy goals; (2) relationship to existing offshore renewable development and (3) relationship to other regulations already in place that govern development on the OCS.

A. The Significance of the MMS Rule to Nation's Energy Goals

The concept of looking to the ocean for a source of renewable energy is not a new idea. As discussed in the next section, offshore renewable technology has been under development for the past thirty years both in the United States and abroad. But today, more than ever, our nation is acutely aware that energy independence is vital to our economy. The President, in his January 2006 State of the Union address described that:

> Keeping America competitive requires affordable energy. And here we have a serious problem: America is addicted to oil, which is often imported from unstable parts of the world. The best way to break this addiction is through technology. Since 2001, we have spent nearly $10 billion to develop cleaner, cheaper, and more reliable alternative energy sources -- and we are on the threshold of incredible advances. So tonight, I announce the Advanced Energy Initiative -- a 22-percent increase in clean-energy research -- at the Department of Energy, to push for breakthroughs in two vital areas. To change how we power our homes and offices, we will invest more in zero-emission coal-fired plants, revolutionary solar and wind technologies, and clean, safe nuclear energy.

Moreover, investment in alternate renewables is not likely to be limited to government funding. Private investors are also now recognizing the significance of, and opportunities for, investment in development of renewable energy sources, and are seeking out projects to fund.[1]

Offshore renewable energy will contribute to our nation's energy strategy. The potential magnitude for offshore energy is substantial: the 2005 EPRI Report[2] found that

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[1] *See Energy Angels to Fuel Industry*, Deidre Gregg, MSNBC (2/26/06) online at http://msnbc.msn.com/id/11586941/.

[2] *See* Appendix, listing link to 2005 EPRI Report, available online.

the available (but not extractable) wave energy potential of the United States is 2100 terawatt-hours per year, with 1250 TWh/yr off Alaska's coast,300 off Hawaii, 440 off the Pacific and 110 off the Atlantic between New Jersey and Maine. Given that the entire United States energy consumption is roughly 3700 TWh/year, just extracting a conservative 20 percent of the wave energy resource could satisfy ten percent of our energy needs. And that figure does not even account for offshore wind or ocean tidal or current resources.

Our nation needs a regulatory regime for the OCS that will allow us to develop our vast offshore renewable resources. And we need a regulatory regime that will support offshore renewable development, attract private investment and complement our nation's priorities of energy security. This MMS proceeding represents the first step.

B. Ocean Energy[3]

1. Historic Development of Ocean Energy in The United States

Like the ocean waves themselves, interest in ocean energy development within the United States has ebbed and flowed over the past thirty years. During the mid-1970's, oil embargos and inflationary conditions lead Congress to enact the Ocean Thermal Energy Conversion Act (OTEC), 42 U.S.C. § 9101 *et. seq.* to promote development of OTEC projects in the hopes of reducing dependence on foreign oil so as to avert further energy crises. As part of the OTEC program, NOAA developed an

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[3] In our Appendix, we include links to the EPRI January 2005 Wave Energy Assessment Report, a report on Tidal Assessment. Also attached are links to OREC's Ocean Energy Round-up For 2005 published in Renewable Energy Access Report, highlighting significant developments for the ocean energy industry for 2005 and a recent article from *Business Week* on ocean energy - or "lunar power." The California Energy Commission also studied wave energy potential of Californi in a recent study, *California Small Hydropower and Ocean Wave Energy Resources,*"2005, online at http://www.energy.ca.gov/2005publications/CEC-500-2005-074/CEC-500-2005-074.PDF.

extensive "one stop shopping" licensing regime,[4] with a $250,000 application fee, to process applications for OTEC licenses. Technology lagged behind public policy, however, and no OTEC projects ever materialized on the grand scale originally conceived in the OTEC Act, though at least one has been developed as a prototype.[5] Consequently, NOAA eventually withdrew its OTEC licensing regulations, stating "when commercial interest in OTEC projects occurs, NOAA will issue a proposed rule appropriate to the regulatory needs at that time."[6]

The 1990's brought an onslaught of activity in deregulation of the utility industry which, at least for a time, produced bargain basement prices for electricity which ocean technologies (or many other renewables for that matter) simply could not match. As a result, interest in commercialization of ocean technology stalled in the United States even as it flourished abroad.

2. Overview of Ocean Energy

a. Different Technologies

Ocean renewable energy refers to a range of technologies that utilize the oceans to generate electricity. Many ocean technologies are also adaptable to non-impoundment uses in other water bodies such as lakes or rivers. These technologies can be separated into five main categories:

> **Wave Energy Converters:** These systems extract the power of ocean waves and convert it into electricity. Typically, these systems use either a water column or some type of surface or just-below-surface buoy to capture the wave power. In addition to oceans, some lakes may offer sufficient wave activity to support wave energy converter technology.

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[4] *See* 15 C.F.R. Part 981.

[5] Pacific International Center for High Technology Research operates the world's only open cycle OTEC plant. *See* http://www.pichtr.org/Ocean_Thermal_Energy_Conversion.htm (last visited February 15, 2006).

[6] 61 *Federal Register* 2969-2971 (1996).

Tidal/Current: These systems capture the energy of ocean currents and tides below the wave surface and convert them into electricity. Typically, these systems rely on underwater turbines, either horizontal or vertical, which rotate in either the ocean current or changing tide (either one way or bi-directionally), almost like an underwater windmill. These technologies can be sized or adapted for ocean or for use in lakes or non-impounded river sites.

Ocean Thermal Energy Technology (OTEC): OTEC generates electricity through the temperature differential in warmer surface water and colder deep water. OTEC technology has been successfully demonstrated at a long operating demonstration plant in Hawaii.

Offshore Wind: Conventional wind turbines mounted in offshore environments. As offshore technology gains more experience, developers are now looking towards moving offshore wind further offshore into deeper waters.

Marine Biomass: Harvesting marine algae for use in energy generation by producing gaseous or liquid fuel. Research and development in this relatively new area—a few years of research--has not yielded commercial methods for commercializing this energy source. However, in establishing a long-term regulatory regime, it would be prudent to anticipate its commercial use within the next decade, or so.

Marine Solar Power: Photovoltaic energy is the conversion of sunlight into electricity through a photovoltaic (PVs) cell, commonly called a solar cell. With oceans making up 70 percent of the earth's surface, offshore solar installations are viewed as a non-land alternative to the solar installations on land. Currently, solar energy is used on offshore platforms and to operate remotely located equipment at sea. Possible installations on retired oil rigs may be a prudent and sound use for such facilities. Such an installation on a retired rig could include an array of wave, tidal, solar, biomass and wind technologies.

In addition, just as retired oil rigs are used as artificial reefs under Rigs-to-Reef program, retired oil platforms can also be used as potential sites for offshore renewables. The Ocean Renewable Energy Coalition fully endorses the idea of re-using retired oil rigs as hosts for ocean renewable technologies thereby creating a prudent alternative to their decommissioning.

b. Characteristics of Offshore Energy Projects

How much space will offshore wind and wave projects occupy and how will these projects attach to the seabed? Generalizations are difficult given the variety among technology. Moreover, for some newer technologies, additional studies are necessary to determine the amount of spacing needed between units to optimize operation or to identify optimal mooring systems.

i. Offshore Wind

For offshore wind (a more mature industry), the National Renewable Energy Laboratory (NREL) uses 5 MW per square kilometer of installed capacity as a rule of thumb for the amount of wind that can be installed in a given offshore area, while the UK uses 12 MW per square kilometer in its Report on the Future of Offshore. The Cape Wind Project will average 7.5 MW per square kilometer,[7] while the 160 MW Horns Rev Project (comprised of 80 two MW turbines over 20 square kilometers) averages 8 MW per square kilometer.

Technology for attaching wind turbines to the sea floor vary. As this Danish paper describes[8], the present offshore wind parks in Denmark use "gravity foundations," which are placed on reinforced concrete foundations built onshore and floated out to sea where they are filled with gravel and sand, much like traditional bridge building technology. A newer technology offers a similar method, but using a cylindrical steel tube placed on a flat steel base on the bottom of the sea. Such a foundation is considerably lighter, allowing barges to transport and install many foundations rapidly, using the same fairly lightweight crane used for the erection of the turbines. These foundations are filled with olivine, a very heavy mineral, which gives the foundation sufficient weight to withstand waves and ice pressure.

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[7] Cape Wind Website, www.capewind.org, FAQ Section.

[8] http://www.worldenergy.org/wec geis/publications/default/tech_papers/17th_congress/3_2_01.asp OFFSHORE WIND ENERGY: FULL SPEED AHEAD KROHN, Soren Danish Wind Turbine Manufacturers Association Copenhagen, Denmark

Other foundation technologies include monopole foundations, (which Cape Wind will use)[9], effectively extending the turbine tower under water, and drilling it into the sea bed. For larger water depths tripod foundations, three legged steel platforms similar to offshore oil rigs are being studied, as well as the possibility of floating platforms which could minimize impacts to the seabed.

ii. Wave Energy Projects

It is more difficult to determine the average megawatts of installed capacity per square kilometer for offshore wave or current projects primarily because the industry is still gaining experience. The 2005 EPRI report described that four arrays of 53 Pelamis units would occupy 20 square kilometers, similar to the size of the Horns Rev project, *supra*. OREC expects that as developers site demonstration projects, they will learn more about how these units operate in connection with each other and will gain a better sense of the space required for siting.

3. Present State of Wave/Tidal/Current Ocean Technology

a. Global

As the United States took advantage of cheap electricity resulting from deregulation in the 1990s, European countries and others took an early lead in development of ocean energy projects. In 2000, a Scottish company, Wavegen, installed the LIMPET (Land Installed Marine Power Energy Transformer) in Islay, Scotland, a 500 kW, shore based wave energy project that sells power to the grid. A year later, a similar, 600 kW project was developed on Island of Pico, in Portugal's Azores.

Other projects under development include the Pelamis, a Scottish wave energy converter that fed power into the grid in Scotland since August 2004 – and recently announced plans to construct an initial 2.25 Mw plant off the coast of Portugal. In October 2005, an Australian company, Energetic,

[9] Cape Wind FAQs, website.

anchored a 500 kW wave energy device in Port Kimble, Australia which has produced power and desalinized water on board.[10]

Tidal technology is also progressing, both for tidal applications near shore and also on the OCS. A recent EPRI study on tidal and in-stream energy conversion (TISEC) devices included companies from both the U.S. and abroad. The report identified eight companies "that could be technologically ready for pilot plant detailed design and permitting in 2006 and beginning of construction in 2007."[11] Of the eight companies three are from the United Kingdom, one from Sweden, and four from the U.S. These companies include Marine Current Turbines which has already deployed pilot tidal projects in the Norway and the United Kingdom. Hammerfest Strøm AS, a Norwegian company, developed the first grid connected marine turbine rated 300 kW, installed on September 17, 2003 in the Kval Sound. The Marine Current Turbines United Kingdon project is also 300 kW and is located approximately one mile offshore from Lynmouth.

b. United States

Over the past five years, ocean energy development has advanced in the United States as well. Proposed projects include:

- New Jersey based Ocean Power Technologies has operated a test wave energy buoy off the coast of Hawaii for the U.S. Navy and plans to interconnect to the grid by the end of the year.

[10] *See* Energetech Website, http://www.energetech.com.au/ (last visited Feb. 15, 2006).

[11] See EPRI Ocean Energy Website, Survey and Characterization, Tidal In Stream Energy Conversion Devices, Page 8 http://www.epri.com/oceanenergy/attachments/streamenergy/reports/004TISECDeviceReportFinal111005.pdf (last visited Feb. 20, 2006).

● Washington state based Aqua Energy has proposed a 1 MW pilot project for the Makah Bay off the coast of Washington state in the Olympia Coast Marine Sanctuary.[12] The project is currently in the midst of what is now verging on a three-year permitting process at the Federal Energy Regulatory Commission (FERC).

●New York based Verdant Power is undergoing licensing at FERC and intends to deploy six units of a tidal/current project located in the East River and supply power to customers on Roosevelt Island imminently, once all regulatory clearances have been obtained.

●Australian based Energetech has formed a subsidiary in Rhode Island which has received funding from the Massachusetts Trust Collaborative and has planned a 750 kW project for Port Judith Rhode Island. Permitting has not yet commenced.

B. Offshore Wind

Offshore wind projects are also advancing both in the United States and overseas. In November 2004, the Army Corps of Engineers issued a draft Environmental Impact Statement (EIS) for the Cape Wind Associates' proposed 130 turbine, 420 MW Cape Wind Project, to be located on Horseshoe Shoal in Nantucket Sound. And in April 2005, FPL Energy filed an application for a Section 10 permit for the Long Island Power Authority (LIPA) offshore wind farm, roughly three miles off the coast of Long Island.

The table below describes the present state of offshore wind development in Europe.

Location	**Country**	**Online**	**MW**	**No**	**Rating**
Vindeby	Denmark	1991	4.95	11	Bonus 450kW
Lely (Ijsselmeer)	Holland	1994	2.0	4	NedWind 500kW
Tunø Knob	Denmark	1995	5.0	10	Vestas 500kW
Dronten (Ijsselmeer)	Holland	1996	11.4	19	Nordtank 600kW
Gotland (Bockstigen)	Sweden	1997	2.5	5	Wind World 500kW

[12] Under Section 388 of the Energy Policy Act, MMS' authority to issue leases for the OCS does not apply in marine sanctuaries.

