Written Scoping Comments Received by the Bureau of Ocean Energy Management
May 29, 2014 – July 28, 2014; WindFloat Pacific Project

Federal Register Notice; 79 FR 30876; *Notice of Intent To Prepare an Environmental Assessment for Proposed Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf (OCS) Offshore Oregon and Notice of Public Scoping Meetings*

Comment Links

Inge Andreassen, American Seafoods Company
Dale Beasley, Coalition of Coastal Fisheries
Rob Bovett, Association of Oregon Counties
John Bundy, Glacier Fish Company
Eric Burnette, Oregon Board of Maritime Pilots
Jason Busch, Oregon Wave Energy Trust
Susan Chambers, West Coast Seafood Processors
Peter Cooley, Individual
Cathy Feely, Individual
Ed Fleming, Individual
Christopher Garbrick
Ed Gowan, Individual
Dennis Griffin, Individual
Chris Hartman, Global Ocean Center Services
Kim Hatfield, National Marine Fisheries Service
Doug Heiken, Oregon Wild
Delia Kelly, Oregon Department of Fish and Wildlife
Paul Klarin, Oregon DLCD
Michael Kosro, Oregon State University
Jeff Lackey, Fishing Vessel Seeker
Rebecca Lent, Marine Mammal Commission
Kara Lincoln, Individual
Heather Mann, Midwater Trawlers Cooperative
Jody McCaffree, Individual
D.O. McIsaac, Pacific Fishery Management Council
Andrew Menaquale and Ben Enticknap, Oceana
James Mize, Phoenix Processor Limited Partnership
Jim Morgan, Oregon Parks and Recreation
Steven Olsen
Brent Paine, United Catcher Boats;
Donna Parker, Arctic Storm Management Group
Joseph Plesha, Trident Seafoods Corporation

Jean Public, Individual
Ron Sadler, Individual
Mike Stone
State Supervisor, U.S.Fish and Wildlife Service
Frederick Taubert, Individual
Terry Thompson, Lincoln County
Zdenka Willis, NOAA
Daniel Waldeck, Pacific Whiting Conservation Coop.

BURDEN BREAKDOWN—Continued

Citation 30 CFR 550 Subpart C and related NTL(s)	Reporting and recordkeeping requirement	Hour burden	Average number of annual responses	Annual burden hours
General				
303–304	General departure and alternative compliance requests not specifically covered elsewhere in subpart C regulations.	2	5	10
Subtotal			5	10
Total Burden			2,560	112,111

Estimated Reporting and Recordkeeping Non-Hour Cost Burden: We have identified no non-hour cost burdens for this collection.

Public Disclosure Statement: The PRA (44 U.S.C. 3501, *et seq.*) provides that an agency may not conduct or sponsor a collection of information unless it displays a currently valid OMB control number. Until OMB approves a collection of information, you are not obligated to respond.

Comments: We invite comments concerning this information collection on:

- Whether or not the collection of information is necessary, including whether or not the information will have practical utility;
- The accuracy of our burden estimates;
- Ways to enhance the quality, utility, and clarity of the information to be collected; and
- Ways to minimize the burden on respondents.

If you have costs to generate, maintain, and disclose this information, you should comment and provide your total capital and startup costs or annual operation, maintenance, and purchase of service costs. You should describe the methods you use to estimate major cost factors, including system and technology acquisition, expected useful life of capital equipment, discount rate(s), and the period over which you incur costs. Capital and startup costs include, among other items, computers and software you purchase to prepare for collecting information, monitoring, and record storage facilities. You should not include estimates for equipment or services purchased: (a) Before October 1, 1995; (b) to comply with requirements not associated with the information collection; (c) for reasons other than to provide information or keep records for the Government; or (d) as part of customary and usual business or private practices.

We will summarize written responses to this notice and address them in our submission for OMB approval. As a result of your comments, we will make any necessary adjustments to the burden in our submission to OMB.

Public Availability of Comments: Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Dated: May 20, 2014.

Deanna Meyer-Pietruszka,

Chief, Office of Policy, Regulations, and Analysis.

[FR Doc. 2014–12417 Filed 5–28–14; 8:45 am]

BILLING CODE 4310–MR–P

DEPARTMENT OF THE INTERIOR

Bureau of Ocean Energy Management

[Docket No. BOEM–2014–0050; MMAA104000]

Notice of Intent To Prepare an Environmental Assessment for Proposed Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf (OCS) Offshore Oregon and Notice of Public Scoping Meetings

AGENCY: Bureau of Ocean Energy Management (BOEM), Interior.

ACTION: Notice of Intent.

SUMMARY: In compliance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4231 et seq.), BOEM intends to prepare an Environmental Assessment (EA) to consider the reasonably foreseeable environmental consequences associated with the issuance of a lease and approval of plans proposed by Principle Power, Inc. (Principle Power) for wind energy-related development activities offshore Oregon. We are seeking public input regarding important environmental issues and the identification of alternatives that should be considered in the EA.

In addition to the request for written comments, we are holding two public scoping meetings to provide information and solicit comments on the scope of the EA. The meetings will be held from 1:00 p.m. to 4:00 p.m. and 5:00 p.m. to 8:00 p.m. PDT on Tuesday, June 17, 2014 at the Coos Bay Public Library, 525 Anderson Avenue, Coos Bay, Oregon 97420.

Authority: The Notice of Intent to prepare an EA is published pursuant to 43 CFR 46.305.

DATES: Comments should be submitted no later than July 28, 2014.

FOR FURTHER INFORMATION CONTACT: Greg Sanders, BOEM Pacific OCS Region, 770 Paseo Camarillo, 2nd Floor, Camarillo, California 93010; (805) 389–7863 or *greg.sanders@boem.gov.*

SUPPLEMENTARY INFORMATION:

1. Background

On May 15, 2013, BOEM received an unsolicited request from Principle Power for a commercial wind energy lease on the OCS offshore Coos Bay, Oregon. Principle Power's proposal, the WindFloat Pacific Project, is to install a floating wind energy demonstration facility approximately 16 nautical miles from shore in a water depth of approximately 1,400 feet. The total area being considered in the EA encompasses approximately 15 square miles. However, the lease will include only the portion of the 15-square-mile area necessary for project facilities. The project is designed to generate up to 30 megawatts (MW) of electricity from five

floating WindFloat units, each equipped with a 6–MW offshore wind turbine. Each unit would be moored with multiple anchors to the seafloor, and be connected to a single transmission cable running along the seafloor to shore. Additional information on Principle Power's unsolicited lease request and maps of the proposed lease site can be viewed at *http://www.boem.gov/State-Activities-Oregon/*.

