

ORIGINAL

Grays Harbor Ocean Energy Company

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March 11, 2008

The Secretary
 Federal Energy Regulatory Commission
 Mail Code: DHAC, PJ- 12.2
 888 First Street, N.E.
 Washington, DC 20426

 FEDERAL ENERGY
 REGULATORY COMMISSION

Subject: Revision of Preliminary Permit Application
 Grays Harbor Ocean Energy Project, **FERC P-13058**

Dear Ms Salas:

Enclosed for filing, please find an original and eight (8) copies of Grays Harbor Ocean Energy Company LLC's Revised Application for a Preliminary Permit for the Grays Harbor Ocean Energy Project. The original application was filed under the name of Washington Wave Company LLC, which has officially changed its name as of January 2008.

This Revised Application responds to FERC comments dated January 31, 2008. The Revisions include:

- Wind energy generation information has been removed and the application now only encompasses renewable energy generation from waves;
- The location of wave energy converters has changed and is now centralized;
- Transmission information is included;
- The type of wave energy converter is specified;
- The project benefit of coastal erosion reduction has been removed as it is no longer relevant;
- The name of the Washington Wave Company has been changed to the Grays Harbor Ocean Energy Company (documentation attached);
- Additional company details are provided.

In the FERC letter of January 31, a page 6 is included that asks 6 questions. However, these are all addressed to another unrelated company and application for Hydro Green Energy. Nonetheless we respond to the questions as follows:

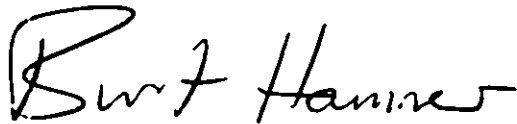
- Attached: Business registration and status of good standing.
- The Company has relationships with many profit and non-profit organizations, most of which are not fundamentally relevant to this application. Business partners for the project are described in the application.
- The Company has no other projects proposed to FERC.
- The Company will raise funds as outlined in this application.

We are looking forward to initiating the evaluations, studies, and initial permitting process discussed in the application.

A website about the project has been created at www.graysharboroceanenergy.com.

If you have any questions, please contact me at (206) 491-0945 or info@graysharboroceanenergy.com

Thank you for your consideration of this application.

A handwritten signature in black ink that reads "W. Burton Hamner". The signature is written in a cursive style with a large initial "W" and "H".

W. Burton Hamner
President
Grays Harbor Ocean Energy Company

**BEFORE THE UNITED STATES
FEDERAL ENERGY REGULATORY COMMISSION**

REVISED APPLICATION FOR PRELIMINARY PERMIT

**Grays Harbor Ocean Energy and Coastal Protection Project
FERC No. P-13058**

Grays Harbor Ocean Energy Company, LLC.

5534 30th Ave NE, Seattle, WA 98105

Originally filed October 28, 2007

Revision filed March 12, 2008

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**REVISED PRELIMINARY PERMIT APPLICATION FOR THE
GRAYS HARBOR OCEAN ENERGY PROJECT**

A. Initial Statement

1. Statement of Application

Grays Harbor Ocean Energy Company, LLC (“the Company”) applies to the Federal Energy Regulatory Commission to revise its original preliminary permit application for the proposed Grays Harbor Ocean Energy (“the Project”), as described in the attached exhibits. The original application was made under the name of Washington Wave Company LLC. The company name has changed to Grays Harbor Ocean Energy Company LLC as attested by the attached documents of the State of Washington.

This application is made in order that the applicant may secure and maintain priority of application for a license for the project under Part I of the Federal Power Act while obtaining the data and performing the acts required to determine the feasibility of the project and to support an application for a license.

The Project will serve several important purposes:

- Generation of clean renewable energy from ocean waves;
- Testing of offshore wave technologies for reliable power production;
- Enhancement of local fisheries productivity by making wave device foundations into artificial reefs;
- Creation of jobs and contribution to sustainable local economies.

The Project’s renewable power production goal is 6 MW peak and 4 MW average. This will be produced by 12 wave energy converters of 500 kW output each.

The Project will proceed in phases in close consultation with affected stakeholders. Following the preliminary permit the Company will apply under the new FERC pilot project licensing rule for a 5 year, 5 MW permit allowing installation of one turbine and several wave energy converters. During this period the Company will work with stakeholders to develop the plans, engineering, environmental studies and permits for full project development. The Company will also work with the US Department of Energy on wind and wave energy and offshore foundation technology development, and with the US Army Corps of Engineers on methods and technologies for integrating renewable energy generation into coastal protection projects. After the 5-year pilot project terminates the Company will apply for a full 50-year FERC license.

The Project may also expand further out to sea, beyond the three mile limit and FERC jurisdiction, and would thus be subject to licensing requirements of the US Minerals Management Service. The expansion would enable installation of floating deep-water wind turbines which are now under study by the Department of Energy and others.

2. Project Location

The project will be located in the Pacific Ocean in Grays Harbor County, Washington, west of the towns of Ocean Shores and Westport. The site is situated within the state boundary (thus solely in FERC's jurisdiction) in the open ocean from 0.1 to 3 miles from shore in water depths that range from 0 to 70 feet.

The approximate dimensions of the proposed sites are 3 miles east-west by 2 miles north-south.

There are two wave energy generation structures proposed, north and south of the Grays Harbor entrance. The power transmission cable from each structure will follow an easterly course to substations at Ocean Shores and Westport. The final cable route will be determined based on site-specific information. The transmission cable will then feed into the regional grid managed by the Grays Harbor Public Utility District. Transmission will continue to the Tacoma / Seattle metropolitan load centers.

The project area has the following coordinates:

Ocean Shores site

ID	Latitude	Longitude
NW	47° 04' N	124° 14' W
NE	47° 04' N	124° 10' W
SW	47° 01' N	124° 14' W
SE	47° 01' N	124° 10' W

