



Oregon Coast Wave Energy
Statewide Policy and Planning Assessment
Summary of Comments and Recommendations
February 2008

Prepared by

Therese Hampton on behalf of the Oregon Consensus Program
National Policy Consensus Center, Mark O. Hatfield School of Government
Portland State University

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Executive Summary

Background

In response to increased permitting of wave energy projects on the Oregon Coast, the Governor's Office asked the Oregon Consensus Program (OCP) to identify issues that may impact wave energy planning and policy development in Oregon, and to assess opportunities for collaborative resolution of issues.

Approach

OCP interviewed government agencies, coastal communities, the conservation community, utilities, and the crabbing, fishing, and wave energy industries to identify their views on wave energy development issues, including:

- The pros and cons and major obstacles to wave energy development in Oregon.
- State government's role in balancing ocean use conflicts.
- The role of OPAC (Ocean Policy Advisory Committee), the Wave Energy Trust (OWET) and federal, state and local government in wave energy development.

Key findings

Key issues raised by interviewees included:

- Limited state and community involvement in wave energy siting decisions.
- Conflicting demand for ocean resources for fishing, recreation and wave energy.
- Limitations of the current licensing processes.
- Shared stakeholder interest in responsible development, reduced bureaucracy and win-win approaches for industry.
- Disparate stakeholder knowledge of wave energy technology, limited environmental data, and limited resources for information gathering.
- Relationship and communication barriers between stakeholders.
- Time constraints due to permitting underway and competitive pressure for electric utilities to develop new renewable energy sources quickly.

Recommendations

OCP recommends the following collaborative efforts to support amendments to the *Territorial Sea Plan*, Oregon's comprehensive ocean resource management plan, to address state agency roles in wave energy decisions:

1. Collaboration of federal and state agencies, tribal governments, conservation groups, recreation users, utilities and developers to build a *strategic environmental assessment framework* that will define needed baseline environmental information and provide a predictable approach to environmental assessment of wave energy projects in Oregon.
2. Collaboration between counterpart agencies in Oregon, Washington and California, federal agencies, and the wave energy industry, to develop a strategic

environmental assessment as part of the West Coast Governor's Initiative on Marine Health.

3. Collaboration at the local level to define criteria and a preliminary site assessment for wave energy development on the Oregon Coast that will meet renewable energy development needs while minimizing impact on existing ocean uses.

Oregon Coast Wave Energy Statewide Policy and Planning Assessment *Summary of Comments—February 2008*

Overview and Introduction

Background

Currently four preliminary permits have been issued and four more are pending for wave energy development projects on the Oregon Coast. The permits are being sought by three private developers and three Oregon counties. Ocean Power Technologies has a preliminary permit for a site near Reedsport with a projected installation of ten buoys in spring 2009.

Wave energy development in Oregon is the result of a confluence of events over the last several years: cutting edge research and development by Oregon State University (OSU), need and exploration within the energy sector for new renewable resources, and a recommendation by Oregon InC (an initiative of the Oregon Economic and Community Development Department) of wave energy as a key emerging industry.

In early forums evaluating wave energy, uncertainty about the viability and likely impact of the technology was prevalent. However, in the last year, with FERC license applications filed, engineering drawings becoming available, and test equipment actually deployed, the issues and impacts have been understood by a broader group of stakeholders. As the exposure and discussion of impacts has increased, many questions have arisen about the role for state government in wave energy planning and policy development.

Purpose

In response to those questions, the Governor's Office asked Oregon Consensus Program to conduct an assessment of the issues that may influence statewide planning and policy for wave energy development and the potential for collaborative approaches to resolve those issues. ***“The purpose of the assessment is to identify key unresolved issues, evaluate current forums, and provide recommended approaches for resolution of the issues.*** This effort is intended to both complement and advance current efforts to address industry wide issues; such as Ocean Policy Advisory Council's (OPAC) Wave Energy Working Group and Oregon Sea Grant and Ocean Coastal Zone Management Association's (OCZMA) efforts to assure representation of crabbing and fishing interests.¹”

Approach

A list of potential interviewees was developed to include broad representation from federal and state agencies, coastal communities, the crabbing and fishing industry, utilities, the wave energy development industry, and the conservation community. See Appendix A for a list of interview questions and Appendix B for a full list of interview

¹Letter from Dave Van't Hof, Sustainability Advisor to the Governor, to invited participants in the assessment, April 26, 2007

subjects. The interviews were conducted in spring and summer 2007. Interview responses do not reflect the following subsequent events that may have addressed some issues raised by interviewees:

November 2007: Governor Kulongoski met with the crabbing and fishing community.