Blyth Offshore	UK	2000	3.8	2	Vestas 2MW
Middelgrunden, Copenh	Denmark	2001	40	20	Bonus 2MW
Uttgrunden, Kalmar Sou	Sweden	2001	10.5	7	GE Wind 1.5MW
Yttre Stengrund	Sweden	2001	10	5	NEG Micon NM72
Horns Rev	Denmark	2002	160	80	Vestas 2MW
Frederikshaven	Denmark	2003	10.6	4	2 Vestas 3MW,1 Bonus 2.3MW and 1 Nordex 2.3MW
Samsø	Denmark	2003	23	10	Bonus 2.3 MW
North Hoyle	UK	2003	60	30	Vestas 2MW
Nysted	Denmark	2004	158	72	Bonus 2.3MW
Arklow Bank	Ireland	2004	25.2	7	GE 3.6 MW
Scroby Sands	UK	2004	60	30	Vestas 2 MW
Totals			**587**	**316**	

*Source of Table: British Wind Energy Association, http://www.bwea.com/offshore/worldwide.html (last visited February 15, 2006).

C. Existing Regulatory Regimes

Section 388 of the Energy Policy Act provides that:

> Nothing in this subsection displaces, supersedes, limits or modifies the jurisdiction, responsibility or authority of any Federal or State agency under any other Federal law.

Below, we discuss some of the other federal regimes that co-exist or potentially overlap with MMS' regulation.[13]

1. Section 10, Rivers and Harbors Act, 33 U.S.C. § 401

Section 10 of the Rivers and Harbors Act, as extended by Section 4(f) of the Outer Continental Shelf Lands Act authorizes the United States Army Corps of Engineers has authority to issue a Section 10 permit for structures located on the OCS. Prior to the enactment of Section 388, the Corps held default lead agency status for offshore wind projects such as Cape Wind and the FPL/LIPA Project. Offshore wind projects will still require a Section 10 permit to ensure that projects on the OCS do not interfere with navigability; however, MMS has since assumed lead agency jurisdiction over these projects.

2. Federal Power Act, 16 U.S.C. § 791 et. seq.

2. Federal Power Act, 16 U.S.C. § 791 et. seq.

The Federal Energy Regulatory Commission (FERC) has authority under Section 23 of the Federal Power Act (FPA) to require licenses for projects located either on or across (a) navigable waterways, (b) commerce clause waters, with project interconnection into a grid or (c) on federal lands. Though up until a few years ago, FERC traditionally licensed hydroelectric projects located on rivers or other freshwater bodies of water capable of developing a power generating head (*i.e.*, projects that produce power from falling water), in 2003, FERC asserted

[13] This section identifies only those statutes that conferred lead agency status on other federal agencies prior to the enactment of Section 388. We do not attempt to identify the numerous federal and state laws that will apply to offshore renewable development.

jurisdiction over licensing of hydroelectric projects located in ocean waters, as far as twelve miles out.[14]

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 Section 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. Section 10(j), FPA, 16 U.S.C. 803(j)(2).

Other conditions proposed by agencies are deemed "mandatory" by FERC. For example, under Section 4(e) of the FPA a federal land management agency may propose to FERC conditions it deems necessary to protect the federal land reservation; and under Section 18 a federal fishery agency may propose to FERC "fishway" protection measures. In each such instance FERC generally accepts the agency proposal verbatim, but even under these circumstances, FERC retains authority to confirm that the "mandatory" condition is consistent with the FPA or other laws.

The scope of FERC's authority under the Federal Power Act raises the potential for jurisdictional and regulatory conflict with MMS. These issues must be clarified to ensure that OCS renewable projects are not subject to conflicting or duplicative regulatory requirements. As we discuss in further detail Part IV *infra*, MMS and FERC must cooperate to resolve these issues.

[14] *See Aqua Energy Group*, 102 FERC ¶ 61,242 (2003).

3. NOAA Jurisdiction

As mentioned earlier, the OTEC Act empowers NOAA to issue licenses for ocean thermal energy projects. Section 388 specifically provides that MMS does not have jurisdiction over projects authorized by the OTEC Act. Aquaculture represents another potential, non-oil and gas use for the OCS. Currently, aquaculture on the OCS requires a Section 10 permit (as extended by the OCSLA) from the Corps. But Congress has considered legislative proposals, the most recent, S.1195 (June 8, 2005) to authorize NOAA to issues permits for offshore aquaculture located in the United States Exclusive Economic Zone (EEZ), which extends from 3 to 200 nautical miles offshore. The ANPR states that:

> Although [Section 388] authorizes MMS to permit alternate uses of existing OCS facilities, MMS is not seeking the authority over activities such as aquaculture, but only the decision to allow platforms to be converted to such uses, if the appropriate agency approves the underlying activity.

Even if MMS declines to jurisdiction over aquaculture, MMS must ensure that development of aquaculture resources are coordinated with alternative energy uses.

4. Existing Oil and Gas Use

The Department of Interior has jurisdiction over oil and gas leasing on the Outer Continental Shelf pursuant to the Outer Continental Shelf Lands Act (OCSLA), 43 U.S.C. § 1331-1356. The 1978 OCSLA amendments created a process for OCS development that comprises four phases: a five-year lease program, lease sale, exploration and development and production. In some instances, an EA or EIS is prepared for each of these four phases, though some categorical exclusions exist for exploration and production.[15]

[15] Outer Continental Shelf Lands Act, 43 USC 1334 *et. seq.*

The MMS oil and gas four phase process, with a separate EA at some or all of the steps differs from the traditional power plant siting model implemented by state agencies or by the FERC for licensing hydroelectric projects. Typically, an applicant for a power plant license must obtain all of the permits needed to construct and operate the project before the license issues. Once the license issues, the developer can proceed without further environmental review.[16]

5. Federal Actions to Streamline Energy Projects

Recognizing that overlapping and cumbersome regulatory processes can thwart development of energy projects, the federal government has taken measures to promote more expeditious development, while at the same time ensuring adequate environmental protection. In May 2001, President Bush issued Executive Order 13212: Actions to Expedite Energy Related Projects.[17] The order directs agencies to "expedite review of permits or take other actions necessary" to accelerate completion of energy related projects.

More recently, on December 21, 2005, a bipartisan task force on Improving the National Environmental Policy Act issued its "Initial Findings and Draft Recommendations" for improving and updating NEPA.[18] The Committee's recommendations include (1) addressing delays in the process, (2) enhancing public participation and stakeholder involvement, (3) clarifying alternatives analysis under NEPA, (4) better federal agency coordination, (5) resolving studies issues and (6) imposing an 19 month limit on completion of an EIS and 9 month limit on completion of an EA. As MMS implements its

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[16] *See* 30 C.F.R. § 250.33, 43 U.S.C. § 1351.

[17] Executive Order 13212, 66 *Fed. Reg.* 28357 (May 22, 2001).

[18] *Task Force on Improving the National Environmental Policy Act and Task Force on Updating the National Environmental Policy Act Committee on Resources United States House of Representatives Initial Findings and Draft Recommendations* (December 21, 2005), http://resourcescommittee.house.gov/nepataskforce/report/nepareport_finaldraft.pdf.

offshore renewable program, it must comply with the President's Executive Order and incorporate the Task Force's emerging changes to the NEPA process.

IV. Responses to Multi-Part Questions

A. ACCESS TO OCS LANDS

Below, we summarize OREC's proposal for access to OCS lands. This proposal, modeled in large part on the successful UK Offshore Development program, provides for development of commercial renewable energy sources the OCS through a programmatic approach while allowing demonstration projects to proceed on an *ad hoc* basis, with less stringent permitting requirements.

Access to OCS lands should be provided differently for a commercially mature technology (such as offshore wind is today), than for a pre-commercial technology, (such as offshore wave and ocean current are today). A similar dual-track system that has two different programs for these two levels of technology development has been implemented in the United Kingdom (UK), which now has more than five years' experience in providing access for ocean renewable energy resource assessment and project development in its territorial waters.

For commercially mature ocean renewable energy technologies, MMS should conduct systematic multi-year leasing programs, as it does now for offshore oil and gas exploration and development, but with fundamental differences. Among the most important of these fundamental differences is duration of the leasing program (3 years rather than 5 years), geographic scope of the leasing program (confined to strategic development regions rather than encompassing the entire OCS), nature of the lease solicitation (request for proposal rather than auction), and criteria for awarding leases to competing bids that overlap geographically (best proposed lease development program rather than highest-dollar bid).

Commercial ocean renewable energy leasing programs should be implemented on a three-year schedule, during which MMS conducts the following steps:

(A) Identifies a limited number of strategic development regions, each covering a geographic area on the order of a few thousand square kilometers, which have the strategic combination of an adequate energy density, appropriate water depth, and sufficient proximity to a coastal load center with growing energy demand and a robust onshore utility grid. Such identification is possible with existing meteorological, oceanographic, and utility data that are in the public domain.

(B) Prepares an Environmental Assessment (EA) for each strategic region, which identifies excluded locations (where project development is not acceptable) and problematic locations (where an economically sized project is likely to encounter permitting difficulties). For acceptable, non-problematic locations in each strategic region, the EA will specify the appropriate scale of project development (maximum size of project, minimum spacing between projects, maximum density of conversion devices within project) and "qualifying corridors" for routing submarine power cables through state waters and onto state lands. These specifications will be based on studies of existing data, including public data from demonstration projects and commercial projects previously developed in the same region (preferably) or elsewhere (if such regional projects do not exist), consultation with state and local governments and other ocean users in each region (such as the military and commercial fishing industry), and comments solicited from the general public and potentially affected stakeholders.

(C) Solicits bids from industry, by which potential project developers are able to obtain long-term leases that will secure their exclusive access for resource assessment and project development, subject to specific terms, conditions, and milestones that are described under **General Issue D**, below. We recommend that MMS solicit bids for leases only in locations specified by the EA to be acceptable and non-problematical within each strategic area.

(D) Accepts bids from industry, for leases to be described by one or more contiguous, 5,000-acre rectangular blocks as now identified in existing MMS maps of the OCS within the U.S. Exclusive Economic Zone. For the first leasing program under this proposed scheme, we recommend that a given project developer or development team be allowed to submit only one bid per strategic region, and that the potential installed generation capacity per bid not exceed 500 megawatts. This provides sufficient economy of scale for a project to be commercially viable, encourages a wide variety of project development approaches as appropriate at this early stage of industry development within each region, and focuses industry and government resources in a way that maximizes probability of individual project success. All bids should identify submarine cable routing alternatives to their onshore grid interconnection points, and any bid that fails to route such cable alternatives through a "qualifying corridor" specified in the EA should be rejected.

(E) Qualifies bids based on well-publicized criteria. Such criteria should include, but not necessarily be limited to:

(1) Adequacy of the proposed project development plan, including proposed approach to resource assessment and project siting;

(2) Adequacy of the plan for obtaining required permits;

(3) Financial capability to carry out items (1) and (2) within three years;

(4) Commercial viability of the proposed project insofar as can be ascertained by public-domain meteorological, oceanographic, and utility data; and

(5) Experience and management capabilities of the developers.

(F) Awards "Option to Lease" for each qualified bid, subject to terms, conditions, and milestones as previously noted and described under **General Issue D**, below. Where two or more bids overlap geographically, MMS will inform the competing bidders and facilitate negotiations whereby competing

bidders may agree to one of three alternatives: (1) cooperatively develop a single lease; (2) revise their bids such that they no longer overlap; or (3) remain in competition for the overlapping blocks. For those overlapping blocks that remain in competition, MMS will rank the competing bids according to the criteria listed in (E), above, and award the competed blocks to the highest-ranked proposal.

(G) Executes long-term lease at end of three-year program with each developer that has successfully met the terms, conditions, and milestones previously noted and described under **General Issue D**, below. The "Option to Lease" should contain a mechanism whereby failure to fully meet these terms, conditions, and milestones results in a lease of smaller size (reflecting the extent to which these terms, conditions, and milestones have been met), or in the absence of sufficient progress to yield a commercially viable project, the "Option to Lease" should be withdrawn and the associated blocks again be offered in the next three-year leasing program.

In parallel to the above systematic 3-year leasing programs for commercially mature technologies, MMS should conduct a continuous, rolling solicitation program for proposals to deploy demonstration projects for technologies that are emerging from industry and academic laboratories and are ready for ocean testing. For this program, the choice of site for each demonstration project will be made by the developer and does not have to be – and in most cases is unlikely to be – in a strategic region identified under the 3-year leasing program for commercial projects.

The demonstration program should be designed to grant site access as quickly as possible while still protecting the offshore marine environment. It is anticipated that there will be two types of demonstration projects proposed under this program: (1) single-technology projects, either connected to the onshore utility grid or operating without connection, having duration of a few months to a few years; and (2) multi-technology "test-bed" or "hub" projects of much longer duration, where the developer bears the cost of grid interconnection in accordance with FERC rules on generation interconnection and obtaining permits, offering the developed site on a fee basis to developers who

want to occupy a "berth" on the site for a period of months to years so that they can test the interaction of the device with the onshore utility grid and address utility concerns about interconnection of a device with no operating history. These two types of projects would obtain OCS access through different legal instruments but otherwise would be subject to similar rules and managed under the same continuous, rolling solicitation.

For short-duration, single-technology projects not connected to the onshore utility grid, the developer would nominate a site and submit a project development proposal. MMS would qualify the proposal using criteria similar to those listed above under item (E) and award a short-term easement as the appropriate legal instrument (see **General Issue B**, below). Under the proposed development plan, the developer would be responsible for obtaining all required permits and providing financial guarantee for decommissioning and restoring the site to its original condition.

For longer-duration "test-bed" or " technology hub" projects connected to the onshore utility grid, the developer would nominate a site and submit a project development proposal. MMS would qualify the proposal using criteria similar to those listed above under item (E). In this case, MMS would award a long-term right of way to qualified projects as the appropriate legal instrument (see **General Issue B**, below). Under the proposed development plan, the developer would be responsible for obtaining all required permits and providing financial guarantee for decommissioning and restoring the site to its original condition.