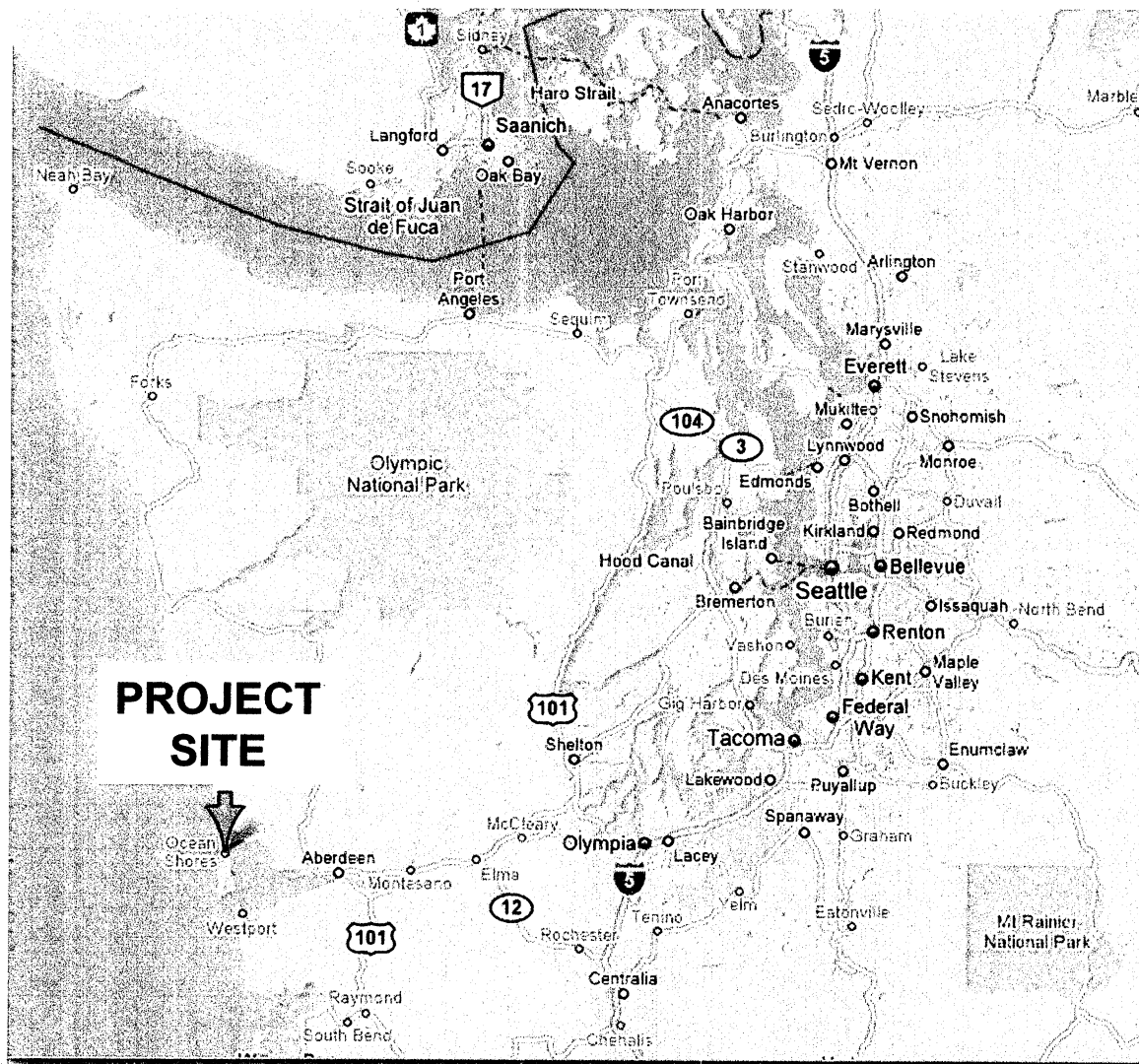
Westport site

ID	Latitude	Longitude
NW	46° 52' N	124° 10' W
NE	46° 52' N	124° 06' W
SW	46° 49' N	124° 10' W
SE	46° 49' N	124° 06' W

Project Map

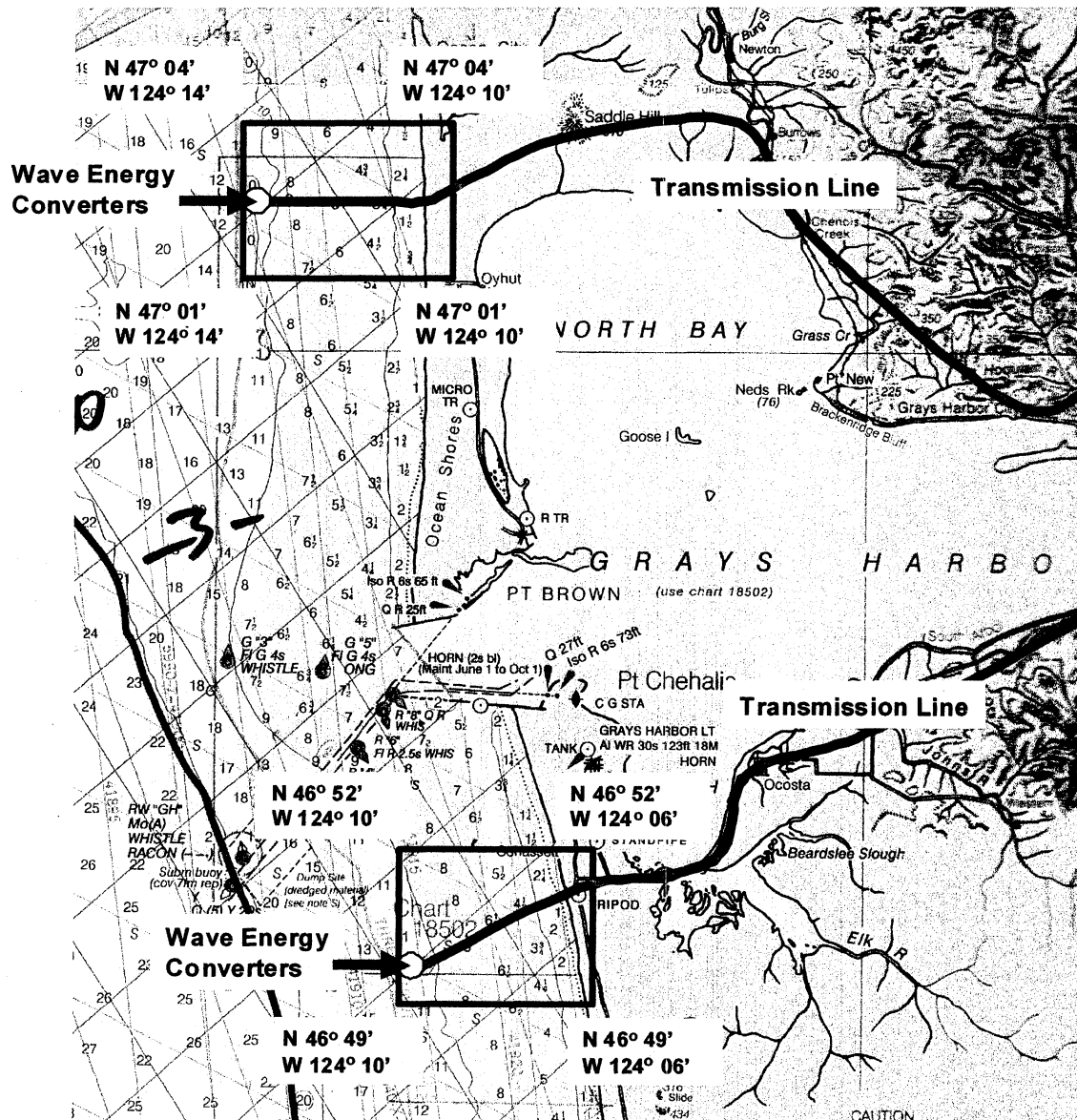
The project is located off the west coasts of the towns of Ocean Shores and Westport, Washington, within the three mile territorial waters limit and subject to FERC jurisdiction.

Figure 1: Project Regional Area Map



Ocean Shores and Westport are about a three-hour drive from Seattle. Grays Harbor is a regional port traditionally serving the forest products and fishing industries. The area is a focus for state economic development effort. The Grays Harbor entrance channel is extensively engineered and maintained by the US Army Corps of Engineers. The town of Ocean Shores is a beach resort community. The town of Westport is similar and also has a significant local sport and commercial fishing fleet and recreational boating industry. Fast-growing industrial companies in the area are interested to use renewable energy for their operations. All Washington State utilities are directed by the state's Renewable Portfolio Standard to provide 15% of their electric power from renewable sources by 2020.

Figure 2: Project Site Map



The project has two locations which are proposed for permitting together. Each is about 3 miles by 2 miles in size, covering about 12 square miles. The project is completely within the 3-mile territorial limit and thus subject to FERC jurisdiction for energy generation projects. The project dimensions cover the wave energy converters and the power transmission cable to shore and the grid interconnection substation. The project does not cover the Grays Harbor navigation channel and no construction or installation will take place in any official navigation area, subject to decisions by authorities.

