

Bureau within the Department of the Interior (DOI)

- Oversees development of nation's energy and mineral resources on the Outer Continental Shelf (OCS)

OCS Lands Act of 1953 as amended, including amendments per Energy Policy Act of 2005

- Renewable energy (leases, easements, ROWs)
- Marine minerals (e.g., sand and gravel)
- Conventional energy (e.g., oil and gas)



Offshore Renewable Energy Technology Examples

Wind



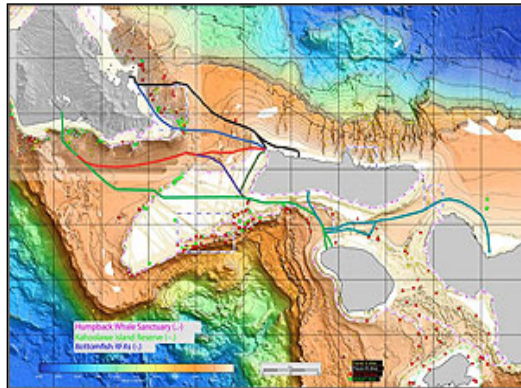
Ocean Current*



Wave*



Transmission



**BOEM is responsible for leasing areas of the OCS for ocean current and wave energy projects and FERC regulates and issues licenses for their operation.*

Environmental Sciences

- Provide information to:
 - *predict, assess and manage effects from offshore energy development, and production activities on...*
 - *human, marine, and coastal environments*



Environmental Analysis

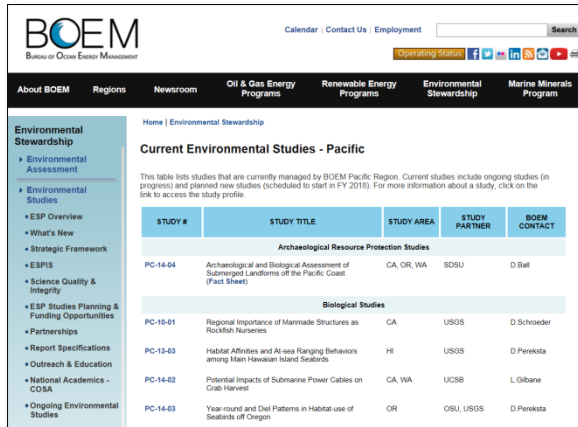
- Develop environmental documents under the National Environmental Policy Act (NEPA)





- **Gather and synthesize existing data**
- **Determine data gaps and update information where needed**
- **Integrate studies across marine ecosystems and human dimensions**
- **New research and ongoing study examples:**
 - Renewable energy scenarios offshore central California
 - Seabird and marine mammal surveys in California
 - Effects of marine renewable energy technologies
 - Potential impacts of submarine power cables on crab harvest

Information Resources – Pacific OCS Region Studies



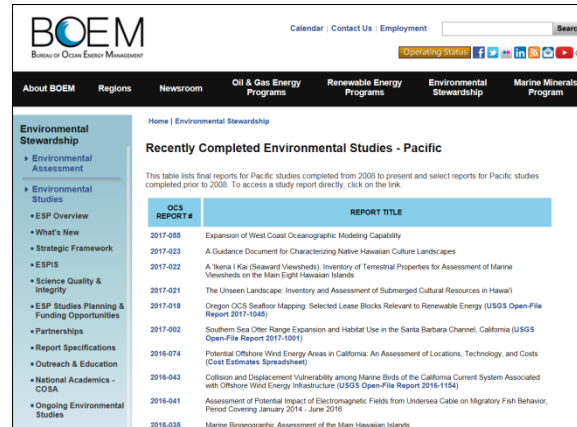
Current Environmental Studies - Pacific

This table lists studies that are currently managed by BOEM Pacific Region. Current studies include ongoing studies (in progress) and planned new studies (scheduled to start in FY 2018). For more information about a study, click on the link to access the study profile.

STUDY #	STUDY TITLE	STUDY AREA	STUDY PARTNER	BOEM CONTACT
Archaeological Resource Protection Studies				
PC-14-04	Archaeological and Biological Assessment of Submerged Landforms off the Pacific Coast (East Street)	CA, OR, WA	SDSU	D Ball
Biological Studies				
PC-16-01	Regional Importance of Mammoth Structures as Rockfish Nurseries	CA	USOS	D Schroeder
PC-13-03	Habitat Activities and At-sea Ranging Behaviors among Main Hawaiian Island Seabirds	HI	USOS	D Perlesta
PC-14-02	Potential Impacts of Submarine Power Cables on Crab Harvest	CA, WA	USCB	L Gilbane
PC-14-03	Year-round and Del Patterns in Habitat use of Seabirds off Oregon	OR	OSU, USOS	D Perlesta