The number of different permits required and length of time to obtain them will be significantly greater for test-bed or hub projects not only because of their grid interconnection (with associated submarine power cable routing and shore crossing) and longer term of operation (perhaps spanning decades), but also because they would host a variety of different short-term test projects throughout the operational life of the test-bed, with an associated variety of potential environmental impacts.

It is anticipated that developers of short-term test projects hosted by the test bed would not need to obtain any permits, provided they operate according to parameters spelled out in the test-bed's permits. MMS' operational inspections of test-bed and hub projects should confirm this on a regular basis.

A natural question arises concerning what criteria MMS might use to distinguish a large demonstration project from a small commercial project. We offer the following criteria, taken from UK guidance on this subject (Citation: Department of Trade and Industry. "Guidance on Consenting Arrangements in England and Wales for a Demonstration Phase for Wave and Tidal Stream Energy Devices (Marine Renewables)" November 2005):

A demonstration (or pre-commercial) project is defined as being a project whose primary purpose is to test, prove and validate new or innovative uses of technology or combinations thereof.

> 1. The demonstration phase will be a pre-commercial development phase having a number of objectives including:
>
> a. Development and validation of engineering and technical aspects of devices and demonstration of their commercial potential.
>
> b. Development of understanding of the environmental impacts of devices and their potential impacts on other uses or users of the sea, through monitoring and research.
>
> c. Establishment of a stakeholder engagement framework to facilitate subsequent implementation of the commercial phase. d. Evolution and refinement of the consents process and adaptation as appropriate to new technologies and their impacts.

Demonstration projects may or may not be connected to the grid, and if connected to the grid may sell power to the interconnected utility as a means of recovering cost. The key distinguishing feature between a demonstration project and a commercial project will be a test plan with specific measurement objectives, and the duration of the proposed easement will be restricted to a period appropriate to meet these test objectives.

A rolling, continuous solicitation is appropriate at this stage, since it enables developers to proceed as soon as they are ready, thereby promoting rapid development of new technologies. We

anticipate that MMS will not be overwhelmed by demonstration proposals, since only a small number of projects, probably well under five per year, will be both sufficiently well advanced in engineering readiness to move from the laboratory into the ocean, and sufficiently promising to have attracted the management and financial resources to undertake an ocean demonstration.

We encourage MMS not to specify an upper size limit, since this could vary from a few tens of kilowatts to a few megawatts per device, depending on the technology, and it is not possible to foresee what device sizes might evolve as new technologies are developed. It is likewise not possible to foresee the number of devices that might be required in a demonstration array to test device interactions with one another and multiple-device effects on the environment. Regardless of the size and number of devices, such projects will necessarily be modest in scale, given their relatively high costs (with large engineering and measurement instrumentation overheads) and limited capital availability to finance non-commercial projects. As already noted, the key distinguishing criterion will be a clearly specified and well bounded test plan, which MMS should request under the rolling solicitation for demonstration projects.

In conclusion, we see the development of new ocean renewable energy technologies occurring in two stages. In the pre-commercial stage, technology developers will propose their own sites under a continuous, rolling solicitation for installation of demonstration projects to validate technology performance, increase investor confidence, and learn about localized environmental affects. Such pre-commercial projects are essential to support the development of appropriate rules and regulations governing future commercial projects. Indeed, it is learning from demonstrations that will enable the effective introduction of future rounds of competitive bidding for OCS access, once the technology in question is ready for commercial deployment.

The demonstration phase is focused on the industry that designs, develops, and manufactures renewable ocean energy technologies (as distinct from the industry that develops commercial power projects). The aim is to encourage and assist its evolution toward become an industry that is capable of offering commercially viable electricity generation devices to the project developer market. In order for this to be

achieved it is essential for developers to test and prove their devices (individually or in small arrays) at locations they think best represent their target design environments.

We believe that it is important to preserve the integrity of the demonstration process so that companies can site bona fide demonstration projects expeditiously and with minimal cost. To that end, MMS must design the demonstration program to prevent its abuse by companies that seek to use it as an "end run" around MMS' broader, programmatic approach or (more likely), to take advantage of an expedited permit process. Resource agencies and the public will lose confidence in the demonstration process and may throw up barriers to expedited siting if they perceive a demonstration program as a sham to bypass permitting.

MMS can prevent abuse of the demonstration process by setting strict limits on the ability of a demonstration project to automatically or routinely convert into a permanent, commercial project. At the same time, MMS should allow an opportunity for developers to convert successful demonstration projects into commercial projects, for example, by nominating the site for inclusion in the MMS program. Or, MMS could permit a demonstration-to-commercial conversion, subject to MMS approval, where the developer (a) shows successful operation results, (b) establishes that the demonstration project makes best use of the resource where it is sited (for example, MMS would not want to allow a marginal wave energy project to operate commercially and exclusively in an optimal wind region, since this would waste the wind resource) and (c) complies with any applicable permit requirements needed for a permanent, commercial site. We believe that these safeguards preserve the integrity of the demonstration process and offer sufficient accommodation to the developer of a successful demonstration project without undermining the orderly, comprehensive and programmatic development of the OCS.

The commercial development phase begins when utility and independent power producers have sufficient confidence in new technologies to incorporate them into commercial generation project

plans. We believe that with the inception of a rule, MMS can immediately begin to solicit input from developers and start the process of identifying strategic areas for deployment of these new technologies.

General Issue A: Provide access for resource and site assessment.

For commercial projects, developers should secure rights for detailed resource assessment and project siting through obtaining an "Agreement for OCS Authorization"[19] awarded on a competitive basis through a systematic leasing program, as described in the above summary.

In order to motivate project developers to conduct site assessments to the highest standards, it is necessary to provide developers who invest in such assessments with an exclusive option on future development of that site, subject to achieving the required regulatory permits. Thus a developer committing funds to site assessment work takes risks and expects a fair return on this expenditure, but it should not necessarily have an exclusive right to use that resource in perpetuity. Moreover, even if a developer that is granted the right to investigate a particular area is considered to have a prior claim to exploit any usable resource, a developer that fails to explore an area properly, or to turn good prospects into subsequent projects, should lose its rights. Therefore, the "Option to Lease" should contain a mechanism under which, if the proposed program of site survey work is not met, the exclusive area can be reduced to reflect the extent to which the survey program was achieved, or failing any substantial progress, the option should be able to be withdrawn.

For demonstration projects, a lengthy period of measurement would not be typically needed prior to siting. Reconnaissance-level meteorological and oceanographic data that now exist in the public domain are adequate for a developer to select a demonstration project site.

[19] As discussed in General Issue B, we recommend use of easements or ROWs as appropriate conveyance instruments. For ease of use, however, we use the term "lease authorization" to mean issuance of whatever authorization MMS identifies to convey interests on OCS for renewable projects.

General Issue B: Issue the appropriate instrument (e.g., lease, easement, right of way).

MMS has several available options for conveying access rights on the OCS. We describe these possibilities in Appendix I, which should be consulted for precedent and practice regarding the issuance of leases, easements, and rights of way. Probably the most appropriate access conveyance tool for marine renewables is the one that EPACT Section 388 does not empower MMS to issue: a license or permit authorization that carries with it necessary and exclusive use rights to lands within the project boundary.

The terms "lease" and "leasing" are used in our summary of this program area, since that is the terminology with which MMS is familiar for OCS development by extractive oil and gas industries. Based on our findings in Appendix I, however, we believe that the most appropriate instrument for MMS to use for our recommended commercial leasing program (in the absence of permitting authority) is a right of way (ROW), as traditionally used for utility facilities like transmission lines, as well as to for siting wind energy projects on BLM lands.

For the continuous, rolling demonstration program, MMS should consider issuing an easement for short-term projects, reserving the ROW instrument for longer-term "test-bed" or "technology hub" projects.

Easements also would be an appropriate instrument for accommodating conflicting uses. For example, a farther-offshore project developer might seek a submarine power cable routing easement across a ROW held by a nearer-shore project developer. This could be issued either with the consent of the ROW holder or subject to a finding by MMS that the easement would not conflict with the ROW holder's existing or proposed uses. Other examples where an easement might be appropriate include the deployment of a wave-measuring buoy within the boundaries of a commercial offshore wind project or installation of a wind-measuring tower on a decommissioned oil and gas platform.

Far more important than the type of authorization instrument, however, is ensuring that the selected instrument specifically conveys all rights and interests necessary to development of the project. For a wind energy project, the developer needs full access and use of OCS lands, but may not have as much concern about full use of the water column between each wind turbine. By contrast, for a wave energy developer, an authorization instrument must guarantee the ability to full use and capture of the wave power within the waters encompassed by the project boundaries. Moreover, project boundaries for wind, wave or tidal projects must be drawn such that adjacent projects do not adversely affect one another's operation.

General Issue C: Solicit interest for development projects.

Sites for commercial demonstration projects could be solicited by MMS in a "Call for Nomination" that would be issued to industry early in the process of identifying "Strategic Regions" to include in a three-year leasing program, as described previously.

Sites for demonstration projects would be self-selected by industry, with site access proposals submitted to MMS on a continuous, rolling basis.

General Issue D: Identify terms and conditions of use such as: issuance, duration, assignment of rights, suspension and cancellation of rights and limitation of rights.

Under an "Option to Lease" companies should retain the sole right to develop in the awarded lease area that they have investigated for a period of three years after the execution of the option agreement under which such investigation was carried out.

The option agreement should include a mechanism whereby the "Option to Lease" is withdrawn if companies do not carry out their development plans. This policy guards against site banking and encourages expeditious development. Therefore, the option agreement should specify a timetable for site surveying and resource assessment and for permit applications, with agreed-upon

milestones during the remainder of the three-year leasing program. Failure to meet these milestones should result in a lease of smaller size (reflecting the extent to which these terms, conditions, and milestones have been met), or in the absence of sufficient progress to yield a commercially viable project, the "Option to Lease" should be withdrawn and the associated blocks again be offered in the next three-year leasing program.

MMS must also consider whether to allow developers who have obtained an option to lease to assign or convey their rights to others. Allowing unfettered transfers can lead to mischief, where an otherwise unqualified developer uses a legitimate company as a "front" to secure a site. Moreover, liberal assignment could spawn an industry where business entities apply for leases, obtain permits and then attempt to hoard the sites to increase their value or "flip" them to other developers at premium prices, which unnecessarily increases the cost of development.[20] At the same time, MMS should not prohibit assignments entirely. Sometimes - and especially in a nascent industry - a developer may be acquired or joined by another, more financially solvent company with resources to develop the technology. In this situation, the initial developer should have the ability to transfer or assign the lease to the acquiring company or partner so that the technology and site can be developed.

General Issue E: Identify geographic areas of interest for: resource and site assessment and development feasibility.

For commercial development, and prior to any round of OCS leasing, MMS should identify a limited number of strategic development regions for a particular commercial technology (such as offshore wind), each covering a geographic area on the order of a few thousand square kilometers. Criteria for strategic development should include, but not necessarily be limited to: an adequate

[20] FERC recognizes the detrimental impact of site banking on the public interest in the context of hydroelectric licensing. *See, e.g., Patterson Municipal Utility Authority*, 27 FERC ¶61,323 (1984)(describing that integrity of licensing process is undermined where entities can obtain license to barter it to highest bidder).

energy density, appropriate water depth, and sufficient proximity to a coastal load center with growing energy demand and a robust onshore utility grid. Establishing these criteria is possible with existing meteorological, oceanographic, and utility data that are in the public domain.

As previously described, industry input would be solicited early in this process, in a "Call for Nomination," and the existence of several industry nominations clustered within a particular region should be another criterion in identifying it for strategic development.

For commercial development, MMS should request bids for site access within geographically defined strategic areas rather than over the entire OCS, and in fixed rounds rather than on a continuous, rolling basis. This will encourage commercial development in a controlled manner within regions, providing a sound basis for monitoring and assessing potential cumulative environmental effects, which for a given level of total development would appear earlier if the development was geographically constrained.

Identification of strategic development regions and subsequent bidding for OCS access rights within those regions has other advantages as well:

> the possibility of developers sharing survey work;
>
> the possibility of developers undertaking combined development, permitting, and financing of a single submarine power cable and associated shore crossing;
>
> the ability for utilities to consider demand for onshore grid interconnections and reinforcement in aggregate rather than on an *ad hoc* basis;
>
> early consultation with states and local governments to identify "Qualifying Corridors" for submarine power cable routing through state waters and shore crossing onto state and local lands, where power transmission cables would be acceptable, subject to the usual environmental and regulatory permitting requirements (this would avoid a scenario whereby a developer gains access to OCS waters for site development but cannot gain access to state waters and lands for interconnecting to the utility grid);
>
> greater efficiency of both federal and state agency review of permit applications for individual projects, as they all are within the same region and can be reviewed within the context of the regional EA; and
>
> early identification of cumulative environmental effects (mentioned above).

For individual bids within a strategic area, we suggest that commercial developers be requested to describe their proposed sites using the 5,000-acre rectangular blocks now identified in existing MMS maps of the OCS within the U.S. Exclusive Economic Zone. As previously indicated, sites for demonstration projects would be self-selected by industry, with site access proposals submitted to MMS on a continuous, rolling basis.

General Issue F: Ensure fair competition

Publishing well-publicized qualifying and selection criteria when issuing the request for bids in each strategic region will ensure fair competition. Such criteria should include, but not necessarily be limited to:

(1) Adequacy of the proposed project development plan, including proposed approach to resource assessment and project siting;

(2) Adequacy of the plan for obtaining required permits;

(3) Financial capability to carry out items (1) and (2) within three years;

(4) Commercial viability of the proposed project insofar as can be ascertained by public-domain meteorological, oceanographic, and utility data; and

(5) Experience and management capabilities of the developers.