On September 30, 2013, we published a notice of the unsolicited lease request and a Request for Interest (RFI) to determine whether anyone had an interest in acquiring a commercial wind lease in the area identified by Principle Power (78 FR 59969). The notice also provided the opportunity for interested stakeholders to comment on the proposed lease area, the proposed project and potential impacts wind energy development may have on the area.

No indications of competitive interest were received in response to the notice, and BOEM published a Determination of No Competitive Interest on February 6, 2014 (79 FR 7225). Stakeholder comments received in response to the RFI are being considered during our scoping process.

2. Purpose and Need for Agency Action

BOEM will process Principle Power's unsolicited lease request under the provisions at 30 CFR Part 585, Renewable Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf. These regulations provide for lease issuance and approval of plans for construction and operation of renewable energy facilities.

3. Proposed Action and Scope of Analysis

BOEM's proposed action is the issuance of a commercial lease and the approval of a construction and operation plan for the WindFloat Pacific Project. The EA will consider the reasonably foreseeable environmental consequences associated with the proposed action, including the impacts of the construction, operation, maintenance and decommissioning of wind turbines and cables.

This notice is intended to further engage the public in the scoping process for this EA. We are soliciting information regarding important environmental issues and alternatives that should be considered in the EA. Alternatives currently under consideration include the proposal submitted by Principle Power and a no-action alternative. Environmental resources we expect to evaluate in the EA include benthic invertebrates, fish, birds, bats and marine mammals. We will also consider other human uses in the vicinity of the proposed project, including commercial and sport fishing, recreation and vessel traffic.

If at any time during preparation of the EA we determine that an environmental impact statement (EIS) is needed, we will issue a Notice of Intent (NOI) to prepare an EIS in the **Federal Register**. In that case, scoping comments you submit now will be considered for the development of an EIS.

4. Other Environmental Review and Consultation Processes

BOEM will also use responses to this notice and the EA public involvement process to satisfy the public involvement requirements of the National Historic Preservation Act (16 U.S.C. 470f), as provided in 36 CFR 800.2(d)(3). We are seeking information from the public on the identification of historic properties that may be affected by the WindFloat Pacific Project. The analyses contained within the EA also will support compliance with other environmental statutes (e.g., Endangered Species Act, Magnuson-Stevens Fishery Conservation and Management Act, Migratory Bird Treaty Act and Marine Mammal Protection Act).

5. Cooperating Agencies

It is BOEM's intent to prepare an EA that will inform all Federal decisions related to Principle Power's proposal, and we invite Federal, state and local government agencies to consider becoming cooperating agencies in the preparation of this EA. Council on Environmental Quality regulations implementing the procedural provisions of NEPA define cooperating agencies as those with ''jurisdiction by law or special expertise'' (40 CFR 1508.5). Potential cooperating agencies should consider their authority and capacity to assume the responsibilities of a cooperating agency and remember that an agency's role in the environmental analysis neither enlarges nor diminishes the final decision-making authority of any other agency involved in the NEPA process.

Even if an organization is not a cooperating agency, opportunities will exist to provide information and comments to BOEM during the normal public involvement phases of the NEPA process.

6. Comments

Federal, state, local government agencies, tribal governments and other interested parties are requested to send written comments on the important issues to be considered in the EA by any of the following methods:

1. Federal eRulemaking Portal: *http://www.regulations.gov.* In the field entitled ''Enter Keyword or ID,'' enter BOEM–2014–0050, and then click ''search.'' Follow the instructions to submit public comments and view supporting and related materials available for this notice;

2. By U.S. Postal Service or other delivery service, send your comments and information to the following address: Bureau of Ocean Energy Management, Pacific OCS Region, Attention: Greg Sanders, Office of Environment, 770 Paseo Camarillo, 2nd Floor, Camarillo, California 93010; or

3. In person at one of the EA public scoping meetings.

Before including your address, phone number, email address or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information may be made publicly available at any time. While you can ask us in your comments to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Dated: May 14, 2014.

Walter D. Cruickshank,

Acting Director, Bureau of Ocean Energy Management.

[FR Doc. 2014–12066 Filed 5–23–14; 8:45 am]

BILLING CODE 4810–MR–P

INTERNATIONAL TRADE COMMISSION

[Investigation Nos. 701–TA–454 and 731–TA–1144 (Review)]

Welded Stainless Steel Pressure Pipe from China

AGENCY: United States International Trade Commission.

ACTION: Notice.

SUMMARY: The Commission hereby gives notice of the scheduling of expedited reviews pursuant to section 751(c)(3) of the Tariff Act of 1930 (19 U.S.C. 1675(c)(3)) (the Act) to determine whether revocation of the countervailing duty order and revocation of the antidumping duty order on welded stainless steel pressure pipe from China would be likely to lead to continuation or recurrence of material injury within a reasonably foreseeable time. For further information concerning the conduct of this review and rules of general application, consult the Commission's Rules of Practice and

PUBLIC SUBMISSION

As of: June 09, 2014
Received: May 29, 2014
Status: Pending_Post
Tracking No. 1jy-8cd8-4v6q
Comments Due: July 28, 2014
Submission Type: Web

Docket: BOEM-2014-0050
Notice of Intent to Prepare an Environmental Assessment for Proposed Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf (OCS) Offshore Oregon and Notice of Public Scoping Meetings

Comment On: BOEM-2014-0050-0001
Environmental Assessments; Availability, etc.: Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf Offshore Oregon; Public Scoping Meetings

Document: BOEM-2014-0050-DRAFT-0001
Comment from jean public , NA

Submitter Information

Name: jean public
Address:
not available
not available, NJ, 08822
Email: jeanpublic1@yahoo.com
Organization: NA

General Comment

development of wind power means drying up the rainfall. wind dries things so that is a detriment to an area. the affect on climate is substantial. also the construction of this in the ocean means destruction of ocean creatures. I am so sick of seeing the attakcs and destrucdtion against animals and birds by our govt agencies, which specialize in uncontrolled assaults and attacks on all living creaturs including people. in this case, the ocean creatures are at risk from govt permissions and assaults. an eis should be prepared. an ea is cheap and scanty and not inclusive enough to try to justify this constructions. I object completely to allowiong this wind power on the continental shelf, which is land owned by all citizens of the usa. we have lousy govt agencies managing our land.