Current Pacific Studies:

www.boem.gov/Pacific-Current-Studies/



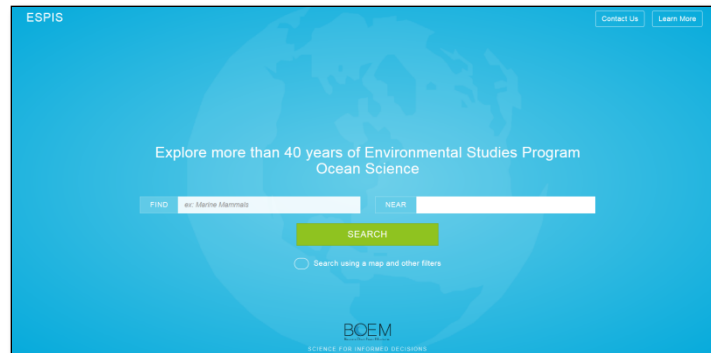
Recently Completed Environmental Studies - Pacific

This table lists first reports for Pacific studies completed from 2008 to present and select reports for Pacific studies completed prior to 2008. To access a study report directly, click on the link.

OCS REPORT #	REPORT TITLE
2017-006	Expansion of West Coast Oceanographic Modeling Capability
2017-023	A Guidance Document for Characterizing Native Hawaiian Culture Landscapes
2017-022	A 'Ikena I Kai (Seaward Viewshed): Inventory of Terrestrial Properties for Assessment of Marine Viewsheds on the Main Eight Hawaiian Islands
2017-021	The Unseen Landscape: Inventory and Assessment of Submerged Cultural Resources in Hawaii
2017-018	Oregon OCS Seafloor Mapping: Selected Lease Blocks Relevant to Renewable Energy (USGS Open-File Report 2017-1044)
2017-002	Southern Sea Otter Range Expansion and Habitat Use in the Santa Barbara Channel, California (USGS Open-File Report 2017-1001)
2016-074	Potential Offshore Wind Energy Areas in California: An Assessment of Locations, Technology, and Costs (Cost Estimates Spreadsheet)
2016-043	Collision and Displacement Vulnerability among Marine Birds of the California Current System Associated with Offshore Wind Energy Infrastructure (USGS Open-File Report 2016-1154)
2016-041	Assessment of Potential Impact of Electromagnetic Fields from Undersea Cable on Migratory Fish Behavior, Period Covering January 2014 - June 2016
2016-028	Marine Biogeographic Assessment of the Main Hawaiian Islands

Recently Completed Pacific Studies:

www.boem.gov/Pacific-Completed-Studies/



ESPIS

Explore more than 40 years of Environmental Studies Program Ocean Science

Find: NEAR:

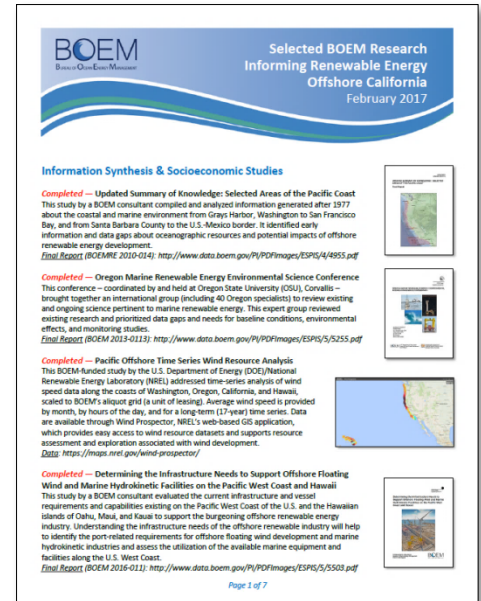
SEARCH

☐ Search using a map and other filters

BOEM
SCIENCE FOR UNCERTAIN DECISIONS

Environmental Studies Program Information System:

www.boem.gov/Environmental-Studies-EnvData/



Selected BOEM Research Informing Renewable Energy Offshore California
February 2017

Information Synthesis & Socioeconomic Studies

Completed — Updated Summary of Knowledge: Selected Areas of the Pacific Coast
This study by a BOEM consultant compiled and analyzed information generated after 1977 about the coastal and marine environment from Grays Harbor, Washington to San Francisco Bay, and from Santa Barbara County to the U.S.-Mexico border. It identified early information and data gaps about oceanographic resources and potential impacts of offshore renewable energy development.
Final Report (BOEMRE 2010-014): <http://www.data.boem.gov/PI/PDFimages/ESPIS/4/4855.pdf>

Completed — Oregon Marine Renewable Energy Environmental Science Conference
This conference — coordinated by and held at Oregon State University (OSU), Corvallis — brought together an international group (including 40 Oregon specialists) to review existing and ongoing science pertinent to marine renewable energy. This expert group reviewed existing research and prioritized data gaps and needs for baseline conditions, environmental effects, and monitoring studies.
Final Report (BOEM 2013-0113): <http://www.data.boem.gov/PI/PDFimages/ESPIS/5/5255.pdf>