We recommend that there not be any sort of auction or financial tender, for two reasons. First, this would not be appropriate during the period when this emerging industry is still developing, with considerable economic and financial uncertainties, and so it is still impossible to ascertain what a fair financial tender would be. Second, this would distort the site allocation process, skewing awards toward developers with large financial resources but not necessarily with the best development plans or sufficient experience to carry them out.

General Issue G: Process permits and applications

We recommend that MMS develop an office to coordinate and receive all permit applications for individual projects as they are developed following completion of site bidding and award of site Options to Lease. This arrangement provides a "one-stop shop" for developers to submit their permit applications, obtain clarification of permitting requirements, and obtain status updates. This provides MMS with immediate indication of developers' satisfactory progress towards achieving permitting milestones in their site development plans, as a required condition for their Options to Lease.

We further recommend that MMS develop a Joint Ocean Renewables Office, such as that used in Alaska or now employed by BLM (**need citation here**) to better coordinate state and federal responses to permit applications. Such an office also would provide an effective means of identifying "Qualifying Corridors" for submarine power cable routing and associated shore crossings in strategic development areas, as part of the programmatic EA preparation prior to site bidding.

General Issue H: Process pre-application resource assessments

Section 1833 of the Energy Policy Act of 2005 directs the Secretary of the Interior to contract with the National Academy of Sciences to assess the potential for renewable energy production on federal lands, including the OCS, with a final report to be submitted to Congress by September 2007. Even without this study being complete, there are sufficient meteorological, oceanographic, and utility data in the public domain that MMS can conduct or contract a screening study to identify strategic resource development areas for the only ocean renewable energy technology that is now ready for commercial development, namely offshore wind. Combined with publicly solicited industry nominations and consultation with state and local governments, this should be more than adequate to identify several strategic development areas for programmatic environmental assessment, followed by a competitive round of bidding for site access within those areas.

General Issue I: Allow concurrent developments

We interpret this to mean two or more commercial projects using two different ocean renewable energy technologies being developed on the same lease, easement, or right of way at the same time. For example, an array of floating wave energy devices interspersed among a field of fixed wind turbines. This could be undertaken by a single developer, who would develop the wind project as a result of an initial lease award, and then would develop a wave energy project when that technology is commercially mature. Alternatively, a different wave energy project developer might obtain an easement from the wind energy developer in exchange for a fee or other compensation. We believe that these types of mixed or hybrid developments should be allowed.

We also envision commercial projects that would combine wind, or wave, or a wind-wave hybrid development with an offshore gas combustion power plant fueled by offshore gas resources located in the same lease, easement, or right of way. For example, see the Ormonde hybrid offshore wind/gas project described at http://www.seapower-generation.co.uk/eis.htm. As with the all-renewable hybrid project scenarios described above, such a mixed renewable and fossil fuel project might be undertaken by a single project developer or two different developers. We recommend that the 2007-2012 offshore oil and gas leasing program now being developed by MMS be designed to encourage such hybrids, as they would prolong the life of offshore gas reserves for future generations while enabling offshore wind energy to be sold at a higher value as part of a firm, baseload power supply, because utilities would not be forced to have back-up power plants on shore to make up for wind power deficiencies on calm days.

Finally, we note that although offshore wind turbines and offshore combustion gas power plants are commercially mature technologies, the combination is novel, and we would anticipate that such novel combinations would qualify as demonstration projects as long as the primary purpose was data collection.

General Issue J: Minimize multi-use conflicts

We interpret this to mean minimizing the potential conflicts between any offshore renewable energy project that uses either a single technology or a hybrid mix of renewable technologies, with or without a fossil-fuel component (see **General Item I**, above) and other, non-energy uses of the sea space, such as navigation, sand or gravel mining, dredge spoil disposal, and commercial fishing. Such conflicts are best minimized by first, identifying strategic development regions that present as few of these conflicts as possible, and second, by conducting a programmatic environmental assessment that specifies an appropriate scale of development for each region that balances project economy of scale and minimizing conflicts with other users of that region.

Question 2: Comment on different development scenarios such as phased access rights which would allow for resource or site assessments prior to securing additional access rights. Rights could be permitted on a case by case basis. Development rights would be secured by competitive process. An alternative would be to require that interested parties secure the access rights to an area prior to conducting assessments and research. Please comment on these options.

This question is fully addressed in our summary that begins this Program Area. For commercial development, we support phased access rights through the award of an "Option to Lease" that secures exclusive access for resource assessment and site survey work, with the award of a lease contingent upon meeting specific terms, conditions, and milestones, including the acquisition of required permits.

As previously indicated, sites for demonstration projects would be self-selected by industry, with site access proposals submitted to MMS on a continuous, rolling basis. The question of phased access does bring up, however, the possibility that a developer might treat a demonstration project as a pilot plant and expand such a pilot by phased development into a commercial project at a demonstration project site.

We do not belief that demonstration projects should be convertible into pilot projects that can then expand into commercial projects. This would defeat the whole purpose and benefits of containing commercial development within strategic areas and conducting fixed rounds of competitive bidding. At the same time,

Demonstrations, by definition, are intended to be for technologies that are not yet commercially mature, and MMS should encourage their unrestricted, ad hoc deployment so that they can more quickly become commercially mature. This can be done without undue risk to the environment by assuming that the demonstrations will be short term, of small scale, and decommissioned when the test objectives are met.

When the technologies are ready for commercial development, and an old demonstration site is subject to overlapping, competitive bids, then a developer's previous experience with that demonstration site should be one of the criteria for awarding a lease.

Finally, even as MMS develops an access system such as the one we have discussed, it should continue to allow projects that are currently underway to proceed under existing permitting regimes, *e.g.*, either under the Corps' Section 10 process for offshore wind or the FERC licensing process for offshore wave. Section 388 already grandfathers the Cape Wind and LIPA projects, but OREC believes that there are bona fide offshore renewable proposals where developers have initiated a permitting process with another agency and invested financial resources to investigate, test and develop the technology to be deployed. MMS should identify these projects and consider options such as to (a) allow these projects to proceed under the regulatory regimes that pre-dated the EPAact of 2005 or (b) provide some other process to allow MMS to take over permitting so that projects predating these regulations do not lose time or duplicate work already done. But stalling on going projects even for a year or two will result in withdrawal of private investment and seriously wound this nascent

industry. Moreover, MMS can learn a good deal of information from the permitting and operation of these pioneer projects which can inform MMS' rulemaking.

Question 3: In cases where applicants or interested parties propose activities that would foreclose competing future uses, how should MMS estimate "fair return" especially if the competing uses would be public uses?

For commercial projects, the program we recommend in our summary is geared towards identifying strategic development regions where there are as few competing uses as possible and preparing a programmatic EA to specify a scale of project development that is compatible with whatever competing uses exist. We anticipate that such a program will minimize the foreclosure competing future uses.

Question 4: What constitutes a geographic area of interest?

Our preferred scenario for identifying geographic areas for commercial project development is fully described under **General Issue E**, above.

Question 5: What assessments should we require prior to competition?

As described in our summary at the beginning of this Program Area, MMS should conduct programmatic environmental assessments (EAs) of strategic development regions. Within each region, the EA would identify excluded locations (where project development is not acceptable) and problematic locations (where an economically sized project is likely to encounter permitting difficulties). For acceptable, non-problematic locations in each strategic region, the EA would specify the appropriate scale of project development (maximum size of project, minimum spacing between projects, maximum density of conversion devices within project) and "qualifying corridors" for routing submarine power cables through state waters and onto state lands. These specifications will be based on studies of existing data, including public data from demonstration projects and commercial projects

previously developed in the same region (preferably) or elsewhere (if such regional projects do not exist), consultation with state and local governments and other ocean users in each region (such as the military and commercial fishing industry), and comments solicited from the general public and potentially affected stakeholders.

Question 6: How should MMS structure the competitive process and the application process used to issue OCS access rights? Should MMS auction access rights or engage in direct negotiation?

As described in our summary at the beginning of this Program Area, we recommend that MMS engage in fixed rounds of competitive bidding rather than engaging in direct negotiation on an ad hoc basis.

Question 7: Should MMS take a broad approach to developing a program or should efforts be targeted to specific regions?

As described in the summary that begins this Program Area and under General Issue E, we believe that for commercial development, MMS should target its efforts at strategic development regions, identified with public-domain data.

Question 8: How should MMS consider other existing uses when identifying areas for access?

MMS should avoid potential conflicts with other existing uses by consulting with other users to identify strategic development regions with as few other existing uses as possible. Where other existing uses cannot be avoided, then the scale of development should be appropriate to accommodate such uses with minimal conflict.

Question 9: How should MMS balance existing uses within an area with potential wind and current energy projects?

This question has been addressed in our responses to Questions 3 and 8, above.

Question 10: Should MMS require permits for collecting data from vessels? Should MMS consider this information proprietary?

There is a public interest in ensuring that the geological, oceanographic, meteorological, and environmental data obtained during site survey and resource assessment is properly preserved so that if and when appropriate, they can be made available to others at a later date. Moreover, the nation and the industry as a whole will benefit if this information can be used to support the federal government's overall responsibility for developing, implementing, and updating a regulatory regime for offshore renewables. For example, public domain meteorological and oceanographic data will be used to characterize strategic development regions, but site-specific measurements are needed to validate the accuracy of such reconnaissance-level data.

Therefore, we believe that developers should be required to share their information with MMS, in exchange for the assurance that their information will not be disclosed to third parties during the period in which the company itself has exclusive rights to development. Our specific recommendations are as follows:

- Copies of all resource and survey data obtained from site investigations should be provided to the MMS within one year of their completion, as a condition of the "Option to Lease" agreement. The MMS can provide these data to the U.S. Department of Energy and other federal and state agencies on a "need to know" basis, but under no circumstance shall provide these data to any other third parties or the general public.

- Developers should retain exclusive right to these data for three years after the expiration of the "Option to Lease" agreement under which these data were obtained. This enables these companies to exclusively benefit from these data during the next three-year leasing program (to plan project expansion into adjacent areas, for example).

- In any case, and at any time, developers should be encouraged to make information available to third parties on a commercial basis. Throughout the process, MMS should encourage companies investigating adjacent areas to co-operate and share survey information.

Question 11: What criteria (e.g., environmental considerations, energy needs, economics) should MMS consider in deciding whether or not to approve a project? What criteria should MMS consider for different competing projects (i.e., wind versus current) for the same site?

We believe that the following criteria should be considered in approving a site development plan as bid for a commercial project:

(1) Adequacy of the proposed project development plan, including proposed approach to resource assessment and project siting;

(2) Adequacy of the plan for obtaining required permits;

(3) Financial capability to carry out items (1) and (2) within three years;

(4) Commercial viability of the proposed project insofar as can be ascertained by public-domain meteorological, oceanographic, and utility data; and

(5) Experience and management capabilities of the developers.

The question of competing projects for the same site is addressed under **General Issue I**, above.

Program Area:
Environmental Information, Management and Compliance

K. What information is needed for environmental management systems on the project?

Information for environmental management would be prepared during the permitting process. The detail and complexity of the environmental information will depend upon the scope of the project and the site selected. For example, a pilot project of a short duration would require fewer studies or data collection, as will a project located on a site for which a programmatic EIS has been prepared. An environmental report typically would include the following:

the contents of the proposed project or program and its main objectives,

environmental characteristics of any area likely to be significantly affected by the proposed project;

any existing regulated natural resources and environmental issues which are relevant to the proposed project;

national, community or international environmental protection objectives relevant to the proposed project;

likely environmental effects of implementing the proposed project;

mitigation measures envisaged to prevent, reduce and offset any significant adverse effects on the environment;

proposed monitoring measures, if required.

Once this information has been gathered, preferably on a regional basis and supplemented by the applicant with site specific data, a draft will be circulated to those federal, state and local agencies that administer the laws and regulations applicable to the project. All of this will occur as part of a public process. Consultation with neighbor states will also be necessary where the plan has cross-border environmental effects. must be informed and consulted if it is considered that the plan is liable to have cross-border environmental effects.

L. Assessments and studies of risks and impacts

As a general practice, developers and regulating agencies should be encouraged to identify potential risks and impacts as early as possible in the process. Early disclosure can allow developers to make changes before they are "wedded" to a specific project design. For example, a developer may have the ability to move the position of a project to avoid impacts or reconfigure the design to reduce the project footprint or impacts to the sea floor. All of these changes are far more feasible during the early stages of project development.

Requirements should be consistent with applicable state and local regulations. Environmental requirements should be applicable to the type of marine energy device – i.e. wind, wave and tidal all have somewhat different potential effects on the regulated natural resources. Effective site location of wave and tidal energy devices can potentially avoid many environmental impacts. Offshore wave devices that are moored, rather than bottom founded, have very limited adverse environmental impact. Tidal stream devices below the sea surface have little navigational risk or visual impact. Offshore wind farms have some effects on birds, an impact on the seabed from their foundations, and pose a potential navigational risk.

The following assessments are examples of those typically considered:

Environmental assessment of transmission lines or cable installation and use. This can be done in conjunction with the transmission line / cable lay survey;

Landfall techniques should be employed which ensure a minimum of damage to shoreline and coastal habitats;

Use of existing infrastructure may be utilized in some ways, i.e. channeling underwater cables along existing or former cables or pipelines;

Determine electromagnetic interactions with fish species (especially elasmobranchs);

Seabed and habitat disturbance when burying, maintaining or removing the cable;

Visual and landscape impacts;

Seabed effects of tower monopile or other anchoring structures;

Bird collision/displacement/barrier effects;

Avoidance of areas of high seabird concentration, breeding areas and migration routes;

Landscape/seascape impacts; areas of special landscape value require special consideration;

Navigational routes: marker buoys, nighttime marker lighting, navigational exclusion zones, and possibly foghorn equipment will be necessary. Requirements for navigational lighting may create significant nighttime impacts;

Noise disturbance - underwater piling operations that potentially disturb cetaceans;

Potential for releases of contaminants construction activities and/or equipment operation consistent with water quality regulations during construction, operation and maintenance;

Antifouling: where practicable, use of ultra-smooth surfaces and regular out-of-sea maintenance for marine renewable devices should be preferred to use of anti-fouling paints. Where such paints are used, best practice should be mandatory; their use in areas where there are sensitive mollusk populations should be avoided, and the potential for cumulative impacts should be adequately considered;

Loss of wave energy: for large wave farms, consideration should be given to the effect of the farm on the wave regime, and any consequential effects on inshore habitats and shoreline sediments.

