



## **CRS Report for Congress**

# **Wave, Tidal, and In-Stream Energy Projects: Which Federal Agency Has the Lead?**

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### **Summary**

Developments in wave, tidal, and in-stream energy generation technologies — also referred to as hydrokinetic or marine energy — are beginning to gain momentum. At the same time, their regulatory status is still evolving, as shown by recent changes in law aimed at clarifying the federal role in ocean wave and renewable energy. Two federal agencies currently appear to have a lead role in offshore renewable energy projects.

The Department of the Interior's Minerals Management Service (MMS) indicates that the Energy Policy Act of 2005, § 388, gave it authority as the lead agency for projects proposed on the Outer Continental Shelf (OCS). MMS is developing a regulatory framework and is not accepting applications for hydrokinetic (and other alternative energy) projects until its rulemaking process is complete.

The Federal Energy Regulatory Commission (FERC) has issued preliminary permits and accepted license applications for hydrokinetic projects on the OCS and in the near-shore ocean environment. Also, FERC is developing a licensing process specific to hydrokinetic projects. The issue of which agency has final regulatory authority over hydrokinetic projects that are partially or completely on the OCS is unresolved and may affect project development in this burgeoning industry.

### **Background**

Electric generation projects that are designed to harness the power of waves, tides, or river currents — without a dam or impoundment — are known as hydrokinetic or marine energy projects. While the technology to harness this energy is still in the developmental stage, interest has increased in exploring this potential source of electric power. For example, projects are being considered in a number of states, including Alaska, California, Hawaii, Louisiana, Maine, New York, New Jersey, Oregon, Rhode Island, and Washington. A special temporary license exemption was issued for a prototype tidal energy project in New York's East River, and a Federal Energy Regulatory Commission (FERC) hydropower license, the first for this type of project, is pending for a wave energy project in Washington. As project developers have begun to explore

opportunities in this sector, Congress has introduced legislation to support and regulate this nascent industry.

## **EPACT**

The 109<sup>th</sup> Congress considered legislation related to hydrokinetic power. In particular, the Energy Policy Act of 2005 (EPACT)<sup>1</sup> addresses wave, tidal, and in-stream energy directly or indirectly in a number of ways. EPACT addresses federal jurisdiction over, and development of, alternative energy sources. Title II contains provisions for assessing and reporting on renewable energy resources by the Department of Energy. It also establishes incentives for renewable energy production, specifies benchmarks for renewable energy purchases by federal facilities, and authorizes grants supporting rural electrification, with preference given to renewable energy facilities. Section 931 directs the Secretary of Energy to establish R&D programs for ocean energy, including wave energy, and kinetic hydro projects. Section 388 amends § 8 of the Outer Continental Shelf Lands Act<sup>2</sup> to grant authority to the Secretary of the Interior, through the Minerals Management Service (MMS), to grant leases on the Outer Continental Shelf (OCS) for producing energy from sources other than oil and gas.

## **Legislation**

The 110<sup>th</sup> Congress is considering two omnibus energy bills — H.R. 3221 and H.R. 6 — that include provisions related to ocean and in-stream energy production, though a number of other bills have been introduced that also address the subject.<sup>3</sup> H.R. 3221 would amend the Internal Revenue Code, expanding renewable energy tax credits to wave, tidal, and in-stream power generation facilities. The bill also directs the Secretaries of Commerce and of the Interior to prepare Programmatic Environmental Impact Statements (PEIS) evaluating the impacts of hydrokinetic project installation in United States' waters.

The Senate-passed version of H.R. 6 directly addresses the question of authority to license hydrokinetic projects on the OCS. Section 283(a)(3) clarifies that FERC shall not have the authority to approve or license hydrokinetic projects on the OCS, though it would still have any current authority over the transmission of power from these projects. The bill also authorizes \$50 million annually from FY2008 through FY2017 for an ocean energy R&D program and associated reporting. The R&D program would focus on the development and demonstration of new technologies, the reduction of manufacturing costs, and identification of environmental issues associated with these new technologies. The bill also calls for the creation of one to six national ocean energy research centers.