BOEM
Bureau of Ocean Energy Management

WindFloat Pacific Project Scoping Meeting

Tuesday June 17, 2014

Name: Chris Hartman		
Address: 815 1st Ave		
City: Seattle	State: WA	Zip: 98104
Email Address: support@GlobalOceanCenter.com		
Representing: ☐ Self ☑ Organization		
Organization: GOC Services	Your Title: CEO	

BOEM PACIFIC OCS REGION
770 Paseo Camarillo, 2nd Floor
Camarillo, CA 93010
(805) 384-4706
http://www.boem.gov

Please answer the questions on the front of the comment card

WindFloat Pacific Project
Scoping Meeting
Tuesday June 17, 2014

Are there any special concerns that we should be sure to include on our assessment of the project?

Numerous considerations to bring to light.

Do you know of any specific information we should consider in our assessment?

Other comments?

We have assessed subsea desalination systems which could crossover in theory. Please contact me to discuss in greater detail.

Please fill in your contact information on the other side of the comment card

Comment Received from Ed Fleming
June 17, 2014 Scoping Meeting Coos Bay

I am concerned about the possibility of conflict with ships coming in and out of the CB harbor. The design of the turbines does not seem to take advantage of the wind direction, and they should be able to operate at higher wind velocities than 50 mph. Concerned about the unknown factor of an exclusion zone. The turbines seem better suited for high land than the ocean. The oceans have traditionally have been a part of the commons of our nation and leasing them for private corporate use could lead to abuse.

BOEM
Bureau of Ocean Energy Management

WindFloat Pacific Project Scoping Meeting

Tuesday June 17, 2014

Name: Jason Busch		
Address: 240 N. Broadway, Ste 115		
City: Portland	State: OR	Zip: 97217
Email Address: jasonrbusch@oregonwave.org		
Representing: ☐ Self ☒ Organization		
Organization: OWET	Your Title: Executive Director	

BOEM PACIFIC OCS REGION
770 Paseo Camarillo, 2nd Floor
Camarillo, CA 93010
(805) 384-4706
http://www.boem.gov

Please answer the questions on the front of the comment card

WindFloat Pacific Project
Scoping Meeting
Tuesday June 17, 2014

Are there any special concerns that we should be sure to include on our assessment of the project?

This is an important first project. Be thorough, but reasonable in your expectations. This project will set the stage for all subsequent projects for the next 20 years.

Do you know of any specific information we should consider in our assessment?

Principle Power has done great outreach. They have engaged early and often, and represent the Oregon way. Their efforts should be rewarded with a clear regulatory pathway.

Other comments?

Please fill in your contact information on the other side of the comment card

Comment Received from Jody McCaffree
June 17, 2014 Scoping Meeting Coos Bay

We do not want this project linked to Jordan Cove LNG export project. The wind turbine project will not be successful if it is dependent on Jordan Cove buying its power. What are the economic incentives for the local community?

The Bonneville power grid line will not accept any more power. FERC does not consider Jordan Cove LNG and the BOEM WindFloat project as separate options.

I was not notified about this scoping meeting even though I participated in the prior process (2013-0050: RFI). There should be a way to notify the people who have signed up previously for future meetings. There should be a place to register your email so that you can get notifications of what is happening (FERC is an example). The simpler the commenting mechanism is, the better. Need a reply once comments are uploaded letting you know that they have been uploaded.

BOEM
Bureau of Ocean Energy Management

WindFloat Pacific Project Scoping Meeting

Tuesday June 17, 2014

Name: PAUL KLARIN		
Address: 635 Capitol St. NE #150		
City: Salem	State: OR	Zip: 97301
Email Address: paul.klarin@state.or.us		
Representing: ☐ Self ☒ Organization OR DLCD		
Organization: Oregon Dept Land Conservation	Your Title: Marine Program Coord.	

BOEM PACIFIC OCS REGION
770 Paseo Camarillo, 2nd Floor
Camarillo, CA 93010
(805) 384-4706
http://www.boem.gov

Please answer the questions on the front of the comment card

WindFloat Pacific Project
Scoping Meeting
Tuesday June 17, 2014

Are there any special concerns that we should be sure to include on our assessment of the project?

Visual impacts from state parks at Cape Arago, Simpson Reef Shore Acres, and points south. Use the Visual Resource Inventory on the Oregon Marine Map and in Part Five of the Oregon Territorial Sea Plan.

Do you know of any specific information we should consider in our assessment?

Visual Resource Inventory - Oregon Marine Map and Part 5 of the OR Territorial Sea Plan.

Other comments?

Concern for potential impacts on whale migration and seabirds.

Please fill in your contact information on the other side of the comment card

BOEM
Bureau of Ocean Energy Management

WindFloat Pacific Project Scoping Meeting

Tuesday June 17, 2014

Name: Peter Cooley		
Address: 652 14th Ave		
City: Coos Bay	State: OR	Zip: 97420
Email Address: PDCooley@Frontier.com		
Representing: ☐ Self ☐ Organization		
Organization:	Your Title:	

BOEM PACIFIC OCS REGION
770 Paseo Camarillo, 2nd Floor
Camarillo, CA 93010
(805) 384-4706
http://www.boem.gov

Please answer the questions on the front of the comment card

WindFloat Pacific Project
Scoping Meeting
Tuesday June 17, 2014

Are there any special concerns that we should be sure to include on our assessment of the project?

