UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
1201 NE Lloyd Boulevard, Suite 1100
PORTLAND, OREGON 97232-1274

October 29, 2008

Douglas County Board of Commissioners
Douglas County Courthouse
1036 SE Douglas
Roseburg, Oregon 97470

Re: Comments on the Preliminary Application Document for the Douglas County Wave & Tidal Energy Project (FERC Docket No. P-12743)

Dear Commissioners:

The National Marine Fisheries Service (NMFS) appreciates the opportunity to provide comments on Douglas County's preliminary application document for the proposed Douglas County Wave and Tidal Energy Project on the south jetty of the Umpqua River, in Douglas County, Oregon. The NMFS is providing these comments pursuant to our statutory responsibilities under the Endangered Species Act (ESA), Magnuson-Stevens Fishery Conservation and Management Act (MSA), and the Marine Mammal Protection Act (MMPA) to assist with identifying issues which are of concern to NMFS' trust resources and mechanisms to address those concerns.

Proposed Action

The proposed project is in the Pacific Ocean off the coast of Douglas County, Oregon. It is situated on the southern face of the U.S. Army Corps of Engineers' (Corps) south jetty, located on the south bank of the Umpqua River.

The electrical generating facility will include an oscillating water column (OWC), turbines and generators, and a marine transmission cable. The land-based structures will include a transmission line, a shore station, and a substation. The exact physical composition, dimensions, and configuration of the project are unknown at this time.

The OWC will be within or near the south jetty and be connected to the electrical grid through a marine transmission cable that will traverse an aquaculture farm. The transmission line will be located under and through the intertidal and dune habitat. From the shoreline, the transmission line will follow an existing roadway inland of the dunes to Highway 101 where it will likely connect to the electrical grid via Central Lincoln People's Utility District.

The OWC will generate energy from 1 to 3 megawatts. The actual number of turbines and final installed capacity has yet to be determined and will be based upon studies of wave potential. The system will generate power as a result of wave action causing air in an OWC to move up and down, which in turn forces air in and out of the turbine. The self-rectifying turbine converts the air motion into rotary motion which is used to drive a generator to produce electricity.

General Comments

NMFS' Trust Resources

The NMFS' trust resources in the area include endangered and threatened species protected by the ESA, designated essential fish habitat (EFH) under the MSA, and marine mammals protected under the MMPA. ESA-listed species within the vicinity of the proposed project include salmon, sturgeon, pinnipeds, and cetaceans (Table 1). EFH is designated in the nearshore environment for salmon, groundfish, and coastal pelagic species (Table 2). In addition, estuaries, rocky substrate, kelp beds, eelgrass, kelp beds, and biogenic habitat are given additional consideration under the MSA because they are considered habitat areas of particular concern (HAPCs). Please note that all marine mammals (whether considered threatened or endangered under the ESA) are protected under the MMPA. The NMFS recommends reviewing our marine mammal website for additional information regarding harassment or injury to marine mammals http://www.nmfs.noaa.gov/pr/laws/mmpa/.

Proposed Project Details

The NMFS recognizes that Douglas County is in the initial stages of planning for the proposed action, and the design details have not been finalized. This includes the exact location of the structure on the jetty (shoreward or seaward), the percentage of the jetty the structure will occupy, and whether the structure will be embedded in the jetty, abut the jetty, or another configuration. In addition, the exact location of the transmission line and installation methods has not been determined. Thus, NMFS' comments are provided as general issues and the potential effects on NMFS' trust resources that should be more fully examined as greater details about the project develop. These issues may stem from short-term and long-term effects from construction, operation, monitoring, and decommissioning. The NMFS would appreciate the opportunity to be engaged during this process to provide guidance on the studies which are needed to address potential effects to ESA-listed species, EFH, and marine mammals.