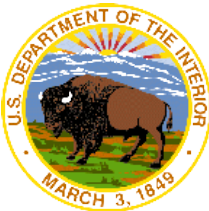
Completed — Pacific Offshore Time Series Wind Resource Analysis
This BOEM-funded study by the U.S. Department of Energy (DOE)/National Renewable Energy Laboratory (NREL) addressed time-series analysis of wind speed data along the coasts of Washington, Oregon, California, and Hawaii, scaled to BOEM's output grid (a unit of leasing). Average wind speed is provided by month, by hours of the day, and for a long-term (17-year) time series. Data are available through Wind Prospector, NREL's web-based GIS application, which provides easy access to wind resource datasets and supports resource assessment and exploration associated with wind development.
Data: <https://maps.nrel.gov/wind-prospecter/>

Completed — Determining the Infrastructure Needs to Support Offshore Floating Wind and Marine Hydrokinetic Facilities on the Pacific West Coast and Hawaii
This study by a BOEM consultant evaluated the current infrastructure and vessel requirements and capabilities existing on the Pacific West Coast of the U.S. and the Hawaiian Islands of Oahu, Maui, and Kauai to support the burgeoning offshore renewable energy industry. Understanding the infrastructure needs of the offshore renewable industry will help to identify the port-related requirements for offshore floating wind development and marine hydrokinetic industries and assess the utilization of the available marine equipment and facilities along the U.S. West Coast.
Final Report (BOEM 2016-011): <http://www.data.boem.gov/PI/PDFimages/ESPIS/5/5303.pdf>

Page 1 of 7

Selected Research Informing Renewable Energy Offshore California:

www.boem.gov/Selected-BOEM-Research-Information-CA/



BOEM issues three types of leases for renewable energy:

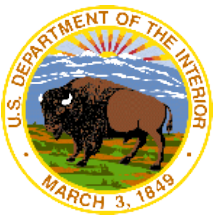
- Commercial leases
- Limited leases
- Research leases

How does someone obtain a lease on the OCS?

1. Submit an unsolicited lease request
2. Respond to a BOEM *Federal Register* notice

How does BOEM issue leases?

1. Non-competitive process
2. Competitive process



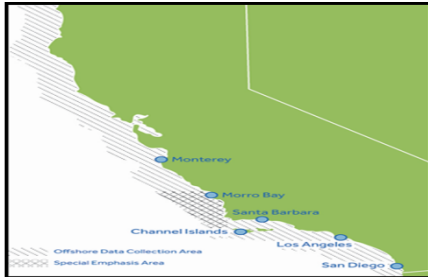
California Leasing Process

- BOEM received an **Unsolicited Lease Request** from Trident Winds LLC
- BOEM published a **Request for Interest (RFI)** and received an expression of competitive interest
- Currently engaged in the Planning and Analysis phase of the Competitive Leasing Process
- Conducted extensive stakeholder outreach effort in partnership with State of California focused on the Central Coast
- Uploaded large number of datasets to the California Offshore Wind Energy Gateway in Data Basin
- Continuing discussions with Department of Defense on military mission compatibility
 - Developers has the opportunity to provide more specific and granular project information to the Department of Defense for a mission compatibility assessment
- Next Steps:
 - Continue outreach offshore California (Northern Coast)
 - Publish a Call for Information and Nominations on areas identified appropriate for leasing



Renewable Energy Leasing Process

Planning and Analysis



Intergovernmental Task Force

Call for Information & Nominations (Call)

Area Identification

Environmental reviews

Leasing



- Publish leasing notices
 - Preliminary
 - Final
- Issue lease(s)

Site Assessment



- Site Characterization
- Site Assessment Plan (SAP) developed by Lessee

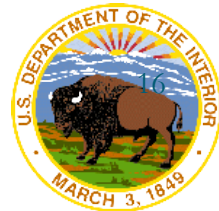
Construction and Operations



- Construction and Operations Plan (COP) reviewed under NEPA
- Facility Design Report & Fabrication and Installation Report
- Decommissioning

Public Input Opportunity

Multi-Year Process





Energy Commission Contact Information

Scott Flint

Program Manager, Energy and Transmission Planning

1516 Ninth Street, MS-17

Sacramento, CA 95814

E-mail: Scott.Flint@energy.ca.gov

Phone: 916-651-3774

Access workshop notices, reports, announcements, and other documents on offshore renewable energy, as well as sign up to receive email updates at:
www.energy.ca.gov/renewables/offshore_energy/

California Activities
<https://www.boem.gov/california/>

Necy Sumait

Chief, Renewable Energy
Bureau of Ocean Energy Management
Pacific OCS Region
Necy.sumait@boem.gov

Jean Thurston

BOEM California Intergovernmental Renewable Energy
Task Force Coordinator
Bureau of Ocean Energy Management
Jean.Thurston@boem.gov