Avian mortality

Do you know of any specific information we should consider in our assessment?

Other comments?

I can't imagine it would affect surfing, but that would be something I'd be concerned about.

Please fill in your contact information on the other side of the comment card

PUBLIC SUBMISSION

As of: July 03, 2014
Received: June 19, 2014
Status: Pending_Post
Tracking No. 1jy-8crf-aqs3
Comments Due: July 28, 2014
Submission Type: Web

Docket: BOEM-2014-0050
Notice of Intent to Prepare an Environmental Assessment for Proposed Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf (OCS) Offshore Oregon and Notice of Public Scoping Meetings

Comment On: BOEM-2014-0050-0001
Environmental Assessments; Availability, etc.: Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf Offshore Oregon; Public Scoping Meetings

Document: BOEM-2014-0050-DRAFT-0003
Comment from Cathy Feely, NA

Submitter Information

Name: Cathy Feely
Address:
119 N Adams
Eugene, OR, 97402
Email: earthleor@yahoo.com
Organization: NA

General Comment

Windfarms should be situated well outside of the migration area of the whales as they travel up and down the west coast. Whales, especially the calves and their nursing mothers, could be adversely impacted by the introduction of these machines into their natural environment causing disruption to both them and their food sources. The whales should not have to be made to divert around these windfarms, the windfarms should not be placed in their paths.

PUBLIC SUBMISSION

As of: July 03, 2014
Received: June 19, 2014
Status: Pending_Post
Tracking No. 1jy-8cr9-b52i
Comments Due: July 28, 2014
Submission Type: Web

Docket: BOEM-2014-0050
Notice of Intent to Prepare an Environmental Assessment for Proposed Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf (OCS) Offshore Oregon and Notice of Public Scoping Meetings

Comment On: BOEM-2014-0050-0001
Environmental Assessments; Availability, etc.: Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf Offshore Oregon; Public Scoping Meetings

Document: BOEM-2014-0050-DRAFT-0002
Comment from Ed Gowan, None

Submitter Information

Name: Ed Gowan
Address:
PO Box 659
Lakeside, OR, 97449
Email: Edegowan520@aol.com
Organization: None

General Comment

Believe it is a great idea! The energy is there for the taking and the use of wind turbines has been used for years. Hydro power has played a big negative part on fish and wild life habitat.
Wind and wave generated energy should be allowed off the Oregon coast.

RON SADLER

PO Box 411
North Bend, Oregon 97459

ronsad@uci.net

Bureau of Ocean Energy Management
Pacific Region Office of Strategic Resources
770 Paseo Camarillo, Second Floor
Camarillo, California 93010

June 23, 2014

Attn: Greg Sanders, Office of Environment

Re: Scoping Comments, Environmental Assessment, Windfloat Pacific Project, Coos Bay, Oregon

I attended your public meeting held in Coos Bay on July 17, 2014. Following are my comments and suggestions.

Comment No. 1 - The format and content of the meeting were inadequate to sufficiently inform the public of the proposed project and your planned Environmental Assessment process so as to generate meaningful participation and comment.

RATIONALE: The time, place, and purpose of the meeting itself were inadequately publicized. Meaningful public participation was virtually non-existent.

There was no introductory or explanatory presentation whatsoever to explain the purpose of the meeting and to put the planned EA process in context. Rather, participants were expected to individually and randomly visit various stations scattered about the room and staffed by a variety of agency or contractor personnel.

I personally had several specific questions relating primarily to the planned EA process and its compliance, or lack thereof, with the NEPA and its implementing regulations. Rather than receiving an in-depth discussion or explanation at any time, attempts were continually made to shuffle me between the various stations so as to attempt to bury the gist of my questions with pre-packaged propaganda.

NEPA regulations instruct Federal agencies to "encourage and facilitate public involvement" [1] The meeting seemed designed to accomplish the opposite.

[1] 40 CFR 1500.2 (d)

COMMENT #2: *BOEM has ignored applicable NEPA regulations which contain specific instructions as to the purpose, role, and content of an Environmental Assessment (EA).*

RATIONALE: Under the NEPA, it is made explicit that an EA is meant to be a concise public document that briefly describes the evidence and analysis that leads to the determination as to whether to prepare an Environmental Impact Statement (EIS), or, to issue a finding of no significant impact (FONSI) which would end the NEPA process for the project involved.[2]

Secondary utilities of an EA include aiding an agency's compliance with NEPA when no environmental impact statement is necessary[3] and to facilitate the preparation of a EIS when one is necessary.[4]

Because of the importance of these secondary utilities, the regulations are specific as to the content of a viable EA: "(The EA) shall include brief discussions of the need for the proposal, of alternatives as required by section102(2)(E) (of the NEPA), and of the environmental impacts of the proposed action and alternatives...".[5]

COMMENT #3: *The BOEM-proposed Environmental Assessment process, though haltingly and inadequately described, appears to violate both the letter and intent of the National Environmental Policy Act and its implementing regulations.*

RATIONALE: NEPA regulations establish quite emphatically that the rigorous and objective analysis of all reasonable alternatives, including those not within the jurisdiction of the lead agency[6] nor desirable from the standpoint of an applicant,[7] is the heart of the required analytical process.

Yet, in this case, BOEM has prematurely and without documented analysis narrowed the range of alternatives under consideration in the EA to only two, namely, "the proposal submitted by Principle Power and a no-action alternative".[8] The strong implication here is that there are no reasonable alternatives suitable

---

[2] 40 CFR 1508.9 (a) (1)
[3] 40 CFR 1508.9 (a) (2)
[4] 40 CFR 1508.9 (a) (3)
[5] 40 CFR 1508.9 (b)
[6] 40 CFR 1502.14
[7] CEQ 49?, #4c
[8] BOEM Notice of Intent for the EA, Paragraph #3

for the installation of a WindFloat-type project.