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<sup>1</sup> P.L. 109-58.

<sup>2</sup> 43 U.S.C. § 1337.

<sup>3</sup> S. 298 would authorize funds to support the development of ocean energy sources. H.R. 2036 would support R&D, authorize low-interest loans, and provide investment and production credits for wave, tidal, and in-stream energy projects. H.R. 2313 would direct the Secretary of Energy to support R&D and demonstration efforts for ocean energy projects and authorize \$50 million of funding for grants to universities to establish ocean energy R&D and demonstration centers.

Authorization of funding for the centers is not specified beyond “such sums as are necessary.”

Both chambers have approved funding for hydrokinetic energy development in FY2008 appropriations bills. Under H.R. 2641, the House has approved \$6 million under the Hydropower account to create a new R&D focus on hydrokinetic generation. The Senate Appropriations Committee has recommended \$8 million for a program focused on hydrokinetic energy technology under S. 1751. Section 931(a)(2)(e) of EPACT includes language authorizing this type of funding.

## Who Has Primary Authority over Hydrokinetic Energy Projects?

In addition to technological and resource uncertainties, one of the principal uncertainties facing hydrokinetic energy developers is that of the primary regulatory agency for their industry. Presently, two federal agencies have asserted a lead role in the oversight of wave, tidal, and in-stream energy projects: FERC and MMS.<sup>4</sup>

**Minerals Management Service (MMS).** The Department of the Interior’s MMS manages the nation’s Outer Continental Shelf (OCS)<sup>5</sup> oil, natural gas, and other mineral resources. The agency is responsible for more than \$8 billion in annual revenues from federal offshore mineral leases (as well as onshore mineral leases on federal and Indian lands). EPACT 2005 granted MMS additional authority to act as the lead federal agency for offshore renewable energy projects. MMS views its primary authorities under EPACT § 388 to be (1) granting leases, easements, and rights-of-way for renewable energy-related uses on federal OCS lands; (2) acting as the lead agency for coordinating the permitting process with other federal agencies; and (3) monitoring and regulating facilities used for renewable energy production and energy support services.<sup>6</sup>

MMS has released a draft PEIS regarding its proposed procedures for granting leases and providing project oversight on the OCS for hydrokinetic energy projects. It anticipates issuing a final rule in the fall of 2008.<sup>7</sup> MMS will not issue decisions on hydrokinetic energy projects until a final rule is established.<sup>8</sup> EPACT § 388 stipulates that MMS authority does not supercede the existing authority of any other agency for hydrokinetic project permitting, so it is possible that a wave or tidal energy project on the

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<sup>4</sup> For more information on broader issues related to hydrokinetic project development, see CRS Report RL33883, *Issues Affecting Tidal, Wave, and In-Stream Generation Projects*, by Nic Lane.

<sup>5</sup> The OCS is composed of the submerged lands, subsoil, and sea bed lying between the seaward extent of the states’ jurisdiction and the seaward extent of federal jurisdiction. Typically, this is the area between 3 and 200 nautical miles.

<sup>6</sup> See [<http://www.mms.gov/offshore/RenewableEnergy/RenewableEnergyAndAlternateUses.pdf>].

<sup>7</sup> See [<http://www.mms.gov/offshore/CIAP/PDFs/Visio-3timelines040207A.pdf>].

<sup>8</sup> See [<http://www.mms.gov/offshore/RenewableEnergy/OCSPolicyCmteMtg022107.pdf>].

OCS may also require a FERC license to operate, although leasing and environmental review would be conducted by MMS.<sup>9</sup>

**Federal Energy Regulatory Commission (FERC).** The Federal Power Act (FPA)<sup>10</sup> authorized FERC to be the agency responsible for licensing almost all nonfederal hydropower projects.<sup>11</sup> There has been no debate about FERC's jurisdiction over hydrokinetic projects in rivers and inland waters, but there may be some question about its authority over these projects in the ocean.

