



Environmental Sciences Pacific Region Overview

**Scientific Committee Meeting
May 22, 2012**

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Preparing for Renewable Energy

The diagram shows a wind turbine with the following specifications:

- Turbine height: 65 m
- Rotor diameter: 82.4 m
- Diameter at water line: 6 m
- Water depths: 120-700 m
- Moorings: 3 lines
- Diam. submerged body: 8.3 m

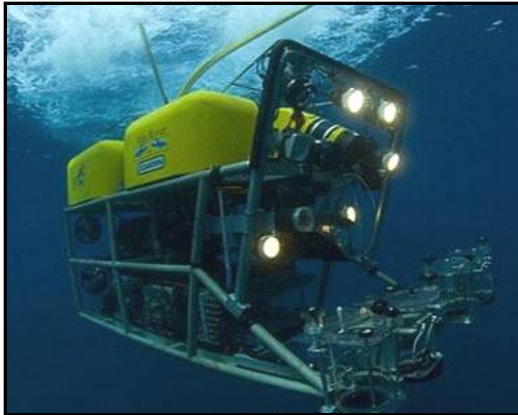
Additional specifications listed:

- Turbine Size: 2.3 MW
- Turbine weight: 138 tons
- Draft hull: 100 m
- Displacement: 5300 m3

The photograph shows a yellow buoy named 'FINAVERA' with solar panels and several small wind turbines mounted on top. The buoy has the text 'AquaBuOY' and 'Division of Commerce 1-888-389-5170' on it.