November 2007: Oregon Sea Grant assisted in the development of an advisory panel composed of commercial fishermen and crabbers to play a key role in wave energy issues in Tillamook, OR.

December 2007: OPAC wave energy subcommittee developed a proposal for comprehensive environmental analysis.

January 2008: Chip Terhune, Deputy Chief of Staff for Governor Kulongoski, held several meetings on the coast to hear crabbing and fishing industry concerns about wave energy and marine reserves.

January 2008: Governor Kulongoski approved appointment of John Griffith to OPAC.

Summary of Assessment Interviews

A. Key unresolved issues

1. Unclear or unfavorable regulatory structure.

The majority of interviewees view the regulatory process as either unclear or unfavorable. Most are now aware that the Federal Energy Regulatory Commission (FERC) has asserted jurisdiction within state waters, but FERC's role is viewed as unfavorable by many because of the limited ability for the state to have input into siting. For most interviewees, the state process for review and input into the federal process is not clear.

- *Federal regulatory process:* FERC has asserted that it has primary regulatory jurisdiction in state waters from the coast out to three nautical miles. FERC has applied its existing hydro relicensing permit process to new wave energy projects. Some find benefit in using this process, because the process is well-established and familiar. However, many view the use of a federal hydro relicensing process that renders a decision for a 30-50 year license inappropriate in light of the limited information about the impacts of wave energy and the need for further study. Further, there is unresolved disagreement between FERC and the Minerals Management Service (MMS) within the Department of Interior regarding federal jurisdiction over energy facilities located in federal ocean waters beyond three nautical miles. The approval processes and standards that would be applied by each agency are different: the FERC process is structured and prescriptive; whereas the MMS process is not highly defined and relies on collaboration with parties to resolve issues. The lack of clarity about

federal jurisdiction is further complicated by a recent proposal by FERC for an expedited process for a five-year experimental license.

- *State regulatory process:* The key state agencies with regulatory responsibilities have been engaged and are following wave energy developments within the state. For others, the role or responsibility is unclear. In general, Oregon state agencies do not have explicit roles or authority in regulating and approving wave energy facilities. And, because of the FERC preemption of regulatory authority in state waters, it appears that the principal state regulatory threshold for approval of a wave energy facility *per se* is whether a water right can be issued under Oregon Revised Statute 543. If a water right is required, permits need to be filed and a structured process must take place. Despite advice from the Oregon Department of Justice that a water right permit is required, no wave energy developer has filed for a preliminary permit.

⇒ *The issue viewed as most unfavorable is the state's minimal, if not negligible role, in siting decisions. Further, the FERC process is project driven and does not provide for communities or others to provide broad input on where projects would be best located or how many projects are appropriate, except in response to a specific project proposal.*

2. Lack of information about existing use and potential effects

Although human activities and buoys are not new to the ocean environment, little is known about existing natural resources and conditions in the nearshore marine environment where conditions are optimum for wave energy facilities. This lack of information makes it difficult to assess the potential effects of a network of buoys generating electricity. The lack of baseline information about the coastal environment and the challenges of marine study make impacts far more difficult to assess than for land-based facilities. Finally, given the newness of wave energy conversion technology, there are limited national or international examples to draw from.

Numerous potential environmental effects have been identified through stakeholder processes, the Ecological Effects Workshop, assessment wave energy development in Europe and through studies of similar structures in the marine environment. Potential environmental effects include, but are not limited to, marine mammal entanglement, pinniped haul-out, electromagnetic fields, and change in water column habitat that can alter the distribution or aggregation of forage and predator species.

⇒ *Sea floor mapping, resource assemblage and the ability to predict or even assess responses to the wave projects is limited. Given that the requests are for 30-50 year licenses, the lack of information makes it difficult for regulatory agencies to confidently assess the long-term impacts to resources.*

3. Conflicted use of the ocean

The area that will be used for wave energy is currently used by different commercial and recreational fishing interests. Due to the size and proximity of the buoys and the complex mooring systems, wave projects will be designated as no navigation and no fishing areas. Therefore, wave projects reduce the amount of space available for commercial and recreational fishing. These issues are further complicated by current proposals for marine protected areas that may also reduce the amount of space available for commercial and recreational fishing.