FERC has asserted that its authority includes hydrokinetic projects in the ocean up to 12 miles from shore.<sup>12</sup> FERC supports this statement with citations to the FPA<sup>13</sup> and Presidential Proclamation 5928,<sup>14</sup> which extended the territorial sea,<sup>15</sup> and thus, FERC asserts, its jurisdiction, to 12 nautical miles.

Further, FERC has indicated that project features such as undersea anchors or transmission lines leading to a grid connection on the shore would occupy land under federal jurisdiction, thereby requiring the project to have a FERC license. In addition, FERC has stated that it considers hydrokinetic energy facilities to be "powerhouses" as defined by the FPA licensing provision,<sup>16</sup> and has indicated that it considers wave and tidal projects that connect to the electric grid to be affecting interstate commerce, thus requiring a FERC license.<sup>17</sup>

As of mid-2007, FERC had issued 45 preliminary permits for developers to study hydrokinetic project sites, and 15 more preliminary permit applications are pending approval.<sup>18</sup> A preliminary permit is not a license to construct and operate a project, but rather grants the applicant the right to study an area for suitability of project development prior to a formal license application.

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<sup>9</sup> Personal communication with Ms. Julie Fleming, Legislative Specialist, Minerals Management Service, Washington, DC, January 22, 2007.

<sup>10</sup> 16 U.S.C. § 817(1).

<sup>11</sup> There are limited circumstances when a FERC license, or FERC-granted license exemption, is not required for a hydropower project. For instance, projects operating under a valid congressional permit issued before 1920 would not be subject to FERC jurisdiction.

<sup>12</sup> 102 FERC ¶61,242.

<sup>13</sup> 16 U.S.C. § 796 (8).

<sup>14</sup> 54 *Federal Register* 777, December 27, 1988.

<sup>15</sup> Under international law, every coastal nation has sovereign rights over the air space, water column, sea bed, and anything beneath it, within its territorial sea. In 1988, President Reagan proclaimed that the United States' territorial sea extended 12 nautical miles seaward from the coast.

<sup>16</sup> 16 U.S.C. § 817 (1).

<sup>17</sup> 102 FERC ¶61,242.

<sup>18</sup> See [<http://www.ferc.gov/industries/hydropower/indus-act/hydrokinetics/permits.asp>].

**MMS-FERC Conflict.** In response to FERC’s acceptance of several preliminary permit applications for hydrokinetic energy projects on the OCS off the coasts of California and Oregon, MMS filed formal protests with FERC citing specific points of contention. MMS indicated that it believes FERC jurisdiction does not extend to the OCS for three reasons and requested that the agency reject the application in question and stop processing preliminary permits for similar projects on the OCS.<sup>19</sup> The three reasons MMS cites are as follows:

- FPA-granted jurisdiction for FERC does not explicitly extend on to the OCS. Further, MMS refutes FERC’s claim that Presidential Proclamation 5928 also extends FERC authority to 12 nautical miles. In support of this point, MMS refers to Proclamation language indicating that “Nothing in this Proclamation: (a) extends or otherwise alters existing Federal or State law or any jurisdiction, rights, legal interests, or obligations derived therefrom....”<sup>20</sup>
- MMS stresses that § 388 of EPACT specifically grants it authority for renewable energy projects on the OCS.
- MMS says that FERC’s existing hydropower permitting and licensing process is inappropriate for hydrokinetic energy projects on the OCS because preliminary permits may reserve large areas of potential development to the first applicant rather than to the best applicant. Also, MMS says that a 30- to 50-year FERC license is too long for prototype projects.