Supporting and Monitoring Conventional Energy

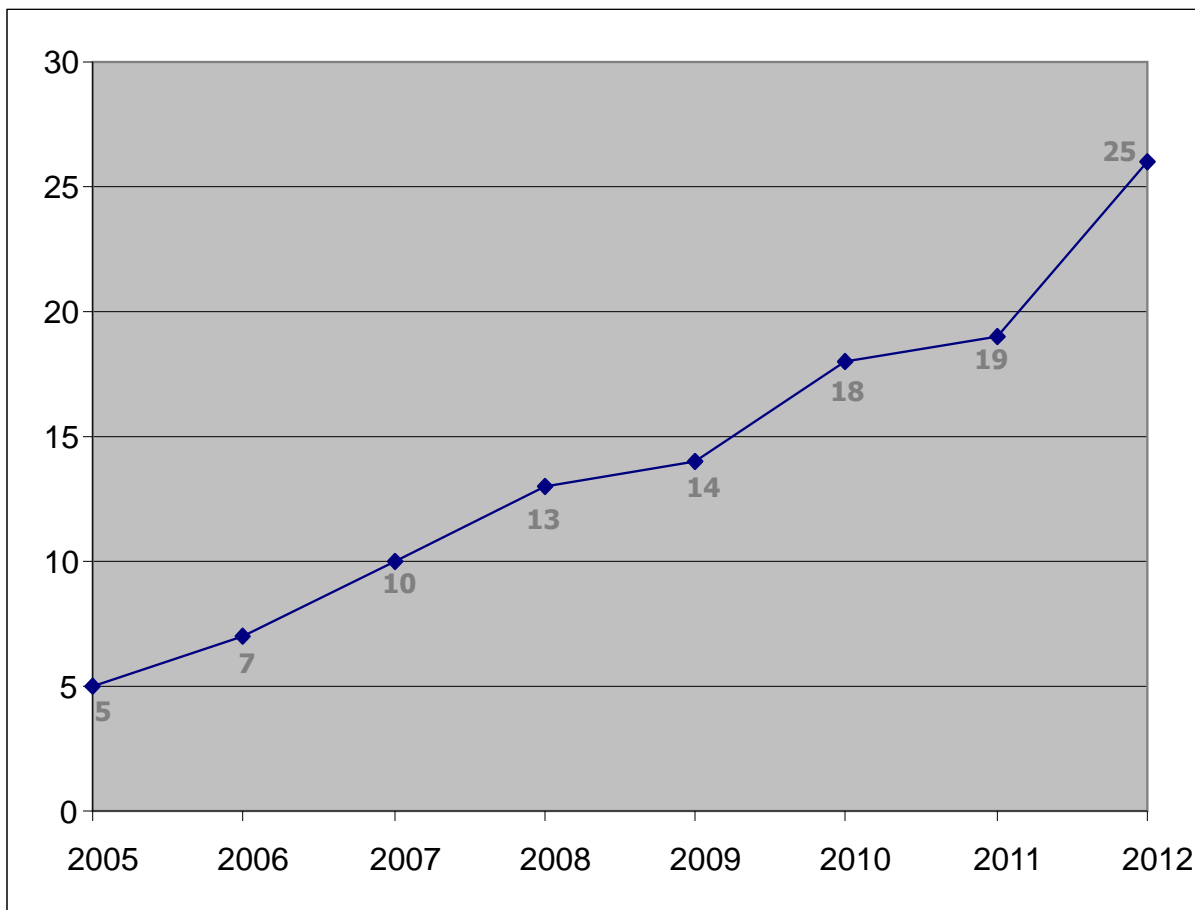




- **1973 – 2012**
- **299 studies completed at nearly \$ 138.5 M**
2 renewable completed
- **25 on-going studies FY 2012 ~\$ 12.9 M**
13 conventional energy ~\$ 4.3 M
12 renewable energy ~\$ 8.6 M
- **9 additional studies proposed for FY 2013 ~\$5 M**
3 conventional ~\$1.4 M
6 renewable ~\$3.6 M



NUMBER
ACTIVE
STUDIES
1st
QUARTER
FISCAL YEAR



YEAR

**Pacific Region Environmental Studies 2005-2013
Comparison of Funding Allocation Conventional vs Renewable Energy**

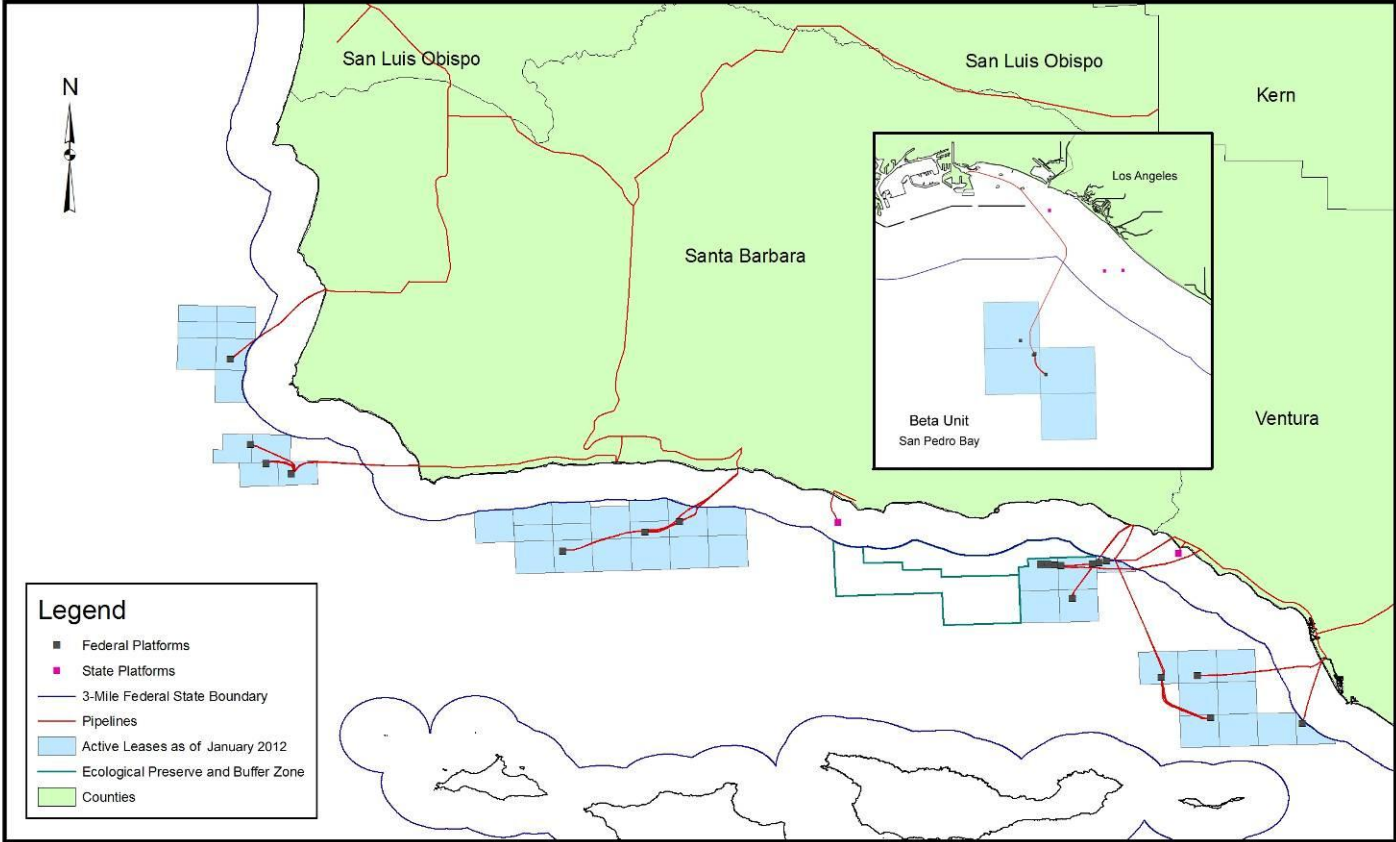
YEAR	Total Pacific Studies Funding Received	Conventional Energy Allocation	Renewable Energy Allocation
2006	\$1.2 M	\$1.2 M – 100%	\$0.00 – 0%
2007	\$1.6 M	\$1.2 M - 75%	\$0.4 M – 25%
2008	\$1.6 M	\$1.2 M – 75%	\$0.4 M – 25%
2009	\$1.7 M	\$1.2 M – 70%	\$0.5 M – 30%
2010	\$6.5 M	\$1.7 M – 27%	\$4.8 M – 73%
2011	\$11.1 M	\$3.2 M – 29%	\$7.9 M – 71%
2012	\$12.9 M	\$4.3 M – 33%	\$8.6 M – 67%
2013 (requested additional)	\$5 M	\$1.4 M - 30%	\$3.6 M – 70%