However, in its application to BOEM, Principle Power has identified two other sites, one near Point Conception in Central California and the other off of Humboldt County in Northern California, that research has indicated also have strong and suitable wind resources.[9] Clearly what is called for is an objective side-by-side comparison indicating which of the three suitable sites could best meet BOEM's need for a demonstration project with the least social, economic, and environmental costs. Failure to complete an analysis of this type puts BOEM in direct violation of the required content of an EA as outlined above.

Without so much as even mentioning the existence of suitable alternative sites, BOEM goes on to state that the proposed action for this EA is the "approval of a construction and operation plan for the WindFloat project" and that "the EA will consider the reasonably foreseeable environmental consequences associated with the proposed action".[10]

In other words, instead of using the EA process as an "important contribution to the decisionmaking process" as intended by the existing regulations, making the WindFloat proposal the only alternative under consideration turns the process into one which will essentially be used to rationalize or justify a pre-made decision. This type of action is expressly forbidden in existing regulations.[11]

BOEM apparently believes that fully disclosing "the reasonably foreseeable environmental consequences associated with the proposed action" will result in an EA that fully complies with NEPA. In fact, the existing regulations explicitly warn that a EIS/EA "is more than a disclosure document. It shall be used by Federal officials in conjunction with other relevant material to plan actions and make decisions,"[12] and "is not to be used to rationalize or justify decisions already made". [13]

In summary, the process currently outlined by BOEM would not result in a Environmental Assessment (EA) that is in compliance with the letter and intent of NEPA.

---

[9] Principle Power, "Unsolicited Application for an Outer Continental Shelf Renewable Energy Commercial Lease: Principle Power WindFloat Pacific Pilot Project", submitted to BOEM, May 14, 2013, page 5

[10] BOEM NOI, op cit, paragraph No. 3

[11] 40 CFR 1502.5

[12] 40 CFR 1502.1

[13] 40 CFR 1502.5

COMMENT #4: The consideration of undertaking an Environmental Assessment (EA) process for the WindFloat proposal at this time and at this point in the process is an irrelevant and confusing distraction. The Windfloat operation is irrevocably tied to the Jordan Cove LNG proposal and must be covered by a formal Environmental Impact Statement (EIS).

RATIONALE: In its application to BOEM requesting approval of the WindFloat project, Principle Power states that it considers market conditions and wind resources first, followed by grid interconnection capabilities.[14]

Principle Power documents that, in addition to its suitable wind resources, the "existence" of the Jordan Cove LNG project on Coos Bay and its ability to purchase power generated by the WindFloat project provided suitable market conditions. Furthermore, the infrastructure planned for development in association with the Jordan Cove project (specifically, the South Dunes Power Plant) created an obvious suitable grid interconnection opportunity.[15]

Principle Power elaborates on its relationship to the Jordan Cove proposal.[16] Specifically:

- "A subsea cable would be used to export produced electricity to facilities at the planned South Dunes Power Plant..." which is an integral part of the Jordan Cove project.

- "Jordan Cove and Principle Power are negotiating a power purchase agreement with a term and price sufficient to meet the economic needs of the WindFloat project."

- "Infrastructure planning in conjunction with Jordan Cove is already underway at the Port of Coos Bay. Additional development funds are being allocated towards the development of a multi-purpose berth that would facilitate efficient WindFloat deployments. Principle Power plans for facilities at the Port of Coos Bay to serve as the final assembly, hull load-out, turbine installation, and future maintenance base for WindFloat units."

Clearly, as described by Principle Power itself, the construction, operation, and maintenance of the WindFloat project is entirely dependent on the approval, construction, and operation of the Jordan Cove project.

This fact is further exemplified by looking at how the power generated by the WindFloat project might be utilized.

The WindFloat application contains the following single sentence: "Power generated from the WindFloat Pacific project will be delivered to the Jordan Cove

[14] Principle Power Application, op cit, page 5
[15] ibid
[16] ibid, page 1

project in the Port of Coos Bay ***and will not be offloaded to the national electric grid***"[17] (emphasis provided). This does not reflect a choice among available options on the part of Principle Power. Rather, it reflects the reality of the fact that utilization of power produced by the WindFloat project by the Jordan Cove LNG facility, if approved, is the only available option.

Multiple studies in the past have documented the fact that the existing electrical grid servicing the Coos Bay area is inadequate to allow for the importation of any new power that might be generated locally into the regional electrical grid without major changes in the existing distributional infrastructure. To date, no improvements have been implemented, and this is still the case.[18]

Clearly, without the approval, construction, and operation of the Jordan Cove LNG facility, there would be no logical basis for placing the WindFloat project in the Coos Bay area.

As documented above, WindFloat is directly linked to and intended to be an integral part of the Jordan Cove LNG facility. FERC, the lead agency, is currently still in the beginning stages of the process for preparing an EIS for the Jordan Cove facility. The release date for the Draft EIS has yet to be announced.

Existing NEPA regulations clearly address connected actions, and clearly call for actions to be considered within the scope of a single EIS if they "cannot or will not proceed unless other actions are taken previously or simultaneously" or "are interdependent parts of a larger action and depend on the larger action for their justification".[19]

NEPA regulations also state that in instances where one or more Federal agencies are involved in an action or group of actions that are directly related to each other because of their functional interdependence or geographical proximity, such agencies are to formally join together in order to facilitate the preparation of a single EIS.[20]

It is clear that the WindFloat proposal and the Jordan Cove proposal are interdependent and interconnected, and that the location of WindFloat was selected primarily to facilitate and enhance the effectiveness of their co-operation. Therefore, in order to comply with the letter, spirit, and intent of NEPA, both facilities must be included within the scope of a single EIS.

As an example of the benefits of a single EIS, BOEM has requested information from interested or affected parties relating to such things as geological and

---

[17] ibid, page 9

[18] Personal telecon with Bonneville Power Administration, Transmission District Office, Eugene, Oregon, Feb.18, 2014, 1:30 PM

[19] 40 CFR 1508.25(a)(1)(ii)(iii).

[20] 40 CFR 1501.5(a)(2)

geophysical conditions in the area, historic and archaeological resources potentially affected by construction and operation, other uses of the area such as commercial and recreational fishing, recreational activities, etc., and other relevant environmental information related to protected species and habitats, birds, fish, etc. These types of data are precisely what an EIS is designed to provide, thus BOEM would not have to independently address these subjects if a joint EIS were to be prepared.