The exact location of the wave energy structures will be determined through stakeholder consultation and engineering analysis. They are located between 2.5 and 2.8 miles offshore. They will be barely visible from the shoreline. The transmission cables from the structures run to the shore. The wave converters will be Oscillating Water Column (OWC) devices that use an air tube that is a vertical open-ended pipe held about half in and half out of the water. A Wells-type air turbine is located in the top of the pipe, above the highest water level. As waves pass by the pipe they push air up and down the pipes which drive the air turbines.

3. Name, Business Address, and Telephone Number of Applicant

W. Burton Hamner

President, Grays Harbor Ocean Energy Company LLC (formerly known as Washington Wave Company LLC)

5534 30th Avenue NE, Seattle WA 98105

206-491-0945

4. Preference under Section 7(a) of the Federal Power Act

Grays Harbor Ocean Energy Company, LLC is a Washington limited liability company and is not claiming preference under Section 7(a) of the Federal Power Act.

5. Term of Permit

The proposed term of the requested permit is 36 months.

6. Existing Dams or Other Project Facilities.

There is no existing dam or other project facility as part of the proposed project.

Exhibit 1 – Project Description

Summary

The Project is located off the west coast of the towns of Ocean Shores and Westport, Washington, USA, on the northwest corner of the continental USA. The site is within the three-mile territorial limit and subject to FERC and state jurisdiction. The site is about 28 square miles in area, being 2.8 miles wide East-West, and 14 miles long North-South. Figure 4 shows an aerial view of Westport towards the southeast. The offshore wave devices will be installed in the area in the lower right of the picture. Figure 5 shows the town of Ocean Shores looking south towards Westport across the Grays Harbor entrance channel.

Figure 3: Aerial View of Westport, Washington



Figure 4: Aerial View of Ocean Shores, Washington



The site has outstanding, world-class renewable wave and wind energy resources. It has relatively shallow ocean depths that enable the installation of proven wind turbines and also a variety of wave energy converters.

The Project will generate up to 6 MW power at peak, typically during winter months, and about 4 MW power on average. The seasonality of power generation matches well to the winter power demand.

The actual number of wind devices that can be installed depends on state authorities. The power projection is only estimated at this time because extensive review by communities and regulatory authorities will determine the number of devices that will be allowed. The project will evolve through a phased process in consultation with all stakeholders.

The Project cannot proceed without support from stakeholders. The Project will provide support for affected communities, besides the local jobs created. Possible forms of support include providing renewable power to local communities at guaranteed competitive rates; direct revenue sharing from electric power sales; special equity stock sales to enable local residents to become project shareholders; and other ideas to be developed with stakeholders.

Background Information

Site Physical Information

Grays Harbor is a commercial port and harbor whose harbor entrance is bounded by jetties constructed and maintained by the US Army Corps of Engineers. Annual dredging of the ship channel is necessary. The Corps has been conducting physical and environmental studies of the area around the jetties, including the area proposed for the Project, for many years. All the coastal hydraulic and environmental baseline information needed for this project has already been developed.

Related Developments

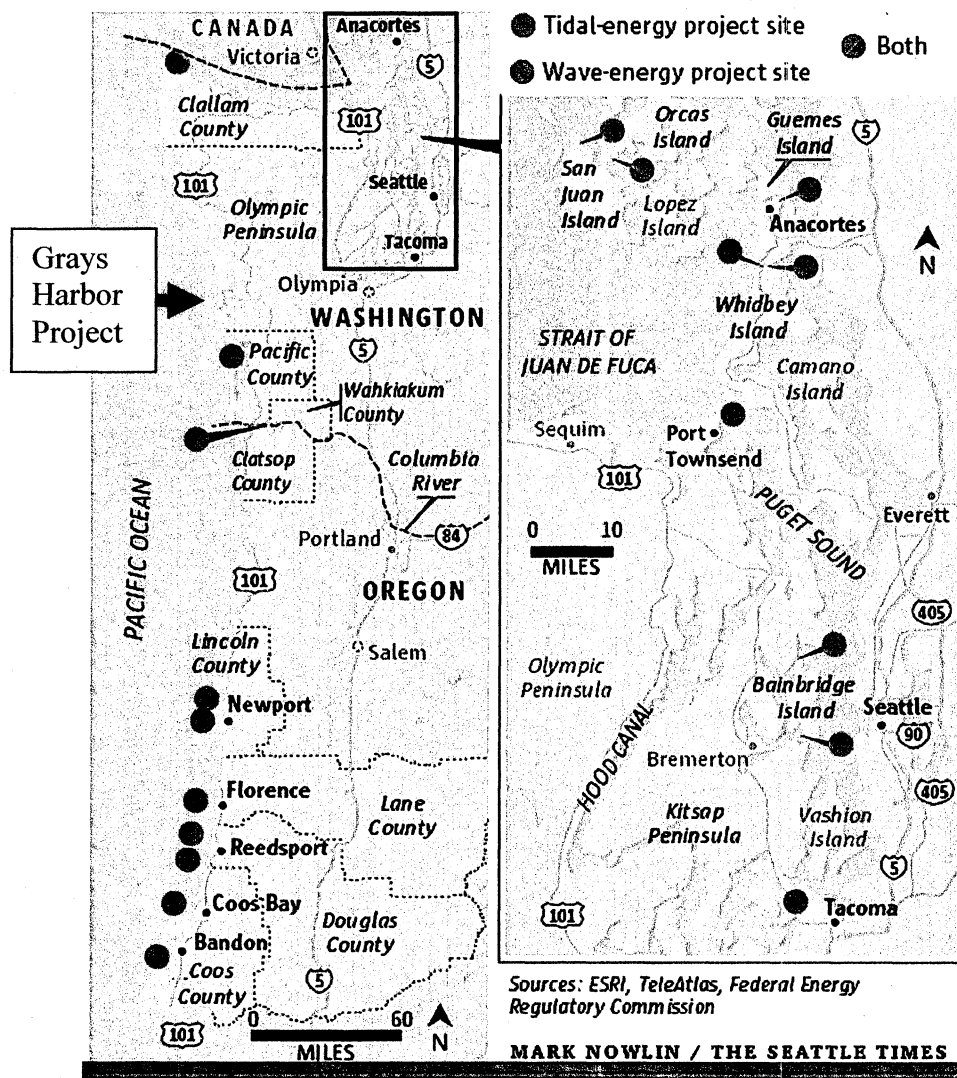
A 1 MW wave energy demonstration project is now underway at Makah Bay in Washington, north of this proposed project. The developer is Finavera Renewables in partnership with the Makah Indian Nation.¹ A preliminary environmental impact assessment has been completed and found no significant impacts to be expected. Seven wave energy projects in Oregon have received preliminary permits and are under development. Oregon State University has started a wave energy research program and the Project will collaborate actively with OSU to develop the technology and further understanding of offshore renewable energy.

¹ http://finavera.com/en/wave/makah_bay

Figure 5: Ocean Energy Projects in the Pacific Northwest USA

The rush is on to tap the ocean for power

Locations for nearly 20 proposed tidal or wave-energy power-producing projects in the Northwest:



The remarkable number of wave energy projects in the region creates outstanding opportunities for collaboration to develop the Grays Harbor Project. Wave energy converters are already being tested at sites in Oregon and the Project will have the benefit of learning from the experience of others who have progressed further at their own sites.