M. Examples of best practices for environmental compliance, monitoring, and effectiveness being used in the US and elsewhere.

Wide-area baseline monitoring by MMS, including identification of protected areas, would provide clarity on more or less desirable areas for development. For example, European governments have selected specific areas for potential development, based on wind or wave energy potential and environmental, navigational, national security and other issues. These governments have undertaken initial impact studies as part of the process for selecting approved sites. Additional, technology specific studies are then undertaken as part of the individual site permitting process, paid for by the developer. *See also* OREC Discussion at Part IV, Access (discussing UK type approach)

Better definition and benchmarking of environmental permitting requirements, pre and post-construction, should reduce delays and avoid inconsistencies. Pre-emptive work on common impacts and solutions will reduce individual project costs and also reduce timescales. [note to committee - not sure what is meant by "preemptive work?"]

Implementation of best practices for construction have been encouraged within other federal and state regulatory processes. For example, ACOE has a streamlined permitting process (general permit) as well as some states for those proposed projects that include actions that have been identified by the regulatory body as an acceptable, documented practice. Incorporation of these types of practices should be encouraged and MMS could develop a general permit or categorical exclusion for those actions utilizing these best practices.

N. Balancing environmental considerations with national energy needs.

In enacting Section 388 of the Energy Policy Act of 2005, Congress has recognized the significance of developing our nation's alternative resources on the OCS and reducing dependence on foreign sources of oil. Congress entrusted fulfillment of these goals to MMS by authorizing it to act as lead agency for developing renewable resources on the OCS.

Other provisions of the Energy Policy Act reinforce the importance of diversifying our nation's energy supply. Section 1833 of the Energy Policy Act of 2005, under Title III, also directs the Secretary of the Interior to contract with the National Academy of Sciences to assess the potential for renewable energy production on federal lands, including the OCS, with a final report to be submitted to Congress by September 2007. In addition, Section 931 of the Energy Bill directs the Secretary of Energy to conduct a program of research, development, and demonstration (RD&D) for ocean renewable energy technologies.

At the same time, in developing renewable energy, we can achieve environmental benefits in addition to energy security. While offshore renewables, like any form of energy, cannot escape

impacting the ocean environment, the impacts are far more benign than those resulting from other forms of conventional or extractive energy production and are potentially compatible with other uses, such as aquaculture, desalinization and artificial reefs. In addition, the environmental impacts from renewable energy projects are also offset by the positive contributions that they make to air quality and sustainability.

Thus, in implementing the Energy Policy Act of 2005, MMS can readily achieve our nation's goal of energy security consistently with, and without compromising environmental considerations. To this end, MMS should develop a streamlined process to encourage the development and implementation of existing and new ocean energy technologies. MMS should support the development of a process that 1) provides for clear management goals and objectives for offshore waters to include energy production, 2) gathers environmental information on offshore areas and makes this information public, and 3) provides for an interim permitting process to allow certain research and development and pilot studies to occur until final regulations are promulgated,

MMS should develop an effective permitting process that recognizes these goals and the potential of marine renewable resources, and provides an efficient and straightforward path to secure a permit.

12. What types and levels of environmental information should MMS require for a project?

a. Information Dependent Upon Type of Project

The types and levels of environmental information required will necessarily depend upon the type of project. Foremost, MMS must develop a process that recognizes the differences in environmental impacts between (a) research and development; (b) pilot testing and (c) actual commercial project development. Research and development and or demonstration projects are smaller scale activities that take place for a short duration and in a limited, discrete area. The level of

information required by MMS for R&D and pilot projects must reflect and be proportionate to their impacts.

In addition, the level of information required for R&D and demonstration projects must also take into account the primary purpose of those projects: to *gather* information about operations, environmental impacts and power reliability, not to generate power for commercial use (though power generation will eventually be a by-product of a pilot) Because developers of R&D or pilot project, by definition, do not know all of the potential impacts of the project, MMS should not require them to demonstrate no-impacts with the same degree of certainty or data that is typically provided by developers of more mature technologies with known impacts. Instead, MMS should consider alternatives such as (a) categorical exclusions for R&D and pilot projects of limited duration, size or impact,[21] (b) preparation of a programmatic EIS which allows R&D and pilots to move forward with minimal site specific evaluation or (c) issuing authorizations for R&D and demonstration projects based on available information and mitigation of known impacts, and require rigorous post-operating monitoring and date collection and immediate remediation of any adverse impacts. Ideally, we look to MMS to implement a demonstration or R&D authorization process which would involve one approval, subject to expedited review by MMS.

b. Need for Streamlining

MMS must incorporate a permitting process so this new industry can continue to develop without regulatory road blocks that hamper the process in the early development stages. The specifics of the environmental information required depend upon which laws and regulations will apply to a particular project. Thus, this rule need not list each piece of environmental information required for each project, since these will change depending upon the specifics of the project. Rather, the challenge

[21] *See, e.g.,* BLM Policy for Wind Development on Federal Lands (December 2005)(allowing categorical exclusions for certain types of wind projects).

for MMS is to develop a process that complies with the many regulations that govern our oceans, but at the same time, allows for an applicant to efficiently navigate through the process. (*See infra* Part IV - discussion on coordination and consultation).

A programmatic assessment offers one way to expedite permitting, since MMS will have already reviewed and analyzed environmental information as part of the programmatic process. This information would provide the majority if not all the information needed for an applicant to use as a baseline. An applicant would not be relieved from minimizing and mitigating project impacts, but at least the applicant would have a good sense at the outset of what those potential impacts are.

For areas where MMS has not characterized as suitable for development through a programmatic EIS (or some other system), applicants should still be able to propose a project. Here, applicants would need to perform their own characterization for existing conditions as well as the specific project effects to meet regulatory requirements.

As part of a programmatic study, we ask MMS to consider the possibility of categorical exclusions for small commercial or pilot projects[22] that can, for example, share an existing transmission corridor or that do not occupy a significant footprint on the seabed. At this time, however, we do not propose any specific project size or dimension that would qualify for "small commercial," MMS may need to seek additional information on this question or else allow appropriate standards to evolve over time.

At this time, we are also confident that a well designed programmatic approach will eliminate many of the problems that smaller commercial projects have experienced. A programmatic EA/EIS

[22] As discussed *infra*, the primary purpose of a demonstration project is to gather information and data on operations. Many demonstration projects will connect to the grid because utilities will want to examine the reliability of the power provided, and demonstration projects may also sell power so as to recover costs of studies. A small commercial project is one where the primary purpose is to generate and sell power for profit. As discussed in Part A, application for small commercial projects will take place through the programmatic, rolling lease process.

process will pre-approving general areas where project development is appropriate and take account of potential cumulative impacts at the outset. Consequently, once a developer makes a specific site proposal, it will only be required to study site specific impacts, which by definition, will be more confined for smaller projects and should not require extensive studies. Thus, the problems that smaller projects frequently experience in other regulatory contexts (such as the FERC hydroelectric process), such as being required to study cumulative impacts and or impacts beyond the scope of the individual project, should not arise under a programmatic regime.

13. What types of site- specific studies should MMS require? When should these studies be conducted? Who should be responsible for these studies?

MMS should develop a program where resources are characterized by MMS and programmatic permit are issued for certain uses to include marine renewable energy. Should the proposed project meet certain benchmark criteria, no studies need be undertaken. Currently, under the MMS Environmental Studies Program, MMS prepares annual regional Studies Development Plans (SDPs) for the various regions. These SDPs state information needs, the regional perspective on the priorities of the needs, as well as a brief description of each study MMS will undertake in that year. The Director of MMS should direct the three advisory committees; the OCS Policy Committee, the Royalty Policy Committee and the OCS Scientific Committee, to identify ocean energy as a priority and to prioritize studies characterizing resources present in the OCS that may be effected by ocean energy technologies such as wind, tidal and wave. This information would then be made available for those developers proposing an energy project on the OCS. The developer would then be responsible to address project effects on the regulated resources.

However, if MMS develops a process that allows for requests of studies MMS must implement a mechanism to limit study requests to only those issues relevant to the project. One approach to limiting studying requests is that taken by FERC in its Integrated Licensing Process. A study request

must comply with certain criteria (18 CFR § 5.9 (b)) in order for the study request to be considered. This process also focuses on study requests related to issues relevant to the project.

14. What should be the goals and objectives of monitoring, mitigation and enforcement?

For pilot projects, the goal of monitoring is to examine and collect information on project impacts. This data will enable the project developer to ascertain whether design changes are necessary when the project transitions to commercial operation and can also help inform future MMS and agency decisions.

Monitoring, mitigation and enforcement goals should be consistent with the conditions delineated in the authorization instrument. Monitoring, mitigation and enforcement objectives and requirements should be clearly identified within the permit and or lease. Enforcement should only focus on those requirements that are not being met by the permitee/lease holder. Enforcement penalties, for non-compliance, must be commensurate with harm caused and consistent with the Small Business Regulatory Fairness Enforcement Act (SBRFEA).[23] The SBRFEA favors remedial action to bring small developers into compliance rather than punitive measures to assess fines for minor infractions which can adversely impact a small developer's finances and jeopardize future compliance measures.

15. What types of impacts are of concern? What are effective approaches for mitigating impacts? How can mitigation effectiveness and compliance with Federal environmental statutes be assessed?

Though some project effects are site specific, we have tried to highlight those which are generally recognized as potential concern:

> Visual impacts have been a concern in some more scenic locations. A site should be sufficiently far from shore or designed creatively to minimize visual impacts.
>
> The potential for local conflicts should be addressed – such as if a proposed site is within a local fishing area, or if construction of a wind farm could cause interference to commercial or military radar sites, or a navigational hazard;

[23] 5 U.S.C. § 801 *et. seq.*

The proximity to sites of scientific interest and breeding/spawning grounds of birds and fish;

Hydrodynamics (e.g. waves, local tidal flows and seabed topography);

Sedimentary environment (e.g. sediment transport, re-suspension of sediments and deposition of sediments within the long-shore and cross-shore environment);

Sedimentary structures (e.g. channels, banks and their stability);

Suspended Sediment Concentrations (SSC).

16. What regulatory program elements lead to effective enforcement of environmental requirements?

Adequate funding to appropriately staff MMS to review operational and environmental data submitted in support of permit requirements. State and federal agencies with permitting responsibilities will also require funding so that they can fulfill their regulatory mandates expeditiously and issue any permits or authorizations required for project operation. In this regard, development of a Joint Ocean Renewables Office (JORO), such as that used in Alaska or now employed by BLM might help because state officials assigned to these offices would have the benefit of resources funded by the JORO.

17. How should environmental management systems be monitored (e.g., by the applicant, MMS or a third party)? What should be the MMS roles versus the roles of the industry for ensuring appropriate oversight and compliance?

Responsibility for monitoring should rest with the applicant, who must demonstrate compliance with the terms of the authorization instrument issued for the project. MMS would receive, organize and review information that supports permit compliance, but only actively involve itself where there is evidence of non-compliance with permit conditions. When effective compliance is not undertaken, MMS should have enforcement authority to address non-compliance.

Program Area: Operational Activities

O. Permitting pilot projects

In Part A, we discuss the role of demonstration projects and distinguish them from pilot projects or small commercial projects. We recommend that MMS must establish at least two categories for leases, easements and ROWs: an R&D/demonstration projects and commercial scale or production projects. Demonstration projects are intended to demonstrate technical performance and to assess environmental impacts. By their very nature they are intended to provide additional sound information on which to base regulation. Therefore it is recommended that an expedited process be developed for pilot project to encourage their deployment and gathering of information which will be the basis for decisions to grant commercial or production permits and to establish the conditions of those production permits based on the performance of equipment, the impact to the environment and the fragility of the local ecosystem.

3. Demonstration Permits should be regarded as temporary in nature. As such:

a. They should be for a term sufficient to allow developers to test their concepts and gather data. The necessary term for operation should be consistent with the developer's test plan.

b. MMS should not attempt to limit the size of a demonstration project. The size of the project is dependent upon the concept that a developer seeks to research under its test plan for operation.

c. The permit application should be simple but include information about the technology to be deployed, the location and known environmental information. In addition, pilot project developers must provide evidence of bona fide status as a pilot. A demonstration developer should be able to show that its technology has been evaluated by a group such as EPRI, a research institute or other agency in the U.S. or abroad or been subject to wave tank tests. OREC wants to avoid a pilot program where developers with grand ideas, but no substance take advantage of the lower barriers to entry to

grab sites that they do not intend to develop. In addition, OREC wants to avoid unscrupulous developers who attempt to take advantage of the super-streamlined nature of the demonstration permitting system to "sneak in" projects that should be permitted as commercial projects under the programmatic approach.

d. Within 20 days of the application being filed, MMS should hold a meeting with the applicant, any agencies having jurisdiction, other interested parties and their technical representative to review the proposed project and discuss technical issues and information gathering requests.

e. There should be a 45 day public comment period for agency and public input into the proposed permit.

f. Based on the filed application and comments, MMS should then have 45 days to issue a permit identifying any conditions, additional test or environmental studies to be conducted as part of the Pilot.

g. Approved studies should be conditioned on the environmental risk posed by the equipment to be deployed. Studies requested by agencies or other entities for the purpose of general research should be funded by the requesting entity. Studies should address most obvious or known impacts. Should not be required to conduct endless studies for impacts not likely to occur or where results will be inconclusive]

h. During the authorization process, applicants should have a chance to review study requests or conditions and challenge them or and offer alternatives for MMS' consideration before accepting the terms of the permit.

i. The Applicant should file yearly reports on the operations and results for all studies it is required to perform as part of the permit.

j. The authorization should include conditions for removal of any equipment and anchorage systems. This could be in the form of a bond, sinking fund or escrow account. The applicant may

submit a proposal to abandon all or part of the system in place as an artificial reef for MMS' consideration.

k. In order to avoid applicants from filing applications on sites with the intent not to build but to auction off the sites to other developers, deployment of some part of the system should be required within 6 months of issuing the permit or a bond or other form of security should be posted that would be forfeited if no pilot were deployed within 2 years.

l. As discussed in Part A, MMS should consider options to allow a successful or promising demonstration project to evolve into a commercial project.