I recognize the inherent difficulties of working as a cooperating agency on an EIS process with FERC as the lead agency, given FERC's penchant for seeking to evade the letter and intent of NEPA while maintaining the appearance of compliance. This is exemplified in the minutes of a bi-weekly cooperating agencies conference call. In the meeting summary, FERC states that "the Principal Power wind turbine project is not part of the Jordan Cove project....". However, FERC then goes on to state that: "However, our DEIS would discuss the Principal Power wind turbine project under Alternatives and Cumulative Effects".[21] Even within the fog of obfuscation that surrounds FERC's EIS process, it is apparent even they recognize the linkage between the two projects.

The U.S. Environmental Protection Agency has addressed this problem also.

FERC had originally attempted to portray the South Dunes Power Plant as a non-jurisdictional facility that did not need to be included in the DEIS for Jordan Cove. The EPA responded by citing Section 40 CFR 1508.25(a)(3) which states that two actions should be evaluated in a single EIS when they are "similar actions, which when viewed with other reasonably foreseeable or proposed agency actions have similarities that provide a basis for evaluating their environmental consequences together, such as common timing and geography". The EPA goes on to require that the FERC "include the South Dunes Power Plant within the scope of the (Jordan Cove) EIS".[22] Given the fact that the WindFloat project is specifically designed and placed so as to be able to offload its power production directly into the South Dunes Power Plant facility in order to power the Jordan Cove LNG facility, it surely must be an integral part of the Jordan Cove EIS.

---

[21] FERC Office of Energy Projects, Docket Nos. CP13-483-000 and CP13-492-000, "Bi-Weekly Federal Cooperating Agencies Conference Call", February 12, 2014.

[22] US EPA, Region 10, "Scoping Comments - Jordan Cove EIS", October 29, 2012, page 4

REQUESTS

I ask that BOEM suspend the planned EA process and table any action relating to the Application for an OCS Renewable Energy Commercial Lease off of Coos Bay by Pacific Power until formal adoption of the Final Record of Decision at the termination of FERC's Jordan Cove EIS process.

I ask that BOEM participate fully and formally as a cooperating agency with FERC in the preparation of the Jordan Cove LNG Export terminal EIS as called for by the existing regulations implementing the National Environmental Policy Act.

Ron Seyller

kara j Lincoln

June 25, 2014

to me, John, ODFW.comments

Thank you for giving me this option to add,

also i am sending this to F+W open comment period for rethinking their budget, as i ask you to review this as well.

i cannot support this proposal at all.

please take a review of what we could do as we are restructuring a US 501.c3 non profit yet to fund raise as we have used a lot of research to rethink + define a global platform. to reach out + link as we focus direct w/students working w/their community, in every community or representatives without schools, sharing how to live local;

down scale footprint of consumption, students + all, co_evolving their curriculum along with them self w/community, as they use the community as an extended classroom + work to restore the ecological sustainable working community + harmonize w/the natural world for the biodiversity + cultural diversity to link + continue, which is not being prioritized.

our program, along w/linking w/locals would empower local communities and encourage students to become more involved in their communities. There needs to be more collaboration w/locals do_in their local `plan w/low impact alternative energy as they put into retrospect above.

This amount of funds should not be put into an experimental program like this. i`ve seen misinformation, and a lack of collaboration with fishermen due to their existing over regulation, which could be changed if we prioritize the building of local communities, such as going thru programs that we are working at collaborating w/others.

Sustainable fishermen could lend valuable insight, but they feel dis empowered due to the lack of consultation due to having limited say as they are incorrectly regulated.

Big funds are interrupting the by-catch in the proposed area (whiting fishery is concerned they weren't consulted as well black cod fisher folks in the area). they state windmills where put on land awhile back unsuccessfully so what happened to that research in regards to this??

There should be greater transparency in DOE assessments and more communication with fishing organizations + community organizations before funds given, not to mention bring in the whole community once sound science is used minimizing even having to bring in people, interfering in their work. as those in EPA + actually too many regulatory boards presently exist, yet are not complying w/sound science. as many are developing leaving negative effects on the natural world + permitting allows them to do so without good ecological assessments. yet new developments continue + old problems continue leaving much stress on all life.

I do not support the wind farm, as I`m unconvinced of its benefits and feel like the money could be better spent, starting from what students would define do_in their homework including projects as i state. Government funds should go to more local, community-oriented programs with greater transparency, so as for each not to waste good energy, even as in these folks doing all this work, especially when if local `plan was done right, their could be a plan for a few on land,

nothing like Dept of Energy is proposing any where if i understood the scientist working on this project..

it is sad to see many good folks w/good input as many that i talked to during your conference be unable to utilize their work efficiently w/the bad science i see that gov is using in this protocol. this must stop for we have sound science on this planet + we all should be looking for prioritizing resources as we use it, to require existing developments exceeding natures limits to resolve. + we suggest welcome them to their local tapering transition program as we are structuring in this `plan w/students.

for many are supporting them wrongly not understanding their is another way.

only then once we do this should new developments come out of the local `plan + locals do it.

i am happy to work w/gov to trigger them to rethink if you pass this on or share w/me a link, for we have solution oriented options globally to hold our self + others accountable locally + beyond.

i actually applied for the WASH grant from US Aid + i was told to do it one way, then others would follow thru with me. meanwhile i was denied w/out them doing what they offered, meanwhile the gentlemen i contacted stated who would tell you this kind of stuff, + i said you did, then he never responded back. so this is just 1 example of much dysfunction that i have experienced as well speaking for others.

perhaps you can share w/me a link to offer a proposal to Dept of Energy + i will try to share how we can focus direct inner/inter personally to collectively restoring natural communities + we have a `plan as well the low impact alternative at a much less of a cost, s people in our project proposed would also become aware, heal + become self empowered changing their footprint, better preparing for natural disasters as we propose rezoning working entire biomes sensitively as our students no longer get whip lashed from EPA or other developers/regulators doing one thing, while sound science is not being used, this is wrong.

i do hold you folks accountable to see that Dept of Energy redirects + use sound science as we locally self develop our communities + share what works, not do for others, not interfere in others ability to self develop, not put puppet govs + this list is lengthy that US now is doing wrong locally as well afar.

please ask yourself do you want to be part of our global solutions or part of the fragmented problems yet think your work is good, + it could be, but not if it is interfering in locals ability to self develop, + you are responding to misinformation, etc...

this over all climate issue is not even using sound science, rather it is being manipulated by those working within legal unethical protocol of the world markets, that students also can work at to stop, as the local `plans support locals to stay in control of their grounds as other`s invest.