Around the world wave energy technology is being developed. The World Energy Council has published a 2007 survey that outlines efforts nationally.² There are at least twenty different

² http://www.worldenergy.org/publications/survey_of_energy_resources_2007/wave_energy/default.asp

types of Wave Energy Converter device under development now. In the USA the US Navy is among the organizations that are sponsoring WEC demonstration projects.

The Grays Harbor region where the project is proposed is in a vigorous economic revitalization process. Funds to support technology innovation have been granted to the Port of Grays Harbor and there is a Sustainable Grays Harbor / Vision 2020 initiative driven by local business which includes promotion of renewable energy. The Grays Harbor Public Utility District (GHPUD) is covered by the state's Renewable Portfolio Standard which requires it to obtain a significant portion of its power from renewable sources.

Washington State Wave Energy

The Electric Power Research Institute (EPRI) has conducted a national study of wave and tidal energy and its potential for commercial renewable energy generation.³ EPRI investigated six states as the most promising. Washington State has the highest average wave energy of the six sites investigated in those states.

Figure 6: EPRI Estimates of Wave Energy at Six USA Sites

	SF CA	HI	ME	MA	OR	WA
Average Annual Power Flux at Selected Site (kW/m)	20.0	15.2	4.9	13.8	21.2	26.5

Wave energy is seasonal and strongest in the winter months. In winter the wave energy in Washington can increase up to four times the average annual level of energy. Wave energy varies slightly along the Washington coast and is near maximum at several points including just north of the Grays Harbor inlet.

³ The EPRI Ocean Energy project reports are available online at <http://archive.epri.com/oceanenergy/waveenergy.html>

Figure 7: Temporal Variation in Wave Energy Flux at Columbia River Mouth, Washington

Temporal Variation

Month-to-month variations in wave energy flux off the entrance to the Columbia River is plotted in Figure 3. The high mean monthly fluxes during the winter are due to a few individual storms that have peak wave fluxes as high as 200 kW/m.

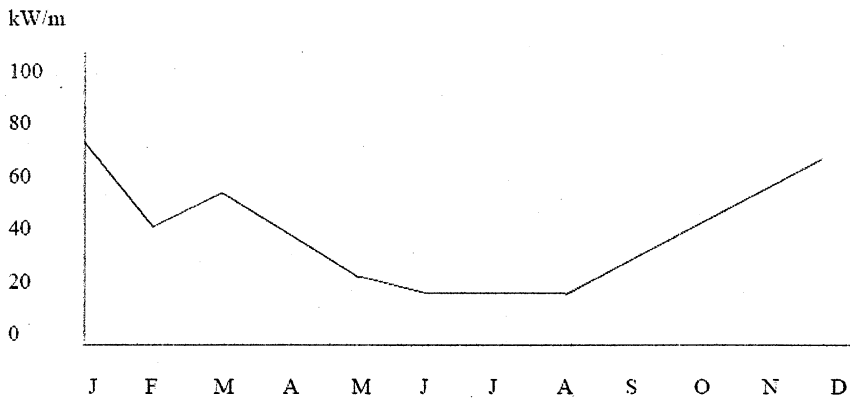


Figure 3. Seasonal Variation in Wave Energy Flux off the Columbia River Entrance

Figure 8: Wave Energy Along the Washington Coast

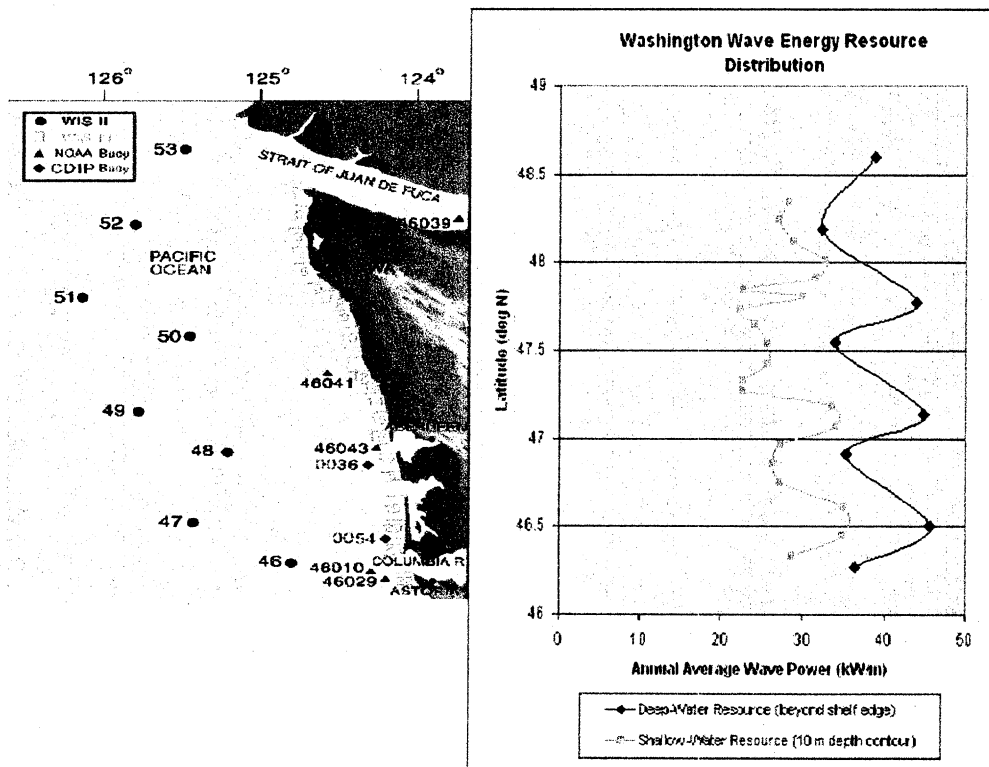


Figure 2. Washington Annual Average Wave Power (squares represent the 20- to 40-m depth range and diamonds represent very deep water off the continental shelf)

Wave Power Production

EPRI conducted a survey of potential offshore sites in Washington for a 1,500 MWh annual energy output (500kW at 40% capacity factor) wave energy power plant feasibility demonstration and an envisioned 300,000 MWh per year (100 MW at 40% capacity factor) commercial plant.⁴ EPRI also reviewed the available and proposed Wave Energy Converters (WECs) and developed Cost of Energy estimates for sites in five other states. The Washington state estimate was not completed by EPRI due to lack of funds. Cost of energy for a wave energy plant at Grays Harbor would be similar to that of Oregon, but likely lower because the wave energy is stronger in Washington than in Oregon. The EPRI estimates do not include costs for permitting and use many assumptions that remain to be proven.

