

## **BOEM ENVIRONMENTAL STUDIES PROGRAM: Ongoing Studies**

**Region:** Pacific OCS Region

**Planning Area(s):** Oregon/Washington, Northern and Southern California

**Title:** Protocols for Baseline Studies and Monitoring For Ocean Renewable Energy

**BOEM Information Needs to be Addressed:** The final product will provide guidance on a consistent approach to collecting baseline and pre-construction information regarding the human, marine, and coastal environment prior to offshore renewable energy projects. In addition, the study will also provide guidance on the stressors to monitor, and the methodology for monitoring, after offshore renewable energy facility emplacement. The final product will be very useful to the BOEM environmental reviews of proposed and eventual environmental monitoring of actual offshore renewable energy facilities.

**Total BOEM Cost:** \$499,705      **Period of Performance:** FY 2010-2012

**Conducting Organizations:** Pacific Energy Ventures; National Oceanic and Atmospheric Administration, Northwest Fisheries Science Center.

**Principal Investigators:** Justin Klure

**BOEM Contact:** [Dr. Ann Bull](#)

### **Description:**

Background: With the support of the National Oceanographic Partnership Program, this study project (Topic 2) was solicited through a competitive joint funding process known as a Broad Agency Announcement. This innovative partnership between Bureau of Ocean Energy Management, Regulation and Enforcement (BOEM), the Department of Energy (DOE), and the National Oceanic and Atmospheric Administration (NOAA) created a common research portfolio that meets key management 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 BOEM, an agency of the U.S. Department of the Interior, is charged with the responsibility of considering the effects of its actions on the human, marine, and coastal environments. Under the Energy Policy Act of 2005, BOEM is responsible for permitting renewable energy activities on the Outer Continental Shelf (OCS). There are a number of different renewable energy projects and offshore technologies that can capture energy from wind, wave, tidal flow, and/or ocean current. In order to effectively manage coastal and offshore renewable energy projects a significant amount of environmental data needs to be collected in baseline and pre-construction studies, and in operational monitoring. Currently, no standards exist to ensure that data collection methodologies produce

scientifically valid and comparable data. Standard protocols and formats for the collection and comparison of data clearly are needed for offshore renewable energy. In order to ensure that these protocols are accepted by both regulatory agencies and developers alike, and to reduce potential conflicts, it is important that these protocols be developed in a fashion that takes into account input from stakeholders. The primary outcome of this project will be a *Protocol Framework* for identifying, collecting and comparing environmental data relevant to offshore renewable energy projects. The *Protocol Framework* will be developed and evaluated by leading scientists and stakeholders (*i.e.*, regulators, agencies, environmental and non-governmental organizations, ocean users, and industry representatives). The *Protocol Framework* will outline the criteria and thresholds for collecting data for both (1) baseline and (2) operational monitoring studies for wave, tidal, and offshore wind projects with focus on the U.S. West Coast (California Current large marine ecosystem).

**Objectives:** The study objectives are to develop and execute a collaborative process to design a suite of protocols for the collection of data in baseline studies and operational monitoring for offshore renewable energy projects. The project will develop and validate a *Protocol Framework* that will: 1) Identify key environmental issues to guide development and adoption of protocols for collecting baseline and monitoring data for wave, tidal, and offshore wind projects; 2) Be expandable to include protocols for other offshore renewable energy resource technologies, sites, and conditions; and, 3) Be applicable to California Current large marine ecosystem (LME) focus, but also applicable to other LMEs.

**Methods:** The approach consists of four major tasks:

*Task 1: Protocol Framework and Case Studies.* Develop a framework to identify: 1) the key ecological and physical issues present when renewable energy devices and arrays are installed and developed; and 2) standard assessment and monitoring protocols and metrics to address issues in an adaptive management context. In essence, the *Protocol Framework* will identify what gets measured, how it's measured, and how the data sets are compared and analyzed.

*Task 2: Stakeholder Engagement.* Lead and engage stakeholders to: 1) establish a stakeholder advisory team; 2) establish priorities for protocol development; 3) review *Protocol Framework* and protocols; and 4) lead process to adopt *Protocol Framework* and representative protocols.

*Task 3: Final Protocol Recommendations.* Synthesize results of the Protocol Workshop (Task 1.5), incorporating stakeholder comments to produce final draft of *Protocol Frameworks*.

*Task 4: Final Process Recommendations.* Use stakeholder engagement to produce final process recommendations for future adoption of protocols utilizing the *Protocol Framework*.

**Current Status:** The contract to Pacific Energy Ventures was awarded on September 23, 2010 and the post award kick off meeting was held October 21, 2010. The

Intra-agency Agreement from BOEM to NOAA was finalized in November 2010. The DOE is directly funding its Pacific Northwest National Laboratory. Draft deliverables have been produced and reviewed.

**Final Report Due:** September 2012

**Publications:** None at this time.

**Affiliated Websites:** None at this time

**Revised date:** January 18, 2012