- Reached out to over 30 external stakeholders for input into the Pacific Region's Studies Development Plan for FY 2013
- Some of the ideas for the Pacific BOEM studies came from stakeholders
- Many of the proposals could result in partnerships





Pacific OCS Region Leases and Facilities



Existing Pacific Offshore Oil & Gas



- **43 producing federal leases**
- **23 platforms in federal waters**
- **Last oil and gas lease sale 1984**



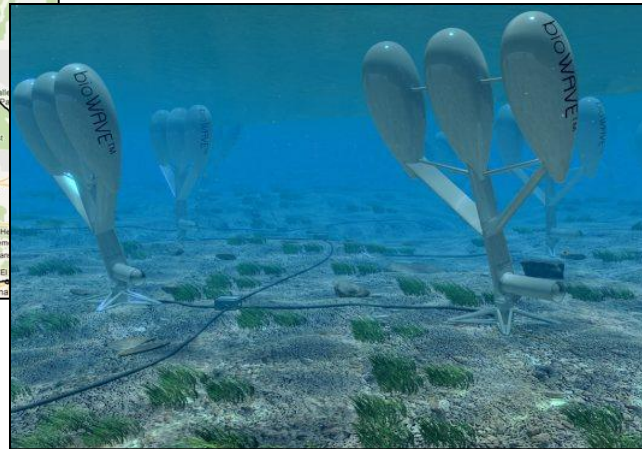


- **Research the role of platforms in the southern California marine ecosystem**
What are the platform impacts on seafloor communities in the southern California planning area?
- **Study oil and gas operations within a regional context**
How do we update the Pacific oceanographic oil spill modeling capability for the OCS platform?
- **Investigate potential impacts from removal or reefing of conventional energy structures**
What is the role of offshore structures in managing potential *Watersipora subtorquata* invasion?