In addition, there are many recreational ocean users that may be impacted. There are concerns about direct impacts to surfing or kiteboarding through direct restriction of space or indirect impacts through modification to the wave or ocean environment.

⇒ *All interviewees acknowledge there is conflicted use of the ocean. Placement of wave parks will impact commercial and recreational crabbing and fishing. What is the cost of that impact? Several interviewees believe wave energy will bring great economic benefit to coastal communities. They foresee increased jobs in the wave energy field, including management, maintenance, research, development, training, tourism and education. Others see no direct benefit to coastal communities, just continued economic losses to the crabbing and fishing industry, which is perceived as heavily impacted already by regulations, area closures and market demands.*

B. Impact of maintaining the status quo

Under the current regulatory and collaborative construct, FERC will continue to exercise its jurisdiction within Oregon waters and will process preliminary permits and license applications as they are received. FERC's application review process includes opportunities for public input in the process. However, all input is addressed case-by-case, on a local project basis, only after an application has been received. The structure of the FERC process does not provide for a comprehensive statewide view of the issues. Therefore, the issues identified above would be addressed on a case-by-case basis.

Developers have been encouraged by Oregon's business environment and coastal wave climate, and will likely continue to pursue development of wave energy sites in the state. If local or state regulations or stakeholder opposition is perceived as too burdensome and costly, it is possible that potential applicants will shift initial stage development to other states. However, because of Oregon's wave climate, it is expected that developers will still eventually develop in Oregon, but possibly at a later stage. If initial development is conducted elsewhere, the state would lose the economic benefits from manufacturing, training and tourism associated with leading the development.

C. Shared interests

1. *Renewable resource development*
All interviewees generally recognized the need for additional energy resources and expressed a desire to pursue renewable resources and reduce the carbon footprint of the energy resource portfolio.
2. *Avoid polarization*
Many of the participants have participated directly in or felt the impacts of hydro relicensing issues. They want to avoid polarization of positions, science and information as much as possible.
3. *Reduce bureaucracy and regulatory risk*
For different reasons, all interviewees want a clearly defined regulatory and permitting process. Developers do not want surprises that affect cost and timing. Potentially impacted parties want to ensure their issues are identified early and addressed. Therefore, they seek clear identification of who is responsible and how to engage in a process.
4. *Responsible implementation*
All interviewees are interested in responsible development of the industry. Developers want to be responsible and minimize environmental impacts. Similarly, the coastal communities, regulatory agencies, conservation interests, and other ocean users want to ensure wave projects do not have a negative and irreparable impact on the ocean environment.
5. *Win-win for industries*
Neither the crabbing and fishing nor the wave energy industry wants the other to be unsuccessful; they just do not want development to come at the expense of their own industry.

D. Barriers and Obstacles to Addressing the Identified Issues and Concerns

1. *Substantive barriers*
 - *Disparate knowledge of process in the state.* Some interviewees are very familiar with the issues and the process while some have just become exposed to the issues. There is a lot to learn about the technologies and the processes in order to adequately address concerns.
 - *Lack of Information.* There is limited information about the nearshore marine environment of those areas of the Oregon coast that are of interest to wave energy developers. Further, there is limited information from wave projects elsewhere in the world regarding *potential impacts* of wave energy projects.
 - *Lack of Federal and State Agency Resources.* Federal and state agencies do not feel they have sufficient resources to address the complex and time-consuming work of planning for and managing a new ocean use such as wave energy development. The time commitment required to sufficiently learn and address an emerging technology, coordinate among all parties to

identify and address issues, and engage stakeholders is greater than current agency resources can provide.

- *Difference in opinion about the pace of development and implementation.* Regulatory agencies, conservation groups, and the crabbing and fishing community would like to see the process slow down. Many would like to see early development take the form of test projects that provide data about impacts. Developers and the utility community share an interest in learning from early installation, but do not want development to be slowed considerably.
- *Difference of opinion about who should fund information needs.* To overcome the challenges of limited information and resources, additional money will need to be spent on studies and staff. Developers do not feel it is their responsibility to pay for staffing or for information about the existing marine environment. In some cases, utilities have paid the costs for agency staff and studies involved in the hydro relicensing process.

