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BOEMRE, DOE, and NOAA Announce Nearly \$5 Million for Joint Environmental Research Projects to Advance Ocean Renewable Energy

WASHINGTON, DC – The Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE), the Department of Energy (DOE), and the Department of Commerce's National Oceanic and Atmospheric Administration (NOAA) today announced eight joint research awards totaling nearly \$5 million to support the responsible siting and permitting of offshore wind energy facilities and ocean energy generated from waves, tides, currents and thermal gradients. This critical research will address key information gaps regarding the potential environmental effects of renewable ocean energy. This collaborative, interagency effort will help lay the foundation for a clean, renewable offshore energy industry that will diversify our nation's energy mix, enhance our energy security, create American manufacturing jobs, and reduce carbon emissions.

"The nation's oceans represent a major potential source of clean renewable energy, and DOE is committed to developing the innovative technologies that will harness that potential," said U.S. Secretary of Energy Steven Chu. "Our partnership with fellow federal agencies will help to streamline the responsible deployment of offshore renewable energy technologies that will create U.S. jobs while improving America's energy security."

"We are pleased to join with our partners in announcing these important studies that will give us insight into ocean renewable energy development. Opportunities such as these allow us to enhance our knowledge of the nation's oceans, advance the work within the scientific community and take important steps on the path toward energy independence," said BOEMRE Director Michael R. Bromwich.

"There are many new and exciting renewable energy opportunities waiting for us in the ocean," said Commerce Under Secretary for Oceans and Atmosphere and NOAA Administrator Jane Lubchenco. "These grants will help realize that potential by understanding environmental impacts and incorporating appropriate mitigation measures from the outset."

Research funded under each of the program's eight topic areas will help reduce the environmental risks and regulatory uncertainties associated with offshore renewable energy deployment. The competitively-selected, peer-reviewed research projects will identify and address information gaps that currently limit the development and deployment of these promising offshore renewable energy sources. Additionally, the research from these projects will help support the activities of the [National Ocean Council](#) established by President Obama on July 19, 2010.

The projects were solicited through a competitive joint funding process known as a Broad Agency Announcement, with the support of the National Oceanographic Partnership Program. This innovative partnership between BOEMRE, DOE and NOAA creates a common research portfolio that meets key industry and regulatory needs. This significantly magnifies the impact of all three agencies' research funding by eliminating redundancies, supporting complementary work, and sharing the results of research findings.

The following awards have been selected to receive funding:

- **Bayesian Integration for Marine Spatial Planning and Renewable Energy Siting**

Parametrix (Auburn, Washington) will apply advanced probabilistic statistical methods to integrate oceanographic, ecological, human use data, stakeholder input, and cumulative impacts for the purpose of evaluating ocean renewable energy siting proposals. The project team has experience with two such methods that, when integrated, can support the needs of ocean renewable energy planning in the context of coastal and marine spatial planning and beyond.

Approximate Award Amount: \$499,000 (over two years);
Funding Agency: BOEMRE, DOE, NOAA

- **Characterization & Potential Impacts of Noise Producing Construction & Operation Activities on the Outer Continental Shelf**

The Cornell Lab of Ornithology's Bioacoustics Research Program (Ithaca, New York) will measure, characterize and evaluate the influences of construction and operation noises from Offshore Alternative Energy (OAE) activities on seasonally resident and migratory, acoustically active marine vertebrates. The three-year project will also evaluate the influences of construction and operation noises from OAE activities on seasonally resident marine organisms that do not make or use sounds to communicate, find food or avoid predators.