Figure 9: EPRI Estimates of Cost of Wave Energy at Five USA Sites

Commercial Plant	Hawaii Pelami	Oregon Pelami	Calif Pelamis	Calif Energetech	Mass Pelami	Maine Pelamis
Number of Units Needed for 300,000 MWh/yr	180	180	213	152	206	615
Total Plant Investment (\$M)	270	235	279	238	273	735
Annual O&M Cost (\$M)	11	11	13	11	12	33
10-Year Refit Cost (\$M)	24	23	23	15	26	74
COE (cents/kWh) nominal	12.4	11.6	13.4	11.1	13.4	39.1
COE (cents/kWh) real	10.4	9.7	11.2	9.2	11.1	32.2

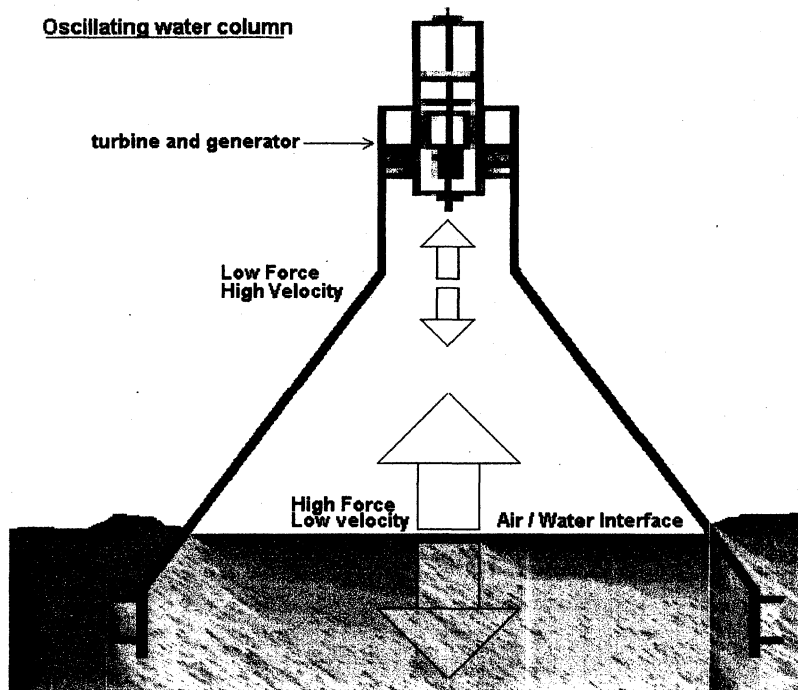
Wave Energy Conversion Technology

There are numerous designs for wave energy converters. Devices that float are not suitable for the Grays Harbor site because they will be destroyed by extreme waves, reaching 40 feet height in storms. Devices individually attached to the sea bottom will also be destroyed for the same reason. To harvest the wave energy the converters must be attached to a foundation that is strong enough to resist the waves. Offshore tower structures such as those used for offshore wind turbines or oil drilling platforms are suitable.

With a fixed structure to support it, the most suitable converter is the Oscillating Water Column (OWC). Wave action in these columns or pipes push air back and forth through an air turbine held out of the water.

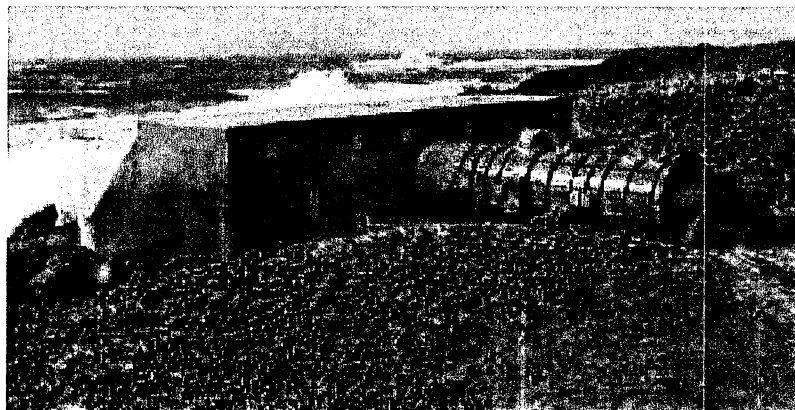
⁴ E2I/EPRI Offshore Wave Energy Plant Site Assessment – State of Washington.

Figure 10: Oscillating Water Column

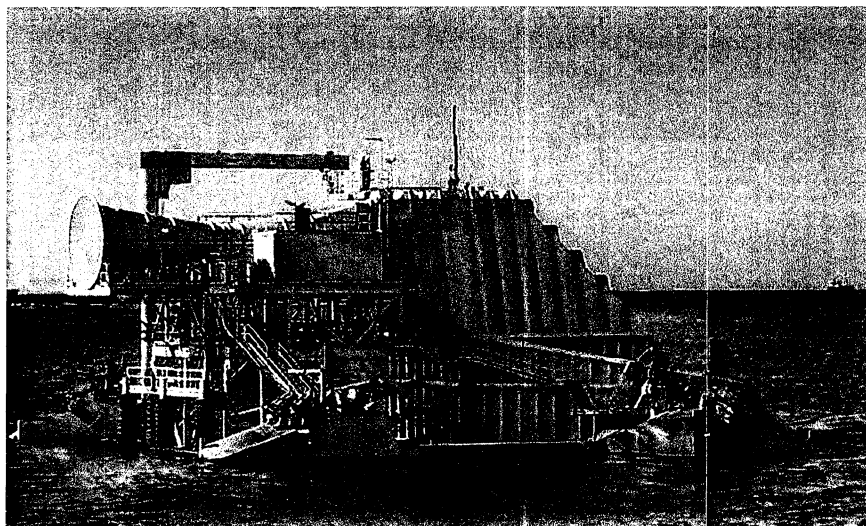


OWCs have been demonstrated on land in UK and in Portugal.

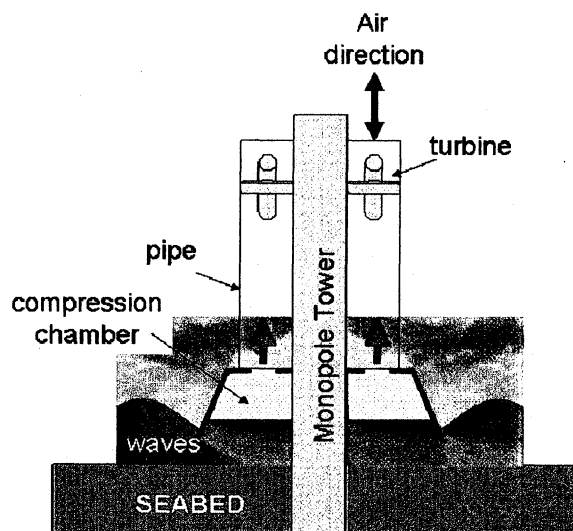
Figure 11: "Limpet" OWC at Isle of Islay, Scotland



The OceanLinx company of Australia has constructed a floating OWC wave converter and has demonstrated its performance. In field tests in 2007 it generated 320 kW.

Figure 12: OceanLinx OWC Wave Energy Converter

Such floating devices are not suitable for areas with very large waves. Instead we propose a solution that uses foundations placed into the seabed. This enables the devices to withstand the strongest wave energy and vastly reduces technical complexity.

Figure 13: OWC Converters on Monopole Foundation

The monopole is the same as those used for offshore wind turbines. If permits allow it a wind turbine can be attached to the tower that supports the wave machines.

Transmission

From each wave energy structure a 115 kV transmission line, buried about 6 feet under the sea bottom, will run to the shore. The lines will be trenched in across the shoreline and underground to the main grid connection inland about 0.5 miles. The lines will not be visible from shore. The

lines have significant excess capacity because they can support additional renewable energy generation beyond the 3 –mile limit, out of FERC jurisdiction and in the jurisdiction of the Minerals Management Service.

Once ashore the lines will attach to the local transmission grid at substations. The existing grid has capacity to absorb the 6 MW total output of the two sites.

Local Manufacturing of Wave Machines

The Grays Harbor area has capabilities for manufacturing wave energy converters and every attempt will be made to construct the machinery needed for the project at Grays Harbor.

Applicant Background

The Washington Wave Company LLC was created in September 2007 in Washington State specifically to develop ocean energy projects on the Washington outer coast. In January 2008 the company was renamed as the Grays Harbor Ocean Energy Company LLC. The Company is privately owned and financed. The founder of the Company is also president of another company, Hydrovolts Inc, that evaluated tidal power production in the Tacoma Narrows.⁸ For the City of Tacoma, Washington. This project is providing extensive information and experience relevant to the development of the Grays Harbor Project.