Table 1. ESA-listed species within the vicinity of the proposed project

Common Name	Scientific Name	Listing Status	Critical Habitat
Cetaceans			
Southern Resident killer whale DPS	*Orcinus orca*	E 11/18/2005; 70 FR 69903	11/29/2006; 71 FR 69054
Blue whale	*Balaenoptera musculus*	E 12/02/1970; 35 FR 18319	None designated
Fin whale	*B. physalus*	E 12/02/1970; 35 FR 18319	None designated
Humpback whale	*Megaptera novaeangliae*	E 12/02/1970; 35 FR 18319	None designated
Pinnipeds			
Eastern DPS Steller sea lion	*Eumotopias jubatus*	T 5/5/1997; 62 FR 24345	8/27/1993; 58 FR 45269
Sea Turtles			
Leatherback sea turtle	*Dermochelys coriacea*	E 6/2/1970; 35 FR 8491	3/23/1979; 44 FR17710
Salmon			
Oregon Coast coho salmon	*Oncorhynchus kisutch*	T 2/11/08; 73 FR 7816	2/11/08; 73 FR 7816
Southern Oregon Northern California Coasts Coho salmon	*O. kisutch*	T 6/28/05; 70 FR 37160	T 6/28/05; 70 FR 37160
Sturgeon			
Southern DPS Green Sturgeon	*Acipenser medirostris*	T 4/7/06; 71 FR 17757	Proposed 9/08/08; 73 FR 53084

E = listed as endangered; T = listed as threatened

Table 2. Species with designated EFH in the project area.

Groundfish				
Common Name	*Scientific Name*	Lifestage	Activity	PreyName
Big skate	*Raja binoculata*	Adults	Feeding	Crustaceans, fish
Black rockfish	*Sebastes melanops*	Juveniles	Feeding	Amphipods, barnacle cypriots, copepods, fish larvae, mysids, polychaetes, amphipods,crustacean zoea, fish larvae,
Brown rockfish	*Sebastes auriculatus*	Adults	Feeding	Crabs, fish, isopods, polychaetes, shrimp, crabs, fish,
		Juveniles	Feeding	Amphipods, copepods, crabs, fish
Butter sole	*Isopsetta isolepis*			
Cabezon	*Scorpaenichthys marmoratus*	Adults		Crabs, fish eggs, lobsters, molluscs, small fishes
China rockfish	*Sebastes nebulosus*	Adults		Brittle Stars, chitons, crab larvae, crabs, fish, octopi, shrimp
		Juveniles		barnacle cypriots, crustaceans
		Larvae	Feeding	Copepods, invertebrate eggs, invertebrate nauplii
Curlfin sole	*Pleuronichthys decurrens*			
English sole	*Parophyrus vetulus*			
Grass rockfish	*Sebastes rastrelliger*	Adults	Feeding	Crustaceans, ophiodon elongatus, rockfish, salmon, Cabezon
Kelp greenling	*Hexagrammos decagrammus*	Adults		Brittle Stars, crabs, octopi, shrimp, small fishes, snails, worms
Lingcod	*Ophiodon elongatus*	Adults	Unknown	Demersal fish, juvenile crab, octopi, squids
		Larvae	Unknown	Copepod eggs, copepod nauplii, copepods, decapod larvae, euphausiids,
Pacific hake	*Merluccius productus*	Juveniles		Euphausiids
Rock sole	*Lepidopsetta bilineata*	Adults		echinoderms, echiurans, fish, molluscs, polychaetes, tunicates
Sand sole	*Psettichthys melanostictus*			
Starry flounder	*Platichthys stellatus*			
Soupfin shark	*Galeorhinus galeus*	Adults	Feeding	Fish, invertebrates
		Juveniles	Feeding	Fish, invertebrates
Spiny dogfish	*Squalus acanthias*	Adults	Feeding	Invertebrates, pelagic fishes
Coastal Pelagic Species				
Northern Anchovy	*Engraulis mordax*			
Pacific Sardine	*Scomber japonicus*			
Pacific (Chub) Mackerel	*Loligo opalescens*			
Market squid	*Trachurus symmetricus*			
Jack Mackerel				
Pacific Salmon				
Coho Salmon	*Oncorhynchus kisutch*			
Chinook Salmon	*Oncorhynchus tshawtyscha*			