+ you people should not take part in it until the dysfunctions of our gov are corrected or gov ends as well UN, due to the many contributing to allowing the oligarchs/lobbyist to rule the gov. vs. do as we suggest use sound science as the rule of law + that would bring peace + end the war mode + false green economies ASAP once locals have global transparency.

i also submit this to F+W for their open comment period for defining their budget due to this is a good example. for i have networked a lot as we circumnavigated the pacific + have been here living on the docks in Charleston seeing how hard FF work. yet they get incorrectly regulated, which is wrong.

Deb Lambert informed me that the open comment period she worked on w/NOAH which allowed people to share these issues, then they agreed maybe the Magusun Stevens Act should be review, for we stated a lot of regulation is a safety factor for FF as well fish, when i see others tell me as w/sports fishing they have to take their photos w/the fish that they cannot keep + by the time they throw it back, why bother.

Sustainable FF should make this call + F+W working w/them at the table will know whom is what as together they teach others or require a test.

F+W should have fair good collaboration w/each local port that FF fish out of, so they can sit down at the table making a local `plan. where as many feel they would not be able to take off work if took time now to try to address the many issues.

F+W should of been able if they would do this, did they? tell you folks early on before any funds put out from Dept of Energy, that other issues need to be resolved. each FF local group needs to have a voice in regulating their fishing grounds + that is presently fragmented. i saw this w/proposed marine reserves. when yet if F+W would take the time to talk to everyone + reestablish some good working respect for each other. + i see they do w/many but not all, it is fragmented. For i knew well F+W have some very good people, but this process is not working as efficiently as it could.

many have quit the industry due to lack of communicating, + yes FF also need a spokesperson to interpret their realities all the time, not just a few some of the time that do it well. rather many speak very well of this detail, yet are working very hard + to just report to F+W in real time, would exhaust them more.

Sustainable FF cannot be beat w/the small commercial fishing industry. They could share a lot if you could come to their level of energy + work with them to define another process. each one could share amazing stories of how it once was + could be before it is too late.

large vessels is another story + small FF can fill you in their as well.

The review of each fisheries should be done with them sitting at the table + they should get equally paid as F+W to do this. Their is no reason why they cannot choose their own weather in all fisheries. As well reports of sports fishing incorrectly is not good + this list is lengthy + all this could be resolved, same w/training FF that are not sustainable. as well F+W that are not connecting w/them, yet regulating those that are + they should not pay the price.

so please rethink your role in all this.

thank you for this opportunity + i hated to see all these resources used in this example, when yet together we can do a way that works if each of you take responsibility + look at the bigger picture here as you talk at the table much sooner w/locals. please do what you can to change your role if needed or policy if can share a better way, after you do your review w/locals.

sincerely, kara j lincoln

kara j Lincoln

June 30 2014

to odfw.comments, John, me

Hello,

please note folks I would like to state a few more ideas to rethink to see how we can help each other;

i understand you are creating few more offices in Oregon, why? consider selling + coming back to your local community + work within the schools, as in community college so they filter down to all ages, + apply reality of people working together.

ex; locals work eye to eye knowing sustainable great ways that are built from each other knowing each other supporting each to communicate. that is not know happening.

you folks have great people preoccupied in various non related ocean survival in real time yet that is the reality of the commercial fisher folks when they go out. yet in all fisheries they cannot even choose when to go out, you folks do. why can you not trust them + define the good ones to work w/+ teach others.

not more added expense of requiring monitors + or their fear of pulling frames + not being able to got to sea, + this list goes on + they can speak best of all this. but sadly they cannot work w/all the misinformed limitations + still make a living due to you folks yet to work out a good communication to simply be in real time + can.

both sides can be relieved of negativity + efficiently put good energy from working together.

please each define how you can live local + work thru the schools as your office, not lavish excess, when many are struggling yet deserve empathy + compassion, plus realize the sound science being lost simply due to lack of verbiage + understanding.

ex; one still fishing at an old age here in Charleston + son has own boat as well as i see grandson having a great awareness as perspective 3rd generation. when grandpa went to the meet he said his piece + the one doing the meet asked if he had a PHD, if not sit down.

enough.

please rethink, kara

PUBLIC SUBMISSION

As of: July 03, 2014
Received: July 01, 2014
Status: Pending_Post
Tracking No. 1jy-8cza-s4iq
Comments Due: July 28, 2014
Submission Type: Web

Docket: BOEM-2014-0050
Notice of Intent to Prepare an Environmental Assessment for Proposed Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf (OCS) Offshore Oregon and Notice of Public Scoping Meetings

Comment On: BOEM-2014-0050-0001
Environmental Assessments; Availability, etc.: Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf Offshore Oregon; Public Scoping Meetings

Document: BOEM-2014-0050-DRAFT-0004
Comment from Dennis Griffin, NA

Submitter Information

Name: Dennis Griffin
Address:
725 NE Summer Street, Suite C
Salem, OR, 97301
Email: dennis.griffin@oregon.gov
Phone: 503-986-0674
Organization: NA