The Company has assembled a team of companies that are expert in their areas and highly qualified for all aspects of project development for the Project:

- Technical project management: Science Applications International Corporation (SAIC)
- Where the currents are: Evans-Hamilton, Inc.: Oceanography, current studies, and instrumentation.
- What's the bottom like: Williamson and Associates, Inc: Ocean survey, bathymetric geotechnical and ocean engineering
- What are the coastal hydraulics and whats kind of structures would work there: Coast and Harbor Engineering, Inc: Marine structure design and analysis.
- How to build it: Manson Construction Company: Heavy and light marine construction.
- What about the fish? BioSonics, Inc. observes fish passage using hydroacoustics now on the tidal turbine project in the East River of New York City.
- What permits and environmental studies are needed: Meridian Environmental, Inc: Environmental permitting and FERC licensing
- What's it worth: Resource Dimensions: Economists, planners and renewable energy policy and economics

The Company is in discussion with several large energy production and engineering companies for construction of the OWC wave converters.

⁸ www.tacomapower.com/tidal

Project Development Strategy

The Company will develop the Grays Harbor Ocean Energy Project in partnership with local, state and Federal agencies and organizations. From the beginning we are committed to dialogue and constructive response with all the stakeholders. The Company will develop a Settlement Agreement with stakeholders as part of its FERC license application. This Agreement will represent the negotiated terms acceptable to all stakeholders.

The Project will take advantage of the new FERC pilot project licensing process. The preliminary permit will, under the current "Strict Scrutiny" rule, allow the Company one year to complete development of partnerships and early studies, and prepare a Pre-Application Document for a Five-Year, 5 MW license. Under this license the Company can install up to 5 MW of generation capacity and sell the power to the grid. The technology allowed must be capable of complete removal from the site if problems arise. Because of this requirement during the first five years the Company will test only wind and wave devices that float and that are moored to the bottom using anchors.

After the five year license expires, and assuming satisfactory power and environmental results, the Company will apply for a traditional 30-year FERC license.

The Company proposes to use Oscillating Water Column energy converters to make renewable energy from waves. These are large open-ended pipes held vertically in the waves. As the waves pass the water level in the pipe rises and falls. This pushes air up and down the pipe. Inside the top of the pipe, safely out of the water, is an air turbine that is driven by the air pushed up and down in the pipe by the waves. Thus there are no moving parts or electronics under water.

To suspend the pipes vertically in the waves a monopile tower is driven into the seabed. This tower is massive, perhaps 20 feet in diameter, and designed to withstand the largest waves possible at the site. The air pipes lie vertically along the sides of the tower which supports them. Inside the tower are the electronics and related equipment. The towers are designed to be sufficiently strong that they can be used to hold large offshore wind turbines in the future, subject to state permitting. The towers can also be removed completely by vibrating them slowly while pulling upwards. If they are removed the foundation holes will fill in naturally with sediment and disappear.

To prepare the Project, the Company will produce engineering and environmental analyses for stakeholder review. The project will generate under 5 MW average power and thus will qualify for the proposed new FERC pilot project licensing scheme as well as the regular license. The project will be submitted to local and state authorities for permitting and to ascertain what studies may be required.

Financing for the project is expected to be based in large part on the power production estimates and negotiation of Power Purchase Agreements, and in smaller part from private investment through and by WWC. Several large power users in the Grays Harbor area have already expressed interest in using renewable energy from the Park. Additionally the GHPUD can absorb the power and distribute it through its grid. The WECs will be constructed in Washington

State using local parts and labor to the extent possible and thus will qualify for various renewable energy incentives.

1. Project Configuration

There will be no proposed structures such as dams, spillways, penstocks, powerhouses or tailraces for this project.

2. Reservoirs

There are no reservoirs required for this project.

3. Transmission Lines

The power transmission cable will be connected to approximately the north-south center of the array and will follow an easterly course. The transmission cable will then be run to the interconnect point on the Ocean Shores and Westport grids. The overhead poles currently used to carry lines can be re-cabled to increase capacity as needed to accommodate project expansion. The exact details of the interconnection such as the number, length, and end connection details will be determined during the feasibility study for the proposed project.

4. Estimated Annual Energy Production

On each of the two structures will be installed 6 500 kW OWC turbines, making a total of 6 MW total rated output, for 52,760 MW/year production at maximum. The expected capacity factor is 60%, for average annual energy production of 31,656 MW/year.

5. Lands of the U.S.

All lands within the proposed project boundary are identified under Exhibit 3. The aquatic portion of the project would be located on state submerged lands. The proposed project transmission cable would make landfall at the Ocean Shores substation. As specified by 18 CFR 4.g1(b)(5), a completed land description form is included as Attachment A.

6. Public Interest Benefits

The Project will develop a new source of electricity, which:

- Generates clean and renewable energy at competitive cost;
- Provides much needed power generation along the Washington coast and within local communities further enabling local economic growth and prosperity;
- Enhances the local stability of the transmission grid by diversifying generating capacity;
- Produces no negative environmental impacts on the marine or coastal environments even as it creates new habitat for fish and fishing (a vital local industry); and
- Creates new local jobs for the design, fabrication, installation, and maintenance of the wave park.

The proposed project would utilize the affected waters in the public interest by bringing a new source of renewable, non-polluting energy to the U.S. The federal Energy Policy Act of 2005 encouraged the development of renewable energy resources, including ocean energy. Domestic

sources of energy are also in the public's best interest as they increase energy security by reducing the country's dependence on foreign oil and other fossil fuel energy sources.

Wave and wind energy systems of this type do not involve the construction of dams or reservoirs, affect water quality, block fish passage, or direct fish and other aquatic life through turbine generators. Wave energy projects also produce none of the environmental and atmospheric pollutants produced by fossil fuels and are expected to have minimal environmental effects.

Exhibit 2: Description of Proposed Studies

1. Description of Studies

Wave Energy Technology

The technology to be used at the site is being studied elsewhere by developers. The technologies available and their performance data will be reviewed by the Company and the project stakeholders. Developers will be invited to demonstrate their technologies at the site. Extensive modeling will be conducted before any devices are actually installed.

Site Development

Many of the needed studies have already been performed. The physical and biological characteristics of the site have already been studied in detail by organizations such as the US Army Corps of Engineers, the Port of Grays Harbor and various private contractors. Remaining studies to be conducted for developing the site include:

- Wave structure anchor points: Specific site characterization.
- Cable route survey
- Cable shore crossing survey and design
- Sedimentation movement from cable laying
- Rights of way and related issues for cable crossing shoreline properties

Environmental Studies

Environmental studies for the project will be determined in consultation with stakeholders and permitting authorities.

Projects of the type proposed are not expected to have significant environmental impacts. The most significant issue is the migration of grey whales through the project area. The proposed activities will take place with three miles of shore. Grey whales are often seen in the project area in fact whale watching is a tourism industry in the area. Whales are protected under the Marine Mammal Protection Act and a full consultation with relevant authorities will be initiated immediately to specifically address protection of whales and other marine animals and birds.

Whales also pass through the wave energy project sites located south of this Project, in Oregon. Those sites are already under development and relevant agencies and experts have already begun

evaluating the research questions and potential studies needed. The Company will actively follow and participate in these studies where possible.