As the project description becomes more refined, please provide diagrams of the proposed structure and maps of the transmission cable route in more detail. In addition, a detailed operation and maintenance plan should be drafted and reviewed by the natural resource agencies because these activities, in addition to effects from installation of the structure, may affect NMFS' trust resources dependent upon the type of maintenance, frequency, and timing of the action. Some examples of potential issues with maintenance activities include disturbing pinnipeds hauled out on the jetty, and water quality degradation from removal of biofouling.

Douglas County should develop a spill containment plan for construction activities and NMFS recommends reviewing the need for an emergency response plan, monitoring of the structure and the structural integrity of the jetty at the location of installation.

License Length

Douglas County is requesting a license for 50 years from FERC. Given that the field of converting wave energy to electrical energy is relatively new and this technology has not been implemented repeatedly and over a long enough time to fully understand the construction, operation, and maintenance effects on marine resources, NMFS suggests Douglas County seek a license length of a shorter duration. The NMFS is willing to discuss the issues surrounding the concern with a 50-year license more fully with Douglas County.

Monitoring and Adaptive Management

The NMFS recommends Douglas County develop rigorous pre- and post-construction monitoring plans and an adaptive management plan. Such an adaptive management process should allow the results of the monitoring studies to be shared with stakeholders, evaluated, and consensus decision-making as to the appropriate next steps for avoiding, minimizing, or mitigating effects to NMFS' trust resources. The monitoring and adaptive management plan should be developed considering the license length.

Decommissioning/Removal

As Douglas County continues to refine their proposal, NMFS suggests including a decommissioning or removal plan for effects which were not anticipated and could not be mitigated.

Issues and Studies

Oscillating Water Column

The NMFS recommends further discussion and evaluation of the impacts to marine species from the operation of the OWC. The final design details are not well understood, thus the impacts to fish, invertebrates, and marine mammals are unclear at this point. However, preliminary concerns include the entrapment or impingement of individuals within the OWC whether it by their own volition or through entrainment. If a screening mechanism is to be explored, NMFS should be involved in the design discussions to avoid and minimize effects to marine organisms.

Electromagnetic Fields

The route of the transmission cable and the mechanism by which it will be installed is unclear in the preliminary application document. However, electromagnetic fields are of concern for many of NMFS' marine species including sturgeon, salmon, sharks, and skates. Thus, NMFS recommends further evaluating the potential for effects from electromagnetic fields (EMF) on the nearshore environment through pre-installation monitoring of ambient EMF at the site and post-installation monitoring. Laboratory studies may be needed for sensitive species, as determined in consultation with natural resource agencies, and should be explored as a way to understand how the EMF may alter species feeding, rearing, or migrating patterns. The NMFS is responsible for analyzing effects to changes in the physical environment for EFH protected under the MSA as well as direct impacts upon the individual themselves for ESA-listed species.

Noise

It is unclear the level of noise the OWC will produce during operation, or the likely increase in noise in the area during construction. Thus, upon further clarification of the design details, Douglas County should engage with NMFS and the other appropriate state and federal natural resource agencies about the likely noise impacts from the OWC and effects upon nearshore species. NMFS suggests conducting ambient noise level measurements pre-installation, followed by monitoring of noise post-installation to determine the effect on ESA-listed species, EFH, and marine mammals.

Biofouling

Douglas County should prepare and carry out a plan to address the accumulation of biofouling on the structure. In particular, Douglas County should determine the need for, and the mechanism by which, cleaning of the structure will occur. The degree to which the structure is biofouled and the frequency by which the structure will be cleaned will assist NMFS in determining the effect upon habitat in the nearshore environment. In addition, if ant-fouling paints are to be used, Douglas County should consider the effects of such toxic compounds in the nearshore environment, cleaning schedule, and reapplication rate of any chemicals.