2. Legal and technical barriers

Limited influence on federal process. As stated previously, it appears based on current interpretation of federal law that there is a limited role for the state in the federal siting process.

3. Relationship and communication barriers

- *Fishing and crabbing industry does not feel heard.* The fishing and crabbing industry expressed concern about its ability to have a voice in the FERC-driven licensing process or in a statewide planning process. The industry's history with marine reserves and its perception that the industry was invited late into the wave energy discussion appear to support this concern.
- *History of FERC process.* Many individuals, NGOs, and agencies have spent years in very difficult and adversarial FERC relicensing proceedings with utilities. There is concern by some parties that the process for wave energy projects could be the same.
- *Context of ocean use/bigger than just this issue.* Despite a strong interest in separating wave energy from other ocean use issues, some view the impacts of wave energy in the context of recent negative events in the crabbing and fishing industry, including the buyout of the salmon fleet, implementation of crab pot limits, the shutdown of salmon fishing, and the potential imposition of marine reserves. All of these issues have had a negative impact on the crabbing and fishing industry and are the backdrop for wave energy development.

4. Process Barriers

- *Difficulty in representation.* Finding consistent and appropriate representation for the crabbing and fishing community is difficult. As independent business people, they are accustomed to representing themselves and not having others speak for them. The commodity

commissions provide a good place for coordination; however, they are not necessarily set up to act as representatives on emerging issues like wave energy.

- *FERC process underway.* Although many may want more time to develop a comprehensive plan for ocean use, the FERC process is underway and allows anybody to file a preliminary permit or a license application. Once the permit or license applications are filed, a defined review process begins and all parties, including state agencies, need to respond. This defined review process could distract parties from any collaborative efforts.
- *Time pressure.* There is great economic pressure on the electric utilities to quickly find and develop new renewable energy technologies. They do not want to develop in haste, but feel the pressure to find new renewable resources soon. Utilities must secure new resources to meet the growing demand for electricity. In addition, Renewable Portfolio Standards in Washington, Oregon and California have intensified the demand and competition for renewable resources. Wind has proven to be a viable renewable resource; however, increasing costs, limited availability, and the unpredictable nature of wind energy make it a difficult resource to integrate into the system. For this reason, utilities are anxious to find other sources of renewable energy to meet demand and state standards.

Ideas and Suggestions from Interviewees

There were many suggestions and recommendations made by the parties interviewed. The ideas are categorized by the key issues they are designed to address.

Unclear or unfavorable regulatory structure.

- Assign a single point of contact within the Governor's Office for wave energy issues.
- Establish a temporary wave energy project office within state government for wave energy issues.
 - Single point of contact for developers for initiation of the state permitting process.
 - Coordinate state input on federal regulatory process.
 - Coordinate and support education efforts.
- Establish a position to deal with conflicts between wave energy and the crabbing and fishing industry. This position is recommended based on a model used in California to coordinate commercial fishing issues with oil platforms.
- Provide all wave energy projects with an Oregon Solutions process.
- Develop a comprehensive management plan to provide state input into the federal process (see conflicted use ideas below).
- Establish a process to designate "shovel ready" wave energy sites similar to "shovel-ready industrial sites."
- Implement incentive programs for early project developers.

- Create incentives and rewards for early investors or adopters. For instance, provide priority access to sites for participants in test sites or collaborative efforts.

Lack of information about existing use and potential environmental effects

- Adopt an approach to test sites that provides early data to inform broader development.
 - Work with early developers to phase projects and share information prior to broad scale development.
 - Develop a state-sponsored test site that could evaluate multiple issues or technologies.
- Develop a strategic environmental assessment or programmatic Environmental Impact Statement for the Oregon Coast.
 - Provide state-led review and assessment of broad issues such as marine mammal impacts, electro-magnetic fields (EMF), and alteration of seabed habitat.
 - Engage, where appropriate, the involvement of the governance structure and science panel from the West Coast Governors' Agreement on Ocean Health.
- Assure science is developed in a credible manner.
 - Provide peer-reviewed and independent science similar to the Northwest Power and Conservation Council's Independent Scientific Advisory Board or Oregon's Independent Multidisciplinary Science Team for coastal Coho.
 - Provide open access to all study results from early (if not all) post-implementation studies.
- State government provided funding for additional agency staff to develop expertise on wave energy issues.

