Joint Environmental Research Projects to Advance Ocean Renewable Energy

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), USA, have announced eight joint research awards totaling nearly USD5 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 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 the US nation's energy mix, enhance our energy security, create American manufacturing jobs, and reduce carbon emissions.

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 19th July 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 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.
Characterisation & 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, characterise and evaluate the influences of construction and operation noises from Offshore Alternative Energy (OAE) activities on seasonally resident and migratory, acoustically active marine vertebrates during three years.
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 standardised 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.
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 characterise 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.
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 in two years time.
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.
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 US offshore geologic sequestration.

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.

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