4. Commercial Leases

a. Should have a term of at least 20 years, which is long enough to be economically viable and short enough to allow for remediation of any observed long term environmental impacts.

b. At present, we do not recommend any specific size constraints for commercial projects and instead, encourage MMS to be flexible so as to accommodate a variety of technologies. We anticipate that with the programmatic process in place, smaller commercial projects will only need to address site specific impacts in applications, thus reducing the regulatory burden. MMS should ensure that any applicable regulation and review of smaller projects is proportionate to their size and impact.

c. The permit application should be simple but include information about the technology to be deployed, the location and known environmental information.

d. The application should require an EIS or be based on data collected from a pilot project at the same site that has gone through operation so that there was site specific information regarding environmental impacts.

e. Within 20 days of the application being filed MMS should hold a meeting with the applicant, any agencies having jurisdiction, other interested parties and their technical representative to review the proposed project and discuss technical issues and information gathering requests.

f. Once filed the application should be open by MMS for agency and public comment for no more than 120 days.

g. Based on the filed application and comments, MMS should then have 90 days to issue a permit identifying any conditions, additional test or environmental studies to be conducted as part of the commercial operation.

h. Approved studies should be conditioned on the environmental risk posed by the equipment to be deployed. Studies requested by agencies or other entities for the purpose of general research should be funded by the requesting entity.

i. After issuance of the permit applicants would then have 30 days to challenge any of the conditions and offer alternatives for MMS' consideration before accepting the terms of the permit.

j. The Applicant should file yearly reports on the operations and results for all studies it is required to perform as part of the permit.

k. There should be a 10 year review of the environmental studies at which time MMS can consider the need for additional studies or modification to operations based on clearly identified impacts.

l. Applicants would have 60 days to challenge any of the conditions and offer alternatives before accepting the terms of the permit.

m. MMS should impose a revenue requirement equal to a fixed percentage of gross income from the site not to exceed 0.5%. Funds collected from this fee would be used for research and to offset administrative cost for MMS to manage the program.

n. Expansion of the site beyond the size of the original application would be treated as a new permit application and subject to a new 20 year permit from the date of approval.

o. Upgrades to existing units would require an amendment to the existing permit and subject to the same EIS requirement as a new permit.

p. Processing of commercial authorization applications proceed in accordance with Executive Order 13221 (streamlining process) and the Task Force's Recommendations to expedite NEPA review (*see* discussion *supra*).

q. The permit should include conditions for removal of any equipment and anchorage systems. This could be in the form of a bond, sinking fund or escrow account. The applicant may submit a proposal to abandon all or part of the system in place as an artificial reef for MMS' consideration.

P. Human Health and Safety

The need to ensure human health and safety must be balanced with the need to access the project site where needed for project operation. In general, however, moving components should be enclosed in barriers to prevent direct access by normal means. At sea, access as a haven for boat accident victims should be considered.

In many instances, technological advancements can reduce the need for frequent site access. Many offshore facilities can be controlled remotely. OREC will also look to the experience of European companies offshore and the oil and gas industry to develop best practices for ensuring human safety at the site.

Q. Protecting environmental resources during construction, production and removal.

The EA/ EIS should address methods and risks of normal construction methods. The location should be selected so as to avoid impacts to endangered species or alternatively, can consider the option of creating a haven for such species. When projects are decommissioned or removed, MMS must evaluate the new environment that may have developed around the project, *e.g.,* artificial reefs that may develop around facilities. At the removal stage, impacts to the newly created environment must be evaluated.

R. Identifying design and installation requirements associated with new projects and modification of existing facilities.

This rule should allow for incorporation of new methods or materials that would lessen impact or improve options for re-use or multiple use applications.

S. Identifying production requirements as a component of diligence.

This ruling has to be open enough to develop as new insights, economics, and or industrial capabilities change.

T. Managing end of life and facility removal.

See discussion *supra* re: surety bonds for decommissioning and response to Question 18.

U. Conducting oversight responsibilities (e.g., inspection and monitoring)

Developers will be responsible for monitoring and inspection of projects and reporting to MMS. Additional monitoring and inspection would be performed by MMS.

Under the MMS Oil & Gas model, the lessees pays for MMS to conduct oversight and inspection as part of cost recovery. OREC does not believe that developers should pay the costs of MMS inspections, at least in the early years of project development or for small projects. If fees are assessed, cost recovery may require a sliding scale in that in the early years the profits may be very low and if are driven negative by fees and costs the industry will never attract investment.

V. Identifying technology assessment and research needs

Developers will be responsible for identifying priorities for technology assessment and research needs.

W. Preventing waste.

No response

X. Conserving resources.

The advent of multi- user applications must be considered and much of the renewable off shore industry may be compatible with research, alternate forms of energy production, and/or aquaculture. As such multi-use needs to be an option and will be, provided that MMS implements the plan recommended by OREC in Part IV, Access to OCS Lands, *supra*.

18. What options should MMS consider as alternatives to facility removal? Are there unique issues (such as liability) associated with those options?

As OREC understands, MMS' current policy on decommissioning of oil and gas structures is that decommissioning must occur within one year unless there is a state approved artificial reef program. Alternative use such as alternative energy production, aquaculture, research, bio-mass development should be an options and time provided to evaluate those options.

19. What engineering challenges should be considered when operating in an OCS environment?

Some of the engineering challenges that developers face may be similar to those experienced by the oil and gas industry, but on a different scale, depending upon the size and scope of the proposed project.

20. What safety issues exist when operating an energy production facility on the OCS?

Some issues include turbine speed, flows, shipping are all potential safety issues.

21. How should operational activities be monitored? Is there an appropriate role for the applicant and independent third party certification agents? Describe existing models that could serve as a prototype inspection and monitoring program?

At this time OREC does not believe there is a need for 3rd party monitoring or certification. OREC believes that adequate regulations can be established under the authority of the MMS to ensure adequate inspection of facilities for human safety, environmental protection and operational integrity. Models such as the FERC's Division of Dam Safety and Inspection **can be useful in setting the structure for such an internal program.**

22. Are there special considerations that MMS should examine in developing an inspection program that covers a diverse set of renewable production facilities?

As OREC understands, oil and gas lessees pay the cost of onsite inspections and verification of plans conducted by MMS. Direct comparison of renewables to a fully developed industry such as oil and gas may prejudice the outcome by burdening a developing industry. Initially, some cost share or incentive or cooperative effort may be required until profitability is achieved. *c.f.,* OCS Debate Over Oil and Gas Leasing and Revenue Sharing, http://www.ncseonline.org/NLE/CRSreports/05oct/IB10149.pdf.

Payment and Revenues

23. What should the payment structure be designed to collect? Should payments be targeted at charging for use of the seabed? To capture opportunity costs of displaced activities? Should payment structure capture a portion of revenue stream and if so, in what circumstances?

In the first part of this section, we discuss general background and approaches to royalty payments, including OREC's recommendation that MMS reject opportunity-cost based valuation and use of bonus bids. In the second part of this section, OREC recommends a royalty payment structure based on revenues, with exemptions for small projects, a "honeymoon" phase to allow for larger projects to begin to repay investment and reach optimal efficiencies and insurance that royalty payments do not offset PTCs or other tax benefits. OREC's approach to royalties strikes a balance between stimulating development of offshore renewables, attracting private investment and sharing benefits of development, when they accrue, with the public. Moreover, as we note, MMS has acknowledged that waiver of royalty payments is appropriate to stimulate development of new resources.[24]

a. Policies Behind Royalties Payment

i. The Concept of Fair Return

Section 388 of the Energy Policy Act directs the Secretary to establish a system of "royalties, fees, rentals, bonuses or other payments to ensure a fair return to the United States" for leases, easements and ROWs granted for alternate uses. In the context of extractive resources such as oil, gas and minerals, a fair return must compensate the United States and the public for consumption and enable the public to share in the profits that accrue to industry for extraction of resources. But in the context of the offshore renewable industry, fair return has a much different meaning, both because renewable

[24] *See, e.g.*, CBS News Report: Oil Companies may receive royalty waiver of up to $7 billion, February 14, 2006 at www.cbc.ca.cp/business/060214/b021452.html (describing that MMS may waive royalty payments as incentive to encourage more oil and gas production).

power is a non-extractive and not necessarily exclusive use and also because today's offshore renewable pioneers risk their own capital, with no guarantee of return, to develop a source of clean, sustainable energy that will wean our nation from independence on foreign oil. In determining appropriate levels of payments we must recognize three principles: (a) because renewables are nonextractive, use of the OCS for renewable development does not preclude future use of the area for other purposes; (b) renewables offer non-monetary benefits, such as clean, emission free energy and energy independence, benefits which should be "credited" against royalty payments and (c) the very efforts of offshore renewable developers, at least for the near term, *i.e.*, next decade, themselves provide a return and significant benefits to the public.

ii. Opportunity Cost

OREC does not support an opportunity cost based approach to royalties for several reasons. In the short run, OREC does not expect the type of competing uses that would justify opportunity cost pricing. At present, many of the nearer shore OCS lands where renewables might be sited are closed off for oil and gas production, while lands farther out on the OCS are not realistic for commercial renewable development at this time.[25] As for potential conflicts between wind and wave energy, a move towards comprehensive management of the OCS as described *supra* at Part A: Access to Lands will minimize competing uses. Since opportunity cost pricing, by definition, compensates for lost opportunities associated with displaced use, where no displacement or trade-offs occur, opportunity costs pricing would result in an unnecessary and unjustified financial burden.[26]

In addition, opportunity cost pricing injects too much subjectivity into the royalties calculation process. Moreover, OREC not found any precedent under other federal or state land management statutes that would support use of opportunity cost pricing as the basis for royalty payments.

[25] Insert cite to 5 year plan maps

[26] At some point in the future, MMS could revisit the issue of opportunity cost pricing.

iii. Bonus Bids

In the oil and gas model, MMS auctions leases to the highest bidder. The price paid by auction winner is known as a "bonus bid."

OREC does not support the use of bonus bids for leasing OCS lands for renewable uses. A price only competitive bid is not appropriate for offshore renewables, which are neither a mature industry nor sufficiently uniform to allow for a cost only comparison. A bonus bid system rewards the developer with the deepest pocket, (but not necessarily one who will optimize use of the site) and can lock out smaller developers with promising technologies worth pursuing. In addition, with the exception of the already highly competitive oil and gas leasing system, no other federal land management system charges bonus bid fees in addition to royalties, annual charges or rentals.[27]

b. Recommended Payment Structure for Royalties: Royalties Should Stimulate Investment and Development

MMS should structure payments as a percentage of gross revenue produced by the qualifying renewable energy facility. Recognizing that the construction of a renewable energy facility is capital intensive and that payback times are significantly longer than other forms of fossil fuel generated electricity, the royalty payments should be structured so they do not deter investment. The investment in onshore renewable power generation is at an all time high and there is currently a strong carry-over interest in development and investment in attractive offshore renewable projects. As such payments to MMS should be structured in a manner which continues to stimulate the growth of offshore renewable energy generation and provide motivation to developers to invest in offshore projects. Further as offshore renewable projects, especially wave and tidal power projects, are in the early stages of development, it is important to structure a payment system that will not deter the development of pilot

[27] *See, e.g.,* BLM ROW policy (no bonus fees), FERC annual charges (no extra costs, but admin fee for license processing).

scale or prototype facilities. Additionally, at the present time the Production Tax Credit as authorized by Congress, does not provide an incentive for some forms ocean energy such as wave and tidal power, but does include an incentive for wind power. As a result offshore wind energy has a distinct financial advantage compared to wave and tidal power projects. MMS should consider this inequality when determining a royalty structure. In consideration of the early stage of offshore renewable project demonstration in the United States, MMS should adopt the following payment structure:

> No payment for qualified renewable energy facilities of less than 5 MW and no payment for demonstration plants.
>
> For qualified renewable energy facilities of greater than 5 MW, the following payment structure shall apply:
>
> For the first 5 years of generation there shall be no payments due.
>
> For Year 6 and beyond the qualified energy facility operator shall pay MMS a fee of 1% of gross revenues generated from the sale of electricity into the grid, unless however the Production Tax Credit is not extended to included ocean energy, then the royalty payment to MMS shall be reduced by an amount equivalent to the benefit received if the Production Tax Credit was extended to included ocean energy.

24. Offshore renewable energy technologies are in their infancy. Should the payment structure be designed to encourage development of these activities until the technologies are better established?

MMS should structure the payments to encourage the development of offshore renewable energy systems. Like any power generation technology, generation cost is reduced as more capacity is deployed. It is unlikely that offshore renewable energy technology will be able to compete with other power generation options in the US in the near future.

If emerging technologies/industry are levied with excessive costs it will constrain, or divert all together the required investment to kick-start and sustain this industry. Payments should be reflective of the development stage which the sector is at. If charges are higher; market incentives/mechanisms (i.e. – Production Tax Credit or state level price support) will have to be higher to compensate and

encourage investment. In essence, any payments are simply reducing the effectiveness of the mechanism.