Conflicted use of the ocean

- Develop a comprehensive plan for wave energy that could be used to influence federal decision making.
 - Establish a limit on percent of ocean dedicated to wave energy.
 - Establish comprehensive ocean zoning.
 - Establish principles and policies on wave energy development through the Ocean Policy Advisory Council (OPAC).
 - Establish a collaborative process to amend the Territorial Sea Plan to include a Comprehensive Plan for wave energy.
 - Engage good local community leaders in identifying solutions to conflicted use.
- Designate wave energy projects as marine reserves.
- Provide a state sponsored effort to evaluate the economic impacts to commercial and recreational crabbing and fishing.
- Develop and implement broad education and distribution of information about wave energy:

- Energy demand forecasts, renewable resource requirements, and renewable resource development needs.
- Various wave energy technologies under development.
- Current permits filed and issued on the coast.
- Federal and state permitting process and opportunity for public input.
- Prospective and after-the-fact study results regarding project effects.
- Use Oregon Sea Grant as a primary entity for disseminating information to the coastal communities.

Oregon Consensus Program Recommendations

Not all of the issues or barriers lend themselves to a collaborative solution. Further, not all of the ideas and suggestions generated through the interviews fall under the expertise of Oregon Consensus Program (OCP) to make recommendations. For instance, there are recommendations related to policy, financial incentives, and staffing that are the responsibility of the state and not an area for OCP recommendation. The recommendations below identify three areas where collaborative efforts convened and managed by a neutral entity could yield positive results.

COMPREHENSIVE MANAGEMENT PLAN

FERC has indicated that in order to have greater influence in the licensing process, interests of the state must be captured in a comprehensive management plan in order to be considered. The Territorial Sea Plan serves as Oregon's comprehensive management plan for ocean resources. Therefore, the following recommended collaborative efforts are designed to support Department of Land Conservation and Development (DLCD) efforts to amend the Territorial Sea Plan to address state agency decision making relative to wave energy.

1. ***Strategic statewide environmental assessment.*** *A collaborative effort to define needed baseline information and environmental assessment of key issues will ensure information needs are met and will expedite project review.*

A collaborative effort to develop the needed environmental data is recommended because it will provide for efficient and consistent collection and funding of information. Further, it will help prevent future conflicts between developers and agencies due to perceived inconsistencies. Without a collaborative effort, environmental baseline and assessment data would be developed and gathered on a project-by-project basis. Although there would be attempts for consistency, it could not be guaranteed.

Proposed elements of the collaborative process

- Develop a collaborative effort that is co-sponsored by key regulatory federal and state regulatory agencies but includes all relevant federal agencies, state

agencies, tribal governments, conservation groups, recreation users, utilities and developers.

- Conduct the collaborative process in a neutral forum with neutral process support.
- The purpose of the group is to develop a **strategic environmental assessment framework** that will leverage existing expertise, efficiently build new expertise, and provide a predictable approach to environmental review of projects within the state. The framework will include:
 - Agreement on **what** information is needed:
 - Baseline: What information is needed regarding the marine habitat prior to installation of any wave projects?
 - Key effects assessment: What are the key potential effects and what information can be gathered to inform decision making?
 - Post-installation: What potential effects should be monitored after installation?
 - Agreement on **how** it needs to be studied:
 - Identify whether the baseline, key effects assessments, and post-installation studies are most efficiently and successfully conducted on a coast-wide basis or on a per project basis.
 - Evaluate methods for studies conducted on a project specific basis to be applied coast wide.
 - Evaluate the different sources of **funding**.

2. **West Coast Strategic Environmental Assessment.** *Environmental assessment for wave energy as part of the West Coast Governor's Initiative on Marine Health.*

This recommendation is similar to recommendation one, but would apply to the entire West Coast. Many of the potential environmental effects being contemplated may have impact outside of Oregon. Further, as each state contemplates these issues for their coast, there is efficiency in using the same technical experts and approaches.

Proposed elements of the collaborative process

Develop a collaborative effort that is sponsored by the three governors to address those issues that are most appropriately engaged on a regional basis.