One existing study of a pilot wave energy project concludes that environmental concerns from individual WECs are not significant. This conclusion of course does not apply to large commercial arrays of WECs which may create impacts from migration and feeding area obstruction. The US Navy has been conducting a wave energy project in Hawaii using two devices. The project included a rigorous environmental assessment (EA), which resulted in a Finding of No Significant Impact (FONSI). The Office of Naval Research (ONR) consulted with National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS). They concurred with the Navy's findings, which are summarized below:

Figure 14: Wave Energy Demonstration Project Environmental Assessment Results

**US Navy Wave Energy Demonstration Project, Hawaii
 Conclusions from Environmental Assessment**

Oceanographic Conditions

- No impacts on oceanographic conditions.

Entanglement.

- Minimal risk of entanglement during installation.
- No risk of entanglement once the submarine power cable is rock-bolted to the seafloor.

Entrapment

- Minimal potential for entrapment of marine mammals or sea turtles.

Marine Biological Resources

- Avoids areas of rich biological diversity.
- No impact on Habitat Areas of Particular Concern (HAPC).
- Not likely to adversely affect threatened and endangered species.
- Unlikely that any impact will occur to marine mammals protected under the Marine Mammal Protection Act (MMPA).
- Beneficial Impact on the potential growth of benthic organisms on the subsea cables and anchor.

Shoreline Conditions

- Minimal impacts would occur on shoreline conditions.
- No alteration to currents or wave directions.
- No adverse effects on shoreline erosion or change in sand deposition patterns.

Electromagnetic Radiation (EMR)

- Minor and Temporary impact from EMR on marine organisms in the vicinity of the transformer and cables.

Electrical Leakage

- Mild discomfort for marine organisms and divers could occur in the unlikely event that damage to the cable causes an electrical fault.

Heat Release

- No impacts to marine life from potential heat release.

Noise

- Localized, intermittent and short duration noise during installation. Acoustic output

similar to that of ship traffic during continuous operation. Unlikely that noise from system installation or operation would have adverse effects on humpback whales, dolphins, and green sea turtles.

Terrestrial Biological Resources

- No impact on federally-listed threatened or endangered terrestrial species.

Land and Marine Resource Use Compatibility

- No incompatibilities on land use are anticipated.

Cultural Resources

- No effect on historic properties.

Infrastructure.

- No adverse impacts to existing infrastructure.

Public Safety

- No impacts on public safety within the 500-yd (457-m) buffer zone.
- Potential impacts to public safety outside the 500-yd (457-m) buffer zone.
- However, these will be mitigated by providing appropriate markings on the buoys, implementing a plan to respond to system failures, and implementing communication procedures to increase public awareness.

Visual Resources

- Minimal impacts on scenic views.
- Only the Navigational aids extend 30 R (9 m) above sea level.
- Only safety lights on the navigational aids would be visible in the distance at night.

The information above is provided as an indication of expected impacts. Actual issues at the site will be determined in partnership with stakeholders.

Two other issues of concern that are expected are navigation lanes and fishing areas. The project will not interfere with navigation lanes. There is no question that where there are wave energy systems, recreational and commercial fishing will be affected. This is unavoidable because of the conflicting use of the ocean space.

Fisheries Mitigation

The Company is considering a fisheries mitigation strategy that uses each wave structure as an artificial reef. The structures are large towers. In the submerged portion they will be coated with concrete. The concrete can be molded to create a diverse habitat structure that can support fish and other marine organisms. The seabed in the project area is sandy mud with very little solid structure. By designing the tower foundations as artificial reefs, the biological diversity of the project area will be significantly increased and should support an increase in biomass and possibly in fisheries resources.

Within the proposed project site, the Company will use the existing information to locate the most suitable site for deployment of the devices. Where existing information is insufficient, the Company may undertake additional studies to ensure the best placement of devices, best use of available resources, and to minimize any potential environmental effects. Additional research may be needed in regards to detailed bathymetry and detailed information at the project site,

navigation and recreation activities, fishing, crabbing, and other marine uses. The Company will be consulting with appropriate resource agencies and Indian tribes on appropriate studies.

In addition to the above studies, the Company will be further refining access to transmission line infrastructure and be conducting an economic and financial feasibility analysis for the proposed project.

Schedule

The following is a proposed schedule assuming issuance of the preliminary permit.

- Initiate permitting and environmental studies - upon issuance of preliminary permit.
- Conduct review of existing environmental information - upon issuance of preliminary permit.
- Conduct environmental studies, including submarine cable layout - 2008.
- Conduct economic and financial feasibility analysis - 2008.
- Apply for 5-year 5 MW FERC license - 2009
- Initial wind and wave deployment and testing - 2011.
- Apply for full FERC license - 2014
- Achieve rated power generation - 2018

2. Need for New Roads

This project will not require the construction of any roads

3. Dam Construction

The project will not require the construction of any type of dam as the facility is designed to operate in the open ocean and capture the heaving motion of the ocean swell.

4. Waiver

No waiver is being sought for the evaluation and testing of the feasibility of a wave energy project installation.

5. Statement of Costs and Financing

The estimated cost for planning and executing the studies, investigations, tests, surveys, maps, plans, and other related specifications for the proposed projects is estimated at approximately \$2,000,000.

The total cost for the completion of the FERC licensing process will be funded by the Company through a combination of equity investment, loans and grants.

The applicant is currently negotiating a Power Purchase Agreement with a consortium of local utilities and companies. Furthermore, the project is eligible for a variety of tax credits and renewable energy generation incentives. The project is also eligible for the Bonneville Power Administration's Conservation Rate Credits. Application to BPA for these credits will be done

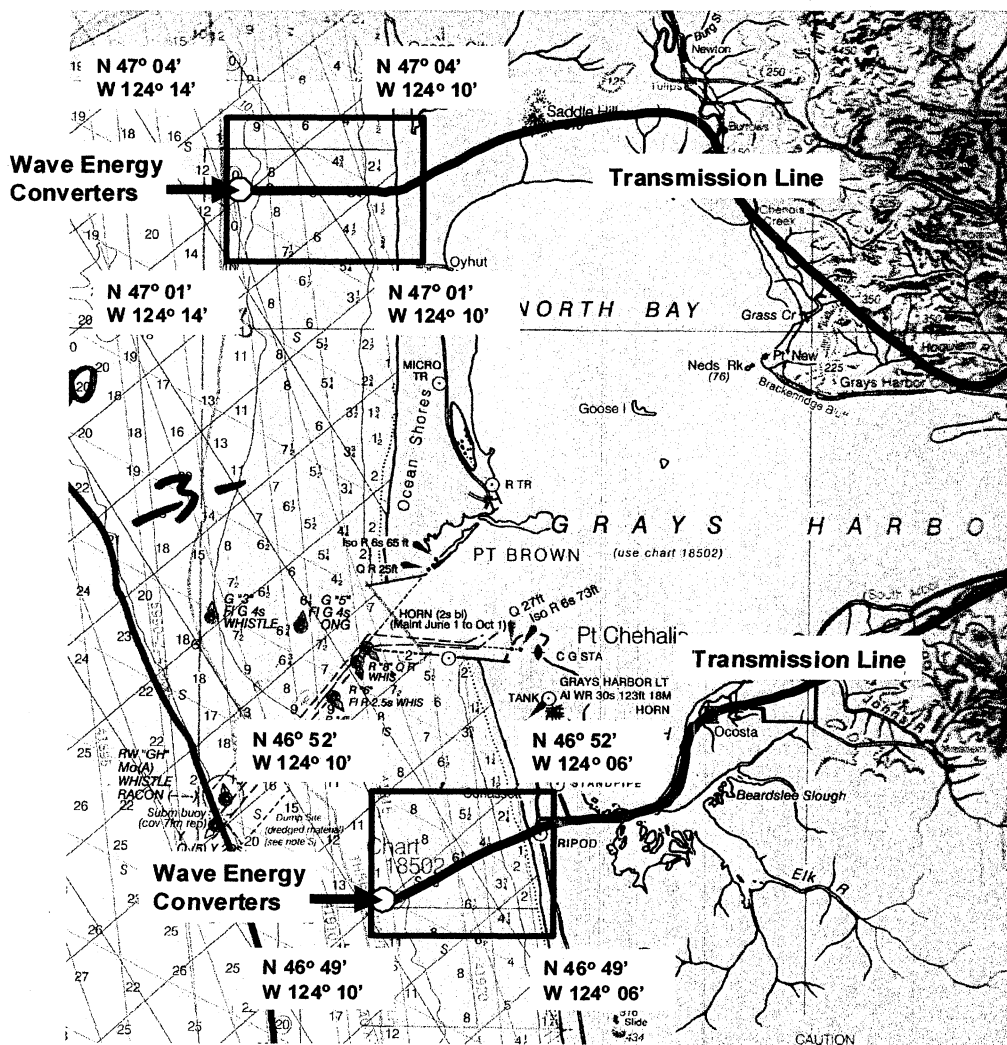
through the two local utilities. The purchase price for the power is subject to ongoing negotiations.