To allow these technologies to establish themselves in the marketplace, it will be imperative to create a payment structure that is favorable to these developments. The payment structure should also be technology-specific to accommodate different technological risk profiles (i.e. offshore wave, offshore wind, ocean currents and ocean thermal). As suggested in the response to question #23, the MMS should eliminate payment for projects less than 5 MW.

OREC notes that MMS itself recognizes that waiver of royalties is justified to stimulate new investment. For example, in response to questions about MMS' potential waiver of $7 billion in royalties for the oil and gas industry, MMS Director Johnnie Burton responded:

> We need to remember the primary reason that incentives are given[…]It's not to make more money, necessarily. It's to make more oil, more gas, because production of fuel for our nation is essential to our economy and essential to our people.[28]

As with oil and gas, MMS must design a royalty pricing structure for offshore renewables that will stimulate growth.

25. What methods are used by the renewable energy industry to quantify the risk and uncertainty involved with estimating the size of a renewable energy resource and evaluating profitability?

Risk reduction in the planning stages of a renewable energy project is an important step to be able to determine economic viability. The offshore renewable resource in the United States is sizeable and resource strength and frequency distribution not size is the dominant factor in evaluating economic viability. In addition to the resource strength, factors such as seabed sedimentation type, bathymetry, local grid interconnection options and infrastructure availability play important roles in determining the profitability of a particular project. A detailed nationwide digital mapping of the resource would contribute significantly to reduce project uncertainty and attract developers.

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[28] "*Oil Companies May Receive Royalty Waiver of up to US $7 Billion,*" CBC Report (February 14, 2006), www.cbc.ca/cp/business/060214/b021452.html.

Obviously profitability is not a sole function of resource, but the return on the investment in the energy conversion plant. The resource is currently probably the most well understood risk; with the performance of the technologies presenting larger unknowns- profitability will be strongly linked to both the performances of the technologies deployed and the unit price of electricity supported.

26. What measures of profitability are commonly used as renewable energy investment decision criteria? How do bonus bids, rents, royalties fees and other payment methods impact the profitability on these projects?

Renewable energy project costs are dominated by large initial investments to build the power plant and relatively low operating costs throughout the plants life. As a result, the cost of energy generated by any renewable energy source is heavily dependent of the cost of capital. The cost of capital in return is largely a function of project risks. Offshore Renewable Energy is still in an early stage of development and associated risks are perceived by the investment community to be high. The principal risk is operations and maintenance costs (O&M) costs which can only be validated through as sea testing for a period of years. Today, offshore wind is the most technologically advanced and proven renewable energy source. As a result financing for offshore wind is more readily available at competitive rates. Financing for wave and tidal power projects is generally considered a very risky investment and is not generally available throughout the same channels as wind power projects. State governments such as Oregon have created strong incentives to stimulate the growth of offshore renewable energy programs. Oregon's incentives include:

A thirty five (35) percent business tax credit to help offset the capital cost of the project;

Guaranteed 20-year forward power purchase agreements with the investor owned utilities to help project developers secure financing for riskier ventures;

A fund to make up the difference between the market price and the higher cost of generation associated with early stage technologies.

These incentives are designed to help early stage renewable energy technologies such as wave and tidal energy overcome the financial barriers to developing pilot programs. The MMS should structure its royalty payments so as not to diminish the impact of these incentives.

Typical investor owned renewable energy projects earn a return just greater than the cost of capital. In fact, the National Renewable Energy Laboratories guidelines for calculating the cost of wind energy, utilizes a blended return on capital and equity of just 14%. As such a royalty payment of 1% can significantly reduce the return to an investor. MMS should consider the competitive economics of renewable power projects when determining the royalty payment structure.

27. Are there economic models available to calculate the profitability of renewable energy proposals?

In the US, a power plant is either owned by a utility or an independent power producer (IPP). Work on economic models for offshore renewables in the United States has been carried out by the Electric Power Research Institute and the National Renewable Energy Labs Wind Technology Center (NREL). EPRI has published a methodology to calculate energy costs based on utility and non-utility models which is available for download at www.epri.com/oceanenergy. This model provides an accurate first cut estimate of project economics. As mentioned above the single largest risk in the financial model is the ongoing operations and maintenance costs. This issue plagued the wind industry in the early years of its growth and only recently have financiers and developers been able to accurately forecast these costs.

28. Increased reliance on renewable energy offers both economic and environmental benefits. What are the benefits to society and do they differ from market driven benefits?

The generation of energy using renewable energy sources has a number of benefits including:

1. Reduction of greenhouse gas emissions and associated externalities by displacing fossil fuel based generation. Different studies show costs to society that are on the order of 7.5 cent/kWh coming from externalities such as acid rain and other emissions. Assume a typical 100MW wind farm with an annual

output of 257,544MWh, the resulting benefit to society in displaced fossil fuel generation is $75/MWh x 257,544 MWh/yr = $19.3 million / year or over it's 20 year life $386 million. Remember that a 100MW wind farm is a small scale for offshore.

2. Local job creation and economic stimulation – The Marine Energy Group published a report on the potential of the offshore renewable energy industry. This report estimates that by 2020, that more than 5 jobs will be created for each megawatt of installed capacity. This job estimate includes both the manufacturing labor as well as the personnel required to operate and maintain the offshore equipment.

3. Reduction in Trade deficit by creation of local jobs. (i.e. money stays in the country and does not go to the Middle East ….

4. Energy security – Diversification of energy supply, Dependence on foreign Oil & NLG, show cost based on RMI estimates.

5. Development of offshore renewables can be viewed as an insurance policy against future fuel supply shortages.

29. In section 8(p) of the OCLSA, as amended by the Energy Policy Act, the Secretary must require the holder of a lease, easement or ROW to furnish a surety bond or other security. What options should MMS consider to comply with this requirement?

Section 388 of the Energy Policy Act requires the holder of lease, easement or ROW to furnish a surety bond and provide for restoration of the site. Presumably, the purpose of the surety bond is to ensure that a developer has sufficient resources to comply with the terms of its lease or ROW and to decommission the site at the conclusion of the lease term.

For a small, pilot project, funding a security bond can increase project costs and ultimately render the project economically infeasible. Thus, OREC recommends use of other, less onerous tools, such as a letter of credit or satisfaction of a test of creditworthiness, which can serve as a proxy for a surety bond. A letter of credit or creditworthiness means that a developer can borrow funds to meet its obligations under the lease at such time as those obligations arise and thus, is not as much of a

burden as an upfront requirement to post capital to cover potential costs. Using alternates to the surety bond will facilitate the financing process for developers as well, thus, reducing the cost of capital necessary to build their projects. Another possibility is to allow a developer to place revenues from a project into a decommissioning fund over the life of the project for potential decommissioning costs.

In other contexts, such as competitive bids for power supply, state utility commissions have allowed smaller, QFs (qualifying facilities) to satisfy lower credit standards than large utilities, recognizing that stringent requirements might foreclose a QF from developing a project. Likewise, MMS regulations provide for exceptions to the surety bond requirement for certain oil and gas If it is for decommissioning it needs to be reflective of the very different technologies. Caution is required with leases with regards to "carpet-bagging" (especially with site specific resources), implementation of appropriate caveats with bonds can help with this.

Finally, any surety bond, credit requirement, decommissioning fund or other security against future decommissioning costs must be calculated with respect to the work involved. For some wave energy projects that are tethered to the seabed and that encompass more "portable" features such as floating buoys, decommissioning costs may not be as expensive as the cost of dismantling an oil platform or even a large offshore wind farm. Thus, any decommissioning costs should be proportionate to the size of the project.

Coordination and Consultation

Coordination and Consultation

In this section, we first address a specific issue that the MMS questions do not directly raise: potential conflict between the MMS leasing system under the OCSLA as amended by Section 388 and FERC jurisdiction over wave and tidal projects on the OCS under the FPA [cite]. As previously discussed, MMS' and FERC's regulatory mandates directly overlap and potentially conflict. At best, the dual MMS/FERC system adds another level of bureaucracy.

Following the discussion of possible jurisdictional conflicts, we discuss the need for Interim Regulations, whereby MMS would allow proposals to proceed under existing authority of other agencies and subsequently, adopt or incorporate those findings once MMS' regulations are in place.

Finally, we respond to MMS' questions regarding coordination and consultation with developers, the public and other agencies. In particular, we note that MMS' lack of jurisdiction *off* the OCS and on submerged lands up to three miles from shore poses a potential obstacle to coordination at the state and federal level. In the absence of MMS jurisdiction over states, MMS lacks the tools necessary to fully coordinate state and federal permitting. OREC has suggested several ways to remedy this issue, including creation of a Joint Ocean Renewables Office and asking MMS to assert residual authority in state waters as an extension of its power to lease OCS lands for alternate energy projects.

A. FERC/MMS Conflict

The MMS-FERC jurisdiction conflict poses the most serious complication to orderly development on the OCS because both regulatory schemes take a comprehensive, multiple use

approach to development and both agencies view themselves as the "lead" for authorizing offshore wave energy projects.[29]

In light of the potential jurisdictional conflicts, OREC suggests the development of an MOU between FERC and MMS addressing overlapping regulatory jurisdiction. Some of the issues such an MOU should address include:

- Whether a lease, easement, right of way, or other MMS property-related authorization conflicts with the FPA to the extent that it might be preempted.

- Whether it is appropriate for an offshore project subject to MMS jurisdiction to also pay annual charges pursuant to Section 10 of the FPA.

- Whether FERC, or MMS, has jurisdiction related to preliminary permits regarding potential sites.

- Resolution of potentially conflicting application and site selection criteria.

- the MOU should also recognize FERC's authority, unique role and experience with respect to transmission of power generated by any OCS renewable.

OREC has recommended, and expects that MMS will eventually adopt some type of programmatic approach to OCS leasing, similar to the BLM system or the current oil and gas paradigm. A programmatic approach will still accommodate pilots and allow for individual innovation. But as with the BLM or oil and gas program, under a programmatic approach, the government plays a role in identifying sites for development. By contrast, the FERC process is entirely developer driven, with developers identifying sites and filing a preliminary permit or

[29] An overlap also exists between FERC and MMS for gas pipelines on the OCS. FERC issues Certificates for pipelines under Section 3 of the NGA, while MMS issues ROWs for portions of the pipeline occupying OCS lands. But in this situation, FERC has assumed lead agency authority. By contrast, MMS intends to assert lead agency authority over both offshore wave and wind projects which could put its approach to comprehensive OCS management in conflict with FERC's mandate under the FPA to ensure comprehensive development of a waterway.

license. What if a developer were to file a license application for a wave site and go through the license process only to find that MMS intended to identify for use as a wind resource? At a minimum, FERC and MMS would have to coordinate at the outset to prevent developers from wasting time filing licenses on sites when they can never obtain a lease or ROW for its use.

The FERC process does not have any exemption for pilot projects, but the Commission has taken recent steps to try to streamline its process for new technologies and smaller projects.[30] OREC has recommended that MMS implement a pilot process for new technologies and smaller projects. Requiring the developer to comply with extensive FERC license regulations could undermine any benefits gained from a pilot process and would put offshore wave and tidal energy at a disadvantage to other forms of offshore renewables not subject to FERC jurisdiction. A dual regulatory system would result where the two technologies are accorded different treatment. Making wave energy projects - which are not as mature or advanced as offshore wind - subject to two federal regulatory bodies could possibly place them at a competitive disadvantage.

In addition, FERC inspects and enforces compliance with the terms and conditions of a license and MMS plans to enforce compliance with lease provisions. Thus, a wave project would be required to answer to two authorities, whereas other alternate energy developers must only satisfy one agency.

The FERC licensing and operational programs, however, do contain certain provisions that MMS should consider utilizing in the development of the OCS renewable. program. For example, NEPA processes, consultation, and licensing procedures are conducted concurrently to maximize efficiency, reduce delay, and minimize conflicting regulatory requirements from other agencies with authority to approve or suggest conditions for projects. Like FERC's hydropower program,

[30] *Verdant Power*, 111 FERC ¶ 61,024 (2005) (allowing exception to licensing for new, damless technology).

MMS' program should focus on maintenance of safe and reliable power generation and capacity to meet the spirit of Section 388.

B. Interim Regulations/Grandfathering

Section 388 "grandfathers" both the Cape Wind and LIPA projects. Cape Wind has already undergone extensive environmental review, while LIPA has also invested significant effort in working with stakeholders to file its application with the Corps of Engineers. MMS should adopt all of the work done on these projects to date and avoid reinventing the wheel.

OREC believes that there are other bona fide offshore wind and wave energy projects where developers have secured FERC permits, initiated consultation with agencies and stakeholders and invested money in testing or reviewing technology. MMS identify these projects and allow them to continue to move forward.

Section 388 directs MMS to implement regulations within 270 days. The strict deadline imposed on MMS is evidence of Congressional intent that out nation embark on a program to develop alternate resources of the OCS. If MMS is able to implement regulations within 270 days, or roughly by June of 2006, there is no need for interim regulations. However, if MMS cannot issue the regulations timely, it should put in place interim regulations, essentially providing for developers to seek authorization under other existing permit programs until such time as MMS adopts its regulations.

Because our proposal allow demonstration projects to proceed on an *ad hoc* basis initially, MMS can begin to process applications for demonstration projects immediately, even before its programmatic assessment is in place. As for commercial development, MMS can initiate the nomination process and begin collecting information about potential sites to include in the first round of leasing.