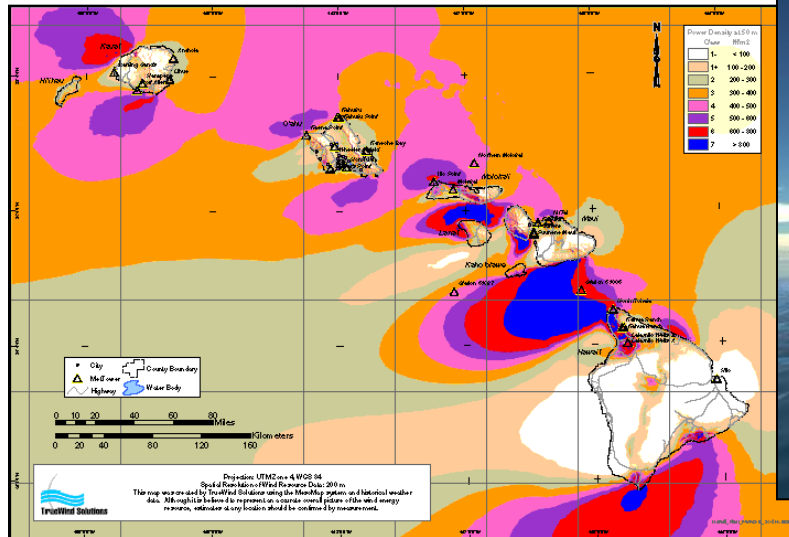
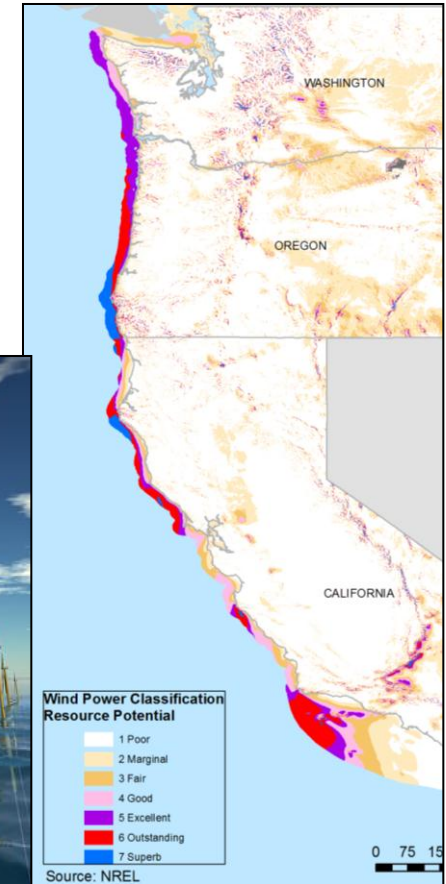




Due to great potential for development of energy from waves via floating or subsea devices BOEM formed the OCS Oregon Renewable Energy Task Force.



Due to great potential for development of energy from winds via floating deepwater turbines BOEM formed the OCS Hawaii Renewable Energy Task Force.





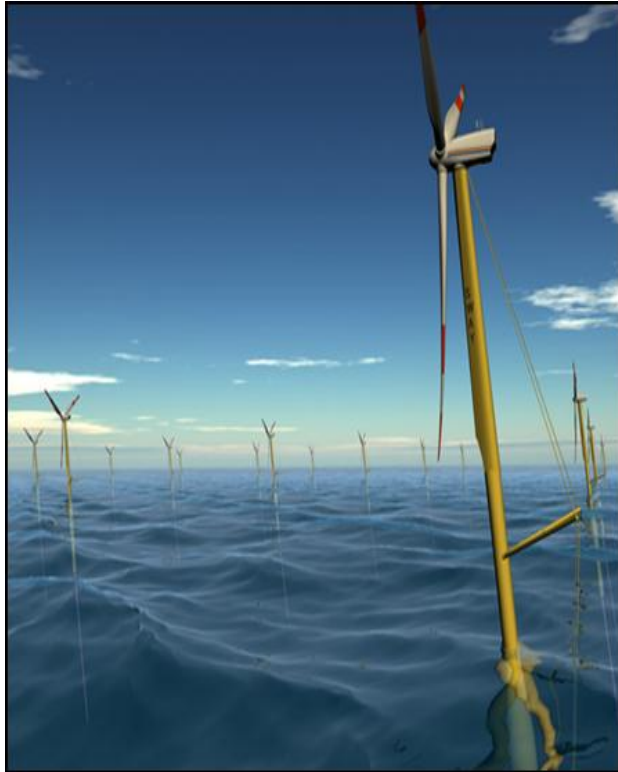
➤ **Expand our area of study for potential siting of projects to encompass the Pacific coast and Hawaii**

What coastal and submerged archaeological sites occur off Hawaii where OCS activity may take place?

Can we synthesize existing data and predictively model marine bird spatial distributions on the west coast OCS?

Can data support a biogeographic assessment of the Main Hawaiian Islands?





➤ **Complete further renewable energy foundational studies**

What existing marine activities can we use to predict potential ecological impacts from marine renewable energy?

What are consequences on nearshore ecosystems of the removal of energy by commercial scale wave energy conversion installations?

What are the habitat affinities and at-sea ranging behaviors among seabirds off Hawaii?



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