Approximate Award Amount: \$499,000 (over three years);
Funding Agency: BOEMRE, NOAA

- **Developing Environmental Protocols and Modeling Tools to Support Ocean Renewable Energy and Stewardship**

The University of Rhode Island (Kingston, Rhode Island) will develop and test standardized protocols for baseline studies and monitoring for the collection and comparison of scientifically valid and comparable data for specific offshore renewable energy issues. The two year project will also develop a conceptual framework and approach for cumulative environmental impact evaluation of offshore renewable energy development. The project, as part of Rhode Island's ongoing effort to develop a comprehensive coastal and marine spatial plan, will provide agencies with a comprehensive, yet flexible means of assessing the impacts of a broad range of offshore renewable energy resources projects on marine ecosystems and human activities.

Approximate Award Amount: \$745,000 (over two years);
Funding Agency: BOEMRE, DOE, NOAA

- **Evaluating Acoustic Technologies to Monitor Aquatic Organisms at Renewable Sites**

The University of Washington – School of Aquatic and Fishery Scientists (Seattle, Washington) will evaluate the ability of three classes of active acoustic technologies (echo sounders, multibeam sonar, and acoustic camera) to characterize and monitor animal densities and distributions at a proposed hydrokinetic site. In this two year study, the University of Washington and its partners will deploy instrument packages in northern Admiralty Inlet, Washington, the site of the Snohomish Public Utility District's proposed tidal energy demonstration project.

Approximate Award Amount: \$746,000 (over two years);
Funding Agency: DOE, BOEMRE, NOAA

- **Protocols for Baseline Studies and Monitoring for Ocean Renewable Energy**

Pacific Energy Ventures (Portland, Oregon) will build a Protocol Framework for identifying, collecting and comparing environmental data relevant to offshore renewable energy projects. Leading scientists and stakeholders will work together during this two year project to develop and evaluate the protocol, which will outline the criteria and thresholds for collecting data for both baseline and operational monitoring studies for wave, tidal, and offshore wind projects on the U.S. West Coast. This tool will be portable to other regions and marine ecosystems, and will be developed for consistency with related European programs.

Approximate Award Amount: \$499,000 (over two years);
Funding Agency: BOEMRE, DOE, NOAA

- **Renewable Energy Visual Evaluations**

The University of Arkansas Center for Advanced Spatial Technologies (Fayetteville, Arkansas) will develop the Visual Impact Evaluation System for Offshore Renewable Energy. The proposed system will allow a user to design the spatial layout and content of an offshore facility, import and prepare geospatial data that will affect visibility, run a series of sophisticated visual analyses, define atmospheric, lighting and wave conditions and, finally generate one or a series of realistic visualizations from multiple viewpoints. The system will also accept three-dimensional computer models of facilities submitted by project applicants or available from third parties, and will include pre-built models of many facilities. Output during the two year project will be in the form of maps, tabular reports and high-quality rendered images.

Approximate Award Amount: \$497,000 (over three years);
Funding Agency: BOEMRE

- **Sub-Seabed Geologic Carbon Dioxide Sequestration Best Management Practices**

The University of Texas at Austin – Bureau of Economic Geology (Austin, Texas) will use existing knowledge and experience with onshore carbon sequestration monitoring and risk assessment, existing and proposed policy (both domestic and international), and international collaboration with groups already conducting offshore carbon dioxide transport and sequestration to compile information needed to establish best management practices for U.S. offshore geologic sequestration.

Approximate Award Amount: \$497,000 (over three years);
Funding Agency: BOEMRE

- **Technology Roadmap for Cost Effective, Spatial Resource Assessments for Offshore Renewable Energy**

The University of Massachusetts – Marine Renewable Energy Center (Dartmouth, Massachusetts) will develop a technology roadmap for the application of advanced spatial survey technologies, such as buoy-based LIDAR, to the

assessment and post-development monitoring of offshore wind and hydrokinetic renewable energy resources and facilities. The emphasis will be on techniques that provide measurements over space and time. Most of the evaluations during this two year project will use models and existing data to analyze performance, in addition to field tests intended to evaluate specific approaches.

Approximate Award Amount: \$748,000 (over two years);
Funding Agencies: BOEMRE, DOE.

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