C. Question Responses

30. What other efforts should MMS take, besides this ANPR, to consult regarding early stage development?

An effective offshore renewable program must have a broad base of support, within the local community and nationwide. Most members of the public support renewable energy development and are likely to support MMS efforts. At the same time, the public, particularly those who reside within close proximity to a project, appreciate information about future development plans. For that reason, MMS must make efforts to reach out to stakeholders within coastal communities and keep them informed of its efforts. OREC commends MMS' website on this rulemaking, which offers an excellent source of information to the public. At the same time, MMS must try to strike a balance between providing information and artificially creating conflicts or issues that do not exist. Sometimes, stakeholder processes, in an effort to be fair, give too much voice to minority interests raising concerns that do not warrant extensive consideration and which can doom projects from the outset.

As for other measures to facilitate development, MMS could consider establishing an office to assist developers prepare and present a proposal, similar to the type of informal assistance that FERC extends to hydropower developers.

And MMS should take steps to begin to negotiate, formalize and execute MOUs with other agencies to ensure expeditious implementation of these regulations and processing of lease and ROW applications.

31. Should a broad approach be taken to developing a program or should efforts be targeted to specific regions?

See response in Part A describing programmatic process.

32. Would establishment of federal/state cooperatives for targeted areas be useful?

Yes. As we understand, MMS hopes to assume lead agency role in permits on the OCS. In this regard, MMS must grapple with a serious jurisdictional gap: MMS lacks jurisdiction over state submerged lands, up to three miles offshore, where transmission lines will be sited. Renewable

projects on the OCS will literally be "stranded at sea" if the state refused to lease lands or grant necessary authorizations for a transmission line. Although the UK system also involves several different agencies in the permitting process, ultimately, the agency responsible for issuing leases has authority over the project from the generation to shore.

In short, developers must have an assurance that they can site and operate the entire project, from the OCS-sited generation component to transmission through state lands to a shore-based substation. Moreover, developers must be able to permit a project through one relatively unified process.

The lack of coordination between state and federal efforts can lead to delays, when states fail to grant authorizations in a timely manner. And lack of collaboration can cause duplication of efforts when state and federal agencies undertake the same analysis individually, rather than sharing data or working on studies cooperatively. The duplication of effort and lack of coordination is also inconsistent with Executive Order No. 13121 intended to streamline permitting of energy projects on federal lands.

Accordingly, we propose the following ideas to potentially address this gap in MMS's jurisdiction and ensure state and federal collaboration.

1) Establish a Joint Ocean Renewables Office (JORO)

The NEPA Task Force of the President's Council on Environmental Quality addresses, in great detail, many of the advantages of and barriers to intergovernmental collaboration.[31] One approach that has attempted to address timely and comprehensive regulatory and permitting review is the Joint Pipeline Office (JPO):

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[31] 1) NEPA Task Force Council on Environmental Quality http://ceq.eh.doe.gov/ntf/ (site last visited February 23, 2006), *see* Chapter 3; *also* http://ceq.eh.doe.gov/ntf/catreport/ceq_ch3.pdf (site last visited February 23, 2006)

> "JPO, established in 1990, is six state and six federal agencies sharing similar regulatory or management responsibilities related to oil and gas pipelines in Alaska, most notably the Trans-Alaska Pipeline System (TAPS). Representatives from six of the 12 agencies are co-located and coordinate oversight of pipelines, and issue right-of-way leases and other permits needed for oil and gas projects. Cooperative agreements were developed between agencies to share staff, knowledge, equipment, and office space. This unique working environment eliminates duplication of work, is more customer oriented, and simplifies complicated and lengthy government processes."[32]

A Joint Ocean Renewables Office (JORO) could be established along the lines of this model with the expressed mission of providing timely, comprehensive regulatory and permitting review of projects by respective agencies. Even where a formal JORO cannot be formed, MMS and various agencies must endeavor to enter into well-defined, cooperative MOUs to avoid overlap between state and federal agency responsibilities.

2. Coordinating MMS programmatic assessment with state coastal zone planning, under CZMA or other programs.

When MMS "blocks off an area for development," through a programmatic EIS, it should obtain a state consistency certification at that point. Thus, when developer comes in, presumption is that state will authorize project, subject to required mitigation conditions. Coordination with state agencies might encourage them to include offshore renewables in their own coastal planning programs.[33]

3. Reverse Consistency

Perhaps MMS can consider the option of preempting states in certain, limited situations with respect to consistency findings, for example, in cases where national interest and public benefits outweighs individual or provincial local interests. Here, the national interest in developing alternate

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[32] http://www.jpo.doi.gov/JPO/What_is_JPO.htm (site last visited February 23, 2006)

[33] R. Russell, *Neither in too Far Nor Out Too Deep*, Rusty Russell, 31 Boston Env. L.R. at 256 (describing Oregon's coastal program and opportunities to include offshore wind and wave in state level programs).

sources of energy to liberate the nation from reliance on foreign oil may override certain state and local interests. As Rusty Russell asks in his article, *Prospects for Utility Scale Wind Power:*

> shouldn't expert federal agencies have at their disposal more reliable means for ensuring that state activities, which can easily halt a project under the weight of permitting, do not directly undermine broader environmental objectives?" [34]

OREC expects that most states will support development of clean, renewable energy sources and will cooperate to ensure expeditious permitting of these projects. Still, inevitably, in some instances, a state and federal agency will find themselves at odds - and one or the other will have the opportunity to determine whether the project moves forward or not. When it comes to development of alternate energy on the OCS, a resource held in trust by the United States for the benefit of the public, the federal government should have the final word, rather than the state.

33. What are the critical stages (e.g., site evaluation, application, competitive sale) for consultation with affected parties?

Site evaluation requires consultation to identify potential problems as early as possible. Early identification increases options for early and more effective remediation. A developer is better positioned to alter project design or change a proposed project location at the outset of the authorization process rather than several years in. Application also requires consultation so that agencies can begin to make decisions about other permits or certifications what may be necessary for the project. By the time a right or way is actually leased, all of the issues should have been vetted and allowing consultation only increases the change for last- hour requests which can delay the proceedings.

[34] *Id*.

34. Should procedures for consulting with interested and affected parties be codified in the regulations?

Yes. Developers have a need for certainty. At the same time, any procedures or regulations should allow for exceptions for unique or unanticipated situations.

35. What processes can MMS use to provide for balance between consultation and time and burden to the projects?

MMS must implement and adhere to deadlines. A Joint Renewables Office could help coordination and ensure deadlines as could a predetermined schedule. MMS should include opportunities for prompt dispute resolution. Moreover, as a lead agency, MMS must intercede to force other federal and state agencies to act and process authorizations with diligence. To the extent that state and local agencies cite lack of resources as a basis for slower response, MMS should seek appropriations to help state agencies carry out responsibilities under the act.

36. Are the aspects of the new ROW rule issued by BLM that should be reviewed by MMS?

Several features of the BLM rule can inform this rulemaking. These include:[35]

(a) BLM decision to take a programmatic approach to wind development, rather than enabling developers to make decisions about sites entirely on an ad hoc basis.

(b) BLM preparation of wind assessment and programmatic EIS. Programmatic EIS excludes certain environmentally sensitive lands from consideration which will prevent developers from wasting time and resources on unpermittable sites. Programmatic EIS also expedites site-specific development because site-specific documents are "tiered off" the larger EIS.

(c) BLM implemented an interim policy which allowed development to proceed even as it prepared its programmatic EIS. Allowing development to move ahead can help inform the EIS by enabling BLM to learn from other developers' experiences. Also, allowing development to move

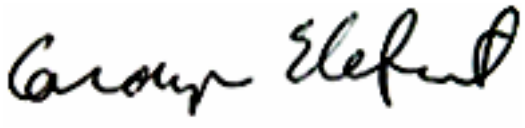
[35] *See* BLM, Federal Wind Policy (included in Appendix list).

forward took some pressure off BLM to act quickly knowing that developers were waiting. It could take its time - in this case, over two years, to issue a well thought out program.

(d) BLM wind policy is part of multi use approach on federal lands, just as alternate energy on OCS will be part of multiple uses of OCS.

(e) Where there is competition between sites, BLM will evaluate best project, not simply send it to the highest bidder.

Respectfully submitted,



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APPENDICES

Appendix I

Legal Precedents and Practices for Leases, Easements and Rights of Way

Section 388 grants MMS the power to issue leases, easements and rights of way. A lease is a contract for exclusive possession of lands for a term of years at will for a specified rent or compensation.[36] At the end of the term, the landowner (which on the OCS, is the United States) has the absolute right to retake, control and use the property.[37] In public land law, a lease is frequently used as a conveyance tool where the lessee extracts or consumes resources from the property leased.[38] Many states also use leases to convey rights to use of submerged lands, *i.e.*, lands below waters up through three miles offshore.[39]

A right of way is:

> The term used to describe a right belong to a party to pass over land of another, but it is also used to describe that strip of land upon which railroad companies construct road, and when, so used, the term refers to the land itself, not the right of passage over it.[40]

BLM issues "rights of way" authorizations for wind projects located on BLM lands.[41]

An easement is the grant by a land owner of an interest in property for a specific use, with the owner retaining legal title to the property on which the easement is located. An easement is often

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[36] Black's Law Dictionary (definition of "lease").

[37] *See* K. Fletcher, *Law & Offshore Aquaculture: A True Hurdle or A Speed Bump?*, Law & Offshore Aquaculture at 30, n.38.

[38] *See, e.g.*, OCSLA, 43 USC § 1341 , authorizing Secretary of Interior to issue leases for oil and gas, mining on OCS; Geothermal Leasing Act 30 USC § 1015 (issuance of leases for geothermal projects on BLM lands); Taylor Grazing Act, 43 USC § 315-316.

[39] See other state land leases.

[40] Black's Law Dictionary.

[41] BLM Wind Energy Development Program [see Appendix].

granted in cases where, for example, a utility requires a right to cross over another landowner's property to make repairs to transmission or sewer lines. Some states also grant easement interests in state submerged lands, or use the term easement interchangeably with leases.

Traditionally, federal agencies authorize power plants through licenses, including NRC licenses for nuclear power plants, FERC licenses for hydroelectric projects[42] or NOAA licenses for OTEC plants.[43] Both FERC and OTEC licenses grant developers an exclusive right of use within the project boundaries set forth in the license,[44] though under the FERC process, a developer must secure property rights needed for operating the project,[45] such as the land on which the project will be sited and any water rights needed for project operation. FERC licensees can secure these rights through negotiating purchase or lease of lands with property owners or if necessary, by eminent domain.[46]

Another potential use of the OCS, aquaculture, is commonly administered by states through leasing of coastal water bottom, and in some instances, the associated water column.[47] Recently proposed legislation regarding aquaculture facilities within the EEZ would authorize NOAA to issue license or permits for aquaculture, rather than leases. [48]

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[42] Federal Power Act, Section 4(e), 16 USC § 797.

[43] OTEC Act, 42 U.S.C. § 9101 *et. seq.*

[44] Cite FERC statute, Section 6 FPA (prohibiting alteration or modification of license)

[45] See § 21, FPA. (allowing licensees to acquire land by eminent domain)

[46] Cite Section 21 of FPA [eminent domain provisions, include parenthetical or quote].

[47] *See* K. Fletcher, *Law & Offshore Aquaculture: A True Hurdle or a Speed Bump?* (2004) at 30 (describing practice of Gulf States of leasing submerged water bottom for aquaculture and noting that leases do not always convey to lessees exclusive control of associated water column).

[48] *See* S.1195 (June 8, 2005)

Appendix 2: Online Resources

EPRI January 2005 Wave Energy Conversion (WEC)Project,

> Available Online: http://www.epri.com/oceanenergy/waveenergy.html (last visited Feb. 27, 2006)

EPRI Ocean Energy Website, Survey and Characterization, Tidal In Stream Energy Conversion Devices, (TISEC) Page 8

> Available online: http://www.epri.com/oceanenergy/attachments/streamenergy/reports/004TISECDeviceReportFinal111005.pdf (last visited Feb. 20, 2006).

California Small Hydropower and Ocean Wave Energy Resources, In Support of the 2005 Integrated Energy Policy Report, Mike Kane (May 9, 2005), available on line at http://www.energy.ca.gov/2005publications/CEC-500-2005-074/CEC-500-2005-074.PDF.

OREC's Ocean Energy Round-up For 2005

> Available Online: http://www.oceanrenewable.com/

Pacific International Center for High Technology Research operates the world's only open cycle OTEC plant

> Available Online: http://www.pichtr.org/Ocean_Thermal_Energy_Conversion.htm (last visited February 15, 2006).

OFFSHORE WIND ENERGY: FULL SPEED AHEAD KROHN, Soren Danish Wind Turbine Manufacturers Association Copenhagen, Denmark

> Available Online: http://www.worldenergy.org/wecgeis/publications/default/tech_papers/17th_congress/3_2_01.asp

Energetech Company Website

> Available Online: http://www.energetech.com.au/ (last visited Feb. 15, 2006).

Energy Angels to Fuel Industry, Deidre Gregg, MSNBC (2/26/06)

> Available Online: http://msnbc.msn.com/id/11586941

CBC News Report: Oil Companies may receive royalty waiver of up to $7 billion, February 14, 2006

Available Online: http://www.cbc.ca.cp/business/060214/b021452.html

NEPA Task Force Council on Environmental Quality

Available Online: http://ceq.eh.doe.gov/ntf/ (site last visited February 23, 2006)

See also NEPA Task Force Council on Environmental Quality, Chapter 3

Available Online: http://ceq.eh.doe.gov/ntf/catreport/ceq_ch3.pdf (site last visited February 23, 2006)

What is the Joint Pipeline Office

Available Online: http://www.jpo.doi.gov/JPO/What_is_JPO.htm (site last visited February 23, 2006)

BLM Wind Energy Development Program, *see http://windeis.anl.gov/ (for all documents)*

BusinessWeek March 6, 2006 "Along Comes Lunar" Adam Astin

Available Online:

http://www.businessweek.com/magazine/content/06_10/b3974056.htm