3. **Community Based Site Assessment.** *A collaborative effort focused at the local level to define and apply criteria to identify sites that are most desirable for wave energy could minimize some of the impact of conflicted uses without resorting to heavy regulatory process.*

The limited information about marine conditions and impacts associated with wave energy makes a comprehensive approach to ocean uses difficult. To successfully implement a comprehensive approach will require years of data collection. In the meantime, permits will be filed with FERC and projects will be developed on a case-by-case basis.

Some have recommended placing a limit or moratorium on new wave energy projects to slow development while data is gathered and ocean use issues are resolved. FERC has indicated it does not recognize caps or limits. Further, a limit may create unintended consequences of either stopping development or initiating site banking for any perceived remaining areas.

OCP recommends an effort that is intended to move the issue of ocean use incrementally forward while recognizing the lack of complete information. OCP recommends a collaborative effort that relies on local communities in coordination with the utility and development community to identify criteria for preferred development sites.

Proposed elements of the collaborative process

- Develop a collaborative effort sponsored by DLCD that includes coastal communities, crabbing and fishing industry, conservation groups, recreation users, utility industry, developers, and state and federal regulatory agencies.
- The purpose of the group is to develop **siting criteria and a preliminary site assessment** for wave energy development on the Oregon Coast that will meet renewable energy development needs while minimizing impact to existing uses.
 - a. For this process to be successful, the expertise and interests of the local coastal communities must be used.
 - b. It is recommended that local ports and communities be given the leadership responsibility to collaborate and identify areas that have the best potential for development.
 - c. Provide a coordinating entity (OPAC?) to maintain a statewide view and consistency among the local ports and communities.
 - d. Engage input of developers and the utility community to understand key needs and key cost factors.
 - e. Memorialize the recommendation in a comprehensive statewide planning document.
 - f. Recognize the broader context of other ocean uses under consideration, such as marine reserves, but do not require all the issues to be settled at once.
- Provide neutral process support to DLCD, any coordinating entities, and any local groups that are involved.
- Neutral process support would be most effective if located within the coastal community.

Potential of Existing Forums

Ocean Policy Advisory Council (OPAC)

OPAC was originally created in 1991 to give coordinated policy advice to the Governor, state agencies, and others and to prepare a plan for Oregon's Territorial Sea. Membership and other aspects of the OPAC were changed in 2003 by the Oregon Legislature, but their purpose of providing coordinated policy advice on ocean issues remains. OPAC members include voting members appointed by the Governor that represent ocean users, local governments, and other interested parties, as well as seven state agencies, Oregon Sea Grant, and other non-voting members.

The Ocean Policy Advisory Council has no authority to directly regulate ocean activities or manage resources or to enforce its plans or policies. However, once its plans and policies are approved by the Land Conservation and Development Commission as a part of Oregon's Coastal Management Program, the various state agencies are required to carry them out or act consistently with them.

Some interviewees feel that the issues related to wave energy and conflicted use of the ocean fall squarely into the purpose and intent of OPAC. Most interviewees recognize that OPAC represents the broad diversity on coastal issues. However, there is a consistency of opinion that OPAC has struggled to move through the diversity of thought and opinion and develop meaningful policy or input. Some interviewees feel this struggle is due to limited resources or lack of facilitation, others suggest that OPAC just needs the will and the determination to work through the differences to find common ground. All interviewees agree that OPAC is a good forum to review and advise on draft recommendations or policy. Only a limited number of interviewees have confidence that OPAC could successfully craft or develop recommendations or policy.

Oregon Wave Energy Trust (OWET)

OWET is a newly formed non-profit organization charged with implementing the Oregon Wave Energy Initiative, a plan developed and sponsored by the Oregon Innovation Council (Oregon InC). OWET's specific mission is to build and share the expertise needed to support and accelerate the development of Oregon's wave energy industry in a responsible manner. OWET received \$4.2 million in funds from the legislature for use in research and development, education, streamlining regulatory process, and developing the data contributing to a statewide environmental assessment.

Very few interviewees have familiarity with OWET. Most may have heard the name, but are unclear of the role and purpose of the organization. Those that are aware want to ensure that there is balance and all issues are represented. Some are quite excited about the role they could play in providing resources to address key critical uncertainties.