EXHIBIT 3 - PROJECT MAP

The project has two Sites, north and south. They are proposed together for permitting.

1. Project Boundary Map

A map of the proposed project boundary and cable route follows. The relative location and physical interrelationships of principal project features will be developed during project feasibility studies.



2. National Wild and Scenic Rivers

The proposed project area does not include any areas designated as or being considered for inclusion in the National Wild and Scenic Rivers System.

3. Wilderness Act

The proposed project area does not include any areas designated as or recommended for designation as a wilderness area or wilderness study area under the Wilderness Act.

SECTION 4.32 INFORMATION

1. Grays Harbor Ocean Energy Company, LLC is the only entity that has or intends to obtain and will maintain any proprietary rights necessary to construct, operate or maintain the proposed property.

2. Municipal Information

No federal facilities would be used by the proposed project. The area proposed for evaluation and testing is located within one county:

Grays Harbor County
100 W Broadway, Suite 2
Montesano, WA 98563
(800) 230-1638

3. Cities or towns where project will be located:

City of Ocean Shores, Washington
Mailing address: P.O. Box 909
Ocean Shores, WA 98569
Telephone Number: 360-289-3099
Fax Number: 360-289-0376
Location: 800 Anchor Ave. NW
City Manager, Richard W. McEachin Sr
rmceachin@osgov.com

City of Westport, Washington
Randy D. Lewis, City Administrator
Mailing address: PO Box 505
740 N. Montesano St.
Westport, WA 98595
Telephone Number: 360-268-0131
Fax Number: 360-268-0921
city_administrator@ci.westport.wa.us

Port of Grays Harbor, Washington
111 S. Wooding Street

Aberdeen, WA 98520, USA
Executive Director: Gary Nelson
Telephone Number: (360) 533-9530
Fax Number: (360) 533-9505
Email: gnelson@portgrays.org

No dam is proposed in association with this tidal energy project; there are no cities and towns with a population of 5,000 or more that lie within 15 miles of the proposed evaluation and study area. The estimated 2006 population of Ocean Shores is 4,658 people.

4. The proposed project transmission cables would make landfall near the Ocean Shores and Westport electricity substations. No federal facilities would be used by or otherwise associated with the proposed project and no special purpose political subdivisions exist within the proposed boundary for the evaluation and testing of wind and wave energy potential.

No other known political subdivisions exist within the proposed project evaluation and test area; however, the Company will consult with all agencies and organizations with regulatory authority over the waters and activities of the proposed project area during the evaluation of project feasibility.

Indian tribes that may be affected by the project:

Quinault Indian Nation
P.O. Box 189
Taholah, Wa. 98587
Phone: 360-276-8211
1-888-616-8211
Fax: 360-276-4191

Shoalwater Bay Indian Tribe of the Shoalwater Bay Indian Reservation
Shoalwater Bay Tribal Council
P.O. Box 130
Tokeland, WA 98590-0130
(360) 267-6766

VERIFICATION STATEMENT

The verification statement for the original FERC application applies to this revised application.

Official FERC-Generated PDF of 20071103-0708 Received by FERC OSEC 11/05/2007 10:06:41 AM P-13058-001

ORIGINAL

Washington Wave Co.

October 28, 2007

P-13058-001

Honorable Magalie Salas
Secretary, Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

Subject: Preliminary Permit Application
(Grays Harbor Ocean Energy and Coastal Protection Project)

FILED
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2007

Dear Ms. Salas:

Enclosed for filing, please find an original and eight (8) copies of Washington Wave Company, LLC's Application for a Preliminary Permit for the Grays Harbor Ocean Energy and Coastal Protection Project.

The Project will serve several important purposes:


- Generation of clean renewable energy from ocean waves and wind;
- Protection of coastal communities and navigation by absorbing and converting damaging wave energy to renewable electricity;
- Testing of offshore wind and wave technologies for reliable power production, and testing of wave energy converters for coastal protection;
- Enhancement of local fisheries productivity by making wave and wind device foundations into artificial reefs;
- Creation of local jobs and contribution to sustainable local economies.

We intend our Project to provide significant benefits to the US Department of Energy and the US Army Corps of Engineers as a national test site for ocean energy generation and coastal protection. The Project will be developed in close partnership with local communities and in conformance with local, state and Federal planning and regulatory authorities.

We are looking forward to initiating the evaluations, studies, and initial permitting process discussed in the application. If you have any questions, please contact me at (206) 491-0945.

Thank you for your consideration of this application.

W. Burton Hamner
President
Washington Wave Company LLC

 <p>STATE OF WASHINGTON</p>	<p>MASTER LICENSE SERVICE PO Box 9034 • Olympia, WA 98507-9034 • (360) 664-1400</p> <p>REGISTRATIONS AND LICENSES</p>
	<p>Domestic Limited Liability Company</p> <p>WASHINGTON WAVE COMPANY LLC 5534 30TH AVE NE SEATTLE WA 98105 5502</p> <p>TAX REGISTRATION</p> <p>REGISTERED TRADE NAMES: GRAYS HARBOR OCEAN ENERGY COMPANY LLC</p>
	<p>Unified Business ID #: 602 766 515 Business ID #: 1 Location: 1</p>
<p>The licensee named above has been issued the business registrations or licenses listed. By accepting this document the licensee certifies the information provided on the application for these licenses was complete, true, and accurate to the best of his or her knowledge, and that business will be conducted in compliance with all applicable Washington state, county, and city regulations.</p>	
	<p><i>Elizabeth A. Luce</i> _____ Director, Department of Licensing</p>

Washington Secretary of State

CORPORATIONS DIVISION - REGISTRATION DATA SEARCH

WASHINGTON WAVE COMPANY LLC

UBI Number	602766515
Category	Limited Liability Regular
Profit/Nonprofit	Profit
Active/Inactive	Active
State of Incorporation	WA
Date of Incorporation	10/01/2007
License Expiration Date	10/31/2008

Registered Agent Information

Agent Name	WILLIAM HAMNER
Address	5534 30TH AVE NE
City	SEATTLE
State	WA
ZIP	98105

Special Address Information

Address
City
State
Zip

[Return to Search List](#)