Pinnipeds

Jetties are common places for pinnipeds, particularly California sea lions and Steller sea lions in Oregon, to haulout along the Oregon Coast. Considering that this project will occur on or near the south jetty, greater consideration needs to be given to the current presence of pinnipeds on the jetty, and effects from disturbance of these animals during construction, operation, and maintenance. In addition, harbor seals are very common along the Oregon Coast and will likely be in the area of the proposed action. Thus, understanding the occurrence of the individuals and any effects from noise or other disturbances should be fully considered and evaluated.

Indirect effects

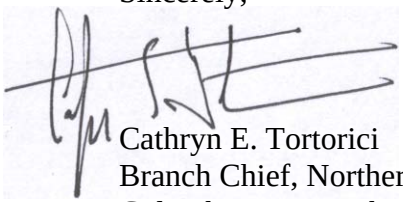
The placement of a hard structure within the active nearshore environment will cause a change in local current, wave energy distribution, and sediment transport. The NMFS recommends using remote sensing imagery to determine the baseline bathymetry and substrate of the site and nearshore area followed by groundtruthing those findings with grab and/or core samples. Using this information, NMFS recommends Douglas County conduct hydrodynamic modeling of the area to determine the baseline conditions at the site and provide prediction of changes within the littoral cell once the project is constructed and in operation. Subsequently, sediment transport modeling should be conducted to assist with determining any change in the movement and configuration of the substrate, thus, any changes on nearshore habitat for ESA-listed species and EFH. In addition, Douglas County should conduct a scour analysis at the proposed location to determine how the bathymetry may change with the placement of this structure and hence, potential changes in habitat for NMFS' trust resources. The NMFS recommends using the aforementioned modeling to predict the accretion and erosion of substrate at the structure to assist with determining the need for any maintenance dredging of the site to keep the intake unobstructed. If maintenance dredging is found to be needed, considering the depths at the site are 15 to 30 feet, please discuss the proposed disposal location of sediment.

The NMFS recommends Douglas County conduct modeling to evaluate the indirect effects of reinforcing a specific location on the jetty on redistribution of wave energy and any subsequent impact on sediment transport, wave transport, and any unintended consequences on EFH and nearshore habitat for ESA-listed species.

The NMFS would appreciate the opportunity to be engaged in this process as Douglas County moves forward with their permitting process through FERC.

If you have any questions regarding this letter, please contact Bridgette Lohrman, fishery biologist in the Northern Oregon Coast/Lower Columbia River Habitat Branch of the Oregon State Habitat Office, at 503.230.5422.

Sincerely,



Cathryn E. Tortorici
Branch Chief, Northern Oregon Coast/Lower Columbia River Habitat Branch
Habitat Conservation Division

cc: FERC Service List (P-12743)
Ken Homolka, Oregon Department of Fish and Wildlife
Ron Yockim, Douglas County, Oregon
Doug Young, U.S. Fish and Wildlife Service

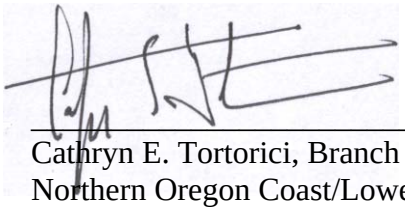
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Douglas County, Oregon	)	FERC Project No. 12743-000
	)	(Douglas County Wave and Tidal
	)	Energy Project)
	)	
	)	
	)	

CERTIFICATE OF SERVICE

I hereby certify that I have this day served, by electronic mail, a letter to Kimberly D. Bose, Federal Energy Regulatory Commission, the National Marine Fisheries Service's Comments on Douglas County's Preliminary Application Document, and this Certificate of Service has been served by first class mail or electronic mail to each person designated on the official service list compiled by the Commission in the above captioned proceeding.

Dated this 3 day of November, 2008.



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