Oregon Sea Grant

Oregon Sea Grant, founded in 1968 and based at Oregon State University, supports research, education and public outreach to help people understand, responsibly use, and conserve ocean and coastal resources. They are part of a national network of Sea Grant

College Programs, organized under the National Oceanic and Atmospheric Administration in collaboration with major universities and in partnership with hundreds of public and private marine enterprises.

There is broad trust and respect for the Oregon Sea Grant organization. Many interviewees, specifically from the coastal communities, asked that Sea Grant be used to provide broad information about the regulatory process, about current projects and about new information that we learn about projects after installation.

Appendix A

The following questions were sent to interviewees in advance of the interview. These questions were used to initiate discussion, but the interviews also openly explored alternatives and ideas to address issues.

Assessment Questions for Statewide Issues Ocean Energy

Please tell me about your involvement in the planning, permitting, and/or development of proposed ocean energy in Oregon.

What do you think are the benefits of the development of ocean energy in the State of Oregon?

What do you think are the drawbacks of the development of ocean energy in the State of Oregon?

How should the State balance the potential conflicts that exist between the proposed ocean energy projects and the traditional uses such as fishing and crabbing?

What do you think the State has to offer the ocean energy industry?

Should the State prioritize the development of Ocean Energy to support the potential benefits of this emerging industry?

What do you see as the key barriers to development of ocean energy in the State of Oregon?

What issues or concerns do you think might be best addressed on a coastal wide-basis instead of project by project?

Could you rank those issues in terms of importance or perceived potential to impede development of ocean energy on the Oregon Coast?

Do you have a regulatory responsibility? If so, please describe your responsibilities with respect to the FERC or MMS licensing process for ocean Energy projects.

Given the role of FERC in licensing, what do you think is the appropriate role for state and local government in a.) planning b.) permitting c.) siting?

What do you know about OPAC (Ocean Policy Advisory Committee)? What role do you think OPAC could serve to support state planning?

What do you know about Oregon Wave Energy Trust (OWET)? What role do you think OWET could serve to support state planning?

Are there issues that you see as the primary responsibility of the state government?

Are there issues that you see as the primary responsibility of the local government?

If advisory panels were created, who would be the appropriate representatives?

Appendix B

**Statewide Assessment
Wave Energy
Interview List**

Federal Agencies	
NOAA Fisheries	Cathy Tortorici
FERC	Jim Hastrieter
MMS	Maurice Hill
State Agencies	
DSL	Louise Solliday
DLCD	Bob Bailey
DEQ	written input
DOE	Diana Entright and Justin Klure
State Parks	Tim Wood
Water Resource Department	Mary Grainey
ODFW	Clair Kunkel, Rick Keppler, Ken Homolka, Cristen Don
Local Governments	
Lincoln County	Terry Thompson
City of Newport	Alan O'Neil
City of Reedsport	Rick Hohnbaum
City of Tillamook	Mark Gervasi
Port of Umpqua	Keithy Tymchuk and
Elected Officials	
Smith Office	Terri Moffett
	Ron Kresky
Wyden's office	Juine Chada
Crab/Fish Industry	
Salmon Commission	Darus Peake
Albacore Commission	Jerry Bates
Trawl Commission	Brad Pettinger
OCZMA	Onno Husing
OFCC	Scott McMullen
Hallmark Industries	Jack Emmons
Oregon Sea Grant/FINE group	Kaety Hildenbrand

Developers/Energy Industry	
OPT	Steve Kopf
Finavera	Kevin Banister
Pelamis (formerly OPD)	Des McGinnis
PNGC Power	Kevin Watkins
PGE	Jim Lobdell
OSU	Gail Achterman
BPA	Anne Morrow
SAIC	Rick Williams
EPRI	Roger Bedard
Conservation Community	
Oregon Shores/OPAC	Robin Hartmann
Oregon Environmental Council	Sallie Schullinger-Krause
Audobon Society	Paul Englemeyer
Surfrider	Pete Stauffer
Oregon Ocean	Carolyn Waldron

Also contacted for interviews but unable to schedule: USFWS, Tillamook County, Port of Coos Bay, Douglas County, City of Depoe Bay, Port of Tillamook Bay, Coquille Tribe, Confederated Tribe of Coos, Lower Umpqua and Siuslaw, Coastal Caucus, Crab Commission, Oregon Renewable Energy Coalition