At least one preliminary permit applicant in the instance cited above subsequently submitted additional information for its permit application, reconfiguring to a project area located in state waters within three nautical miles of shore, thus avoiding the OCS and any issue of MMS jurisdiction.<sup>21</sup> FERC issued a preliminary permit for the project reflecting the modified footprint of the site provided by the applicant.<sup>22</sup>

FERC has since posted a *Notice of Inquiry* soliciting comments on its preliminary permitting procedure and outlining its interim policy on the issue. The agency has received numerous comments from project proponents, state agencies, and tribal entities. Pending final resolution, it will continue to issue preliminary permits for hydrokinetic projects under a “stricter scrutiny” policy. FERC states that preliminary permits will be

<sup>19</sup> MMS, *Protest of the United States Minerals Management Service*, FERC Docket P-12752-000 (January 30, 2007); MMS, *Protest of the United States Minerals Management Service*, FERC Docket P-12750-000 (February 20, 2007); and MMS, *Protest of the United States Minerals Management Service*, FERC Docket P-12753-000 (March 2, 2007).

<sup>20</sup> 54 *Federal Register* 777, December 27, 1988.

<sup>21</sup> FERC, *AquaEnergy Group, Ltd submits additional information that reduces the project boundary & more accurately represents the footprint of the proposed project under P-12752*, Docket Number P-12752-000 (February 6, 2007).

<sup>22</sup> FERC, *Order issuing preliminary permit re AquaEnergy Group Ltd under P-12752*, Docket Number P-12752-000 (April 26, 2007).

issued with more limited project boundaries and that required project progress reports will be given closer review.<sup>23</sup> Although CRS has found no public FERC response to the MMS protest, it appears that none of the preliminary permits issued since the protest was filed have been for projects that reach onto the OCS.

FERC has developed a modified license for hydrokinetic pilot projects. This process is available immediately for interested parties, though the agency is accepting comments on the process in order to refine it and held a technical conference on October 2, 2007, to seek feedback from stakeholders on the new license. The goal of the hydrokinetic license is to eliminate barriers to development by reducing processing time to as little as six months, allowing installation of test equipment, and allowing power generation to the grid. The license requires that projects have a size of five megawatts or less, be easily removed or deactivated, and be installed for no longer than a five-year term. There are additional provisions for site decommissioning and project changes or equipment removal if unexpected environmental impacts arise.<sup>24</sup>

FERC and MMS are on separate tracks to develop regulatory processes for energy projects in the ocean. However, the issue of ultimate regulatory authority for projects entirely or partially on the OCS remains. The apparent uncertainty over lead regulatory status on the OCS is an important issue that may discourage investors in this developing industry.

Under the current regulatory framework, project owners may be reluctant to develop sites beyond three nautical miles to avoid the possibility of regulatory duplication. The final configuration of each agency's regulatory framework could have a major impact on project-siting decisions. Developers may decide to site projects completely on one side of the three-mile OCS boundary, depending on which regulatory process they deem to be more favorable. This type of approach could distort the industry's development or leave otherwise promising sites undeveloped.

## Questions for Congressional Consideration

- Does Congress need to enact clarifying legislation to resolve the uncertainties over MMS-FERC jurisdiction? To this end, the Senate has passed a provision in its version of H.R. 6 denying FERC the authority to license hydrokinetic projects on the OCS.
- Should the jurisdictional dispute be resolved more simply through a memorandum of understanding (MOU) between MMS and FERC? FERC and MMS have indicated that the agencies have drafted an MOU, however the agreement has not been signed.<sup>25</sup>

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<sup>23</sup> FERC, *Notice of Inquiry*, Docket Number RM07-08-000 (February 15, 2007).

<sup>24</sup> See [<http://www.ferc.gov/industries/hydropower/indus-act/hydrokinetics/energy-pilot.asp>].

<sup>25</sup> S. Hrg. 110-134, *Alternate Energy-Related Uses on the Outer Continental Shelf*, Hearing before the Senate Committee on Energy and Natural Resources, Washington, DC (June 7, 2007).