General Comment

This proposed project addresses potential impacts that may result from a commercial wind energy lease on the OCS offshore Coos Bay, Oregon. While BOEM has compiled a very nice report documenting coastal and submerged landforms in the federal waters outside of Oregon' state jurisdiction, submerged lands within the state's three mile territory as well as the adjacent mainland will also be affected by the proposed development. The project facilities will largely be confined to an approximate 15 square mile area within federal waters; however, a transmission cable will be placed running between the facility along the seafloor to the Oregon mainland. This project will affect three primary areas that our office will need to get resource information on in order to complete our review of the project. These areas include: 1) Offshore development in federal lands; 2) offshore component in state waters where the transmission cable will be placed; and 3) all lands onshore that will be affected by the cable until it can link up with an existing

energy system. To address each of these areas Oregon SHPO would like to receive the following information:

1) Offshore development in federal lands – For all submerged lands in federal waters affected by this project, our office will want to receive spatial information regarding the paleolandscape reconstructions and modeling for submerged prehistoric sites. The report written by ICF International, Southeastern Archaeological Research and Davis Geoarchaeological Research (2013) includes GIS information on Oregon's paleo shoreline (Figures 12-14), the creation of a predictive model for site locations (Figures 22-24) and offshore modeling. The results of any mapping of historic shipwrecks off Oregon's coast are also requested. Oregon SHPO would like to receive a spatial copy of this information so that it could be added to the state's databases for use by future researchers. We have been actively seeking spatial data on submerged landforms and historic shipwrecks in order to develop a predictive model for our offshore waters. The efforts of this project will be of great assistance to us in improving our current knowledge.

2) Offshore component in state waters where the transmission cable will be placed -- – For all submerged lands in state waters affected by this project, our office will want to receive spatial information similar to what has been developed in the above noted report. This data layer should include the results of side-scan sonar and sub-bottom profile date as well as any known historic shipwrecks. The applicability of this information will assist our office in recommending the placement of the transmission cable in areas of low potential to contain significant prehistoric and historic resources, in addition to improving our database for future offshore projects.

3) All lands onshore that will be affected by the cable until it can link up with an existing energy system – A pedestrian cultural resource survey with subsurface probing should be conducted on all lands affected by the proposed project. A report detailing the results of this investigation should be sent to our office for review. Please be sure that state filed archaeology and report guidelines are followed for such a study. Our website has a copy of current state guidelines (i.e., http://www.oregon.gov/OPRD/HCD/ARCH/Pages/index.aspx).

PUBLIC SUBMISSION

As of: 7/8/14 5:03 PM
Received: July 04, 2014
Status: Pending_Post
Tracking No. 1jy-8d15-unsd
Comments Due: July 28, 2014
Submission Type: Web

Docket: BOEM-2014-0050
Notice of Intent to Prepare an Environmental Assessment for Proposed Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf (OCS) Offshore Oregon and Notice of Public Scoping Meetings

Comment On: BOEM-2014-0050-0001
Environmental Assessments; Availability, etc.: Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf Offshore Oregon; Public Scoping Meetings

Document: BOEM-2014-0050-DRAFT-0005
Comment from Frederick Taubert, NA

Submitter Information

Name: Frederick Taubert
Address:
2150 S. Ocean Blvd 1 A
Delray Beach, FL, 33483
Email: ftaubertat@gmail.com
Organization: NA

General Comment

The problem is the wind doe not always blow, thus a second power plant must be built and we can't afford both.

No wind please

Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101, Portland, OR 97220-1384
Phone 503-820-2280 | Toll free 866-806-7204 | Fax 503-820-2299 | www.pcouncil.org
Dorothy M. Lowman, Chair| Donald O. McIsaac, Executive Director

July 16, 2014

Bureau of Ocean Energy Management
Pacific OCS Region
Attention: Mr. Greg Sanders, Office of the Environment
770 Paseo Camarillo, 2nd Floor
Camarillo, California 93010
Via http://www.boem.gov/Public-Engagement-Opportunities/

Re: BOEM Notice of Intent to Prepare an Environmental Assessment on the Principle Power Offshore Wind Pilot Demonstration Project

Dear Mr. Sanders:

The Pacific Fishery Management Council (Council) is submitting the attached research questions and comments in regard to the project noted above. Although the environmental assessment has not yet been prepared, the Council believes the Principle Power project will set a precedent for future offshore wind projects and would like to provide the attached comments, given that the comment deadline falls before the Council's next meeting. These comments were previously sent to the Department of Energy in regard to its request for information on researching the environmental effects of offshore wind energy, including the Principle Power project.

Thank you for your consideration.

Sincerely,

D.O. McIsaac, Ph.D.
Executive Director

JDG:csp

Attachment

C: Council Members
Habitat Committee

Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101, Portland, OR 97220-1384
Phone 503-820-2280 | Toll free 866 806 7204 | Fax 503-820-2299 | www.pcouncil.org
Dorothy M. Lowman, Chair; Donald O. McIsaac, Executive Director

October 10, 2013

Michael Hahn
Technical Project Officer
U.S. Department of Energy
1617 Cole Blvd.
Golden, CO 80401
Michael.Hahn@go.doe.gov

RE: RFI DE-FOA-0000911: Researching the Environmental Effects of Offshore Wind at the First U.S. Facilities

Dear Mr. Hahn,

The Pacific Fishery Management Council (Council) has become aware of recent developments in the Government's wind energy program for the U.S. Outer Continental Shelf (OCS). Of particular interest to the Council are actions intended for the Pacific OCS. As you may know, the Council is one of eight Regional Fishery Management Councils established by the Magnuson-Stevens Fishery Conservation and Management Act of 1976 (MSA), and recommends management actions for Federal fisheries off Washington, Oregon, and California. The MSA includes provisions to identify, conserve, and enhance Essential Fish Habitat (EFH) for species regulated under a Council fishery management plan. The MSA defines EFH as "*those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.*" Each Council is authorized under MSA to comment on any Federal or state activity that may affect the habitat, including EFH, of a fishery resource under its authority.

The Council was recently briefed by its Habitat Committee on the Department of Energy's (DOE) April 17, 2013, Request for Information (RFI): DE-FOA-0000911 - "Environmental Research and Observations at the First U.S. Offshore Wind Facilities." The Council appreciates DOE's efforts to reach out to the public and affected entities for input on their future research strategy. There is concern that initial research and research priorities have focused on East Coast environments where offshore wind projects have already been permitted, and may not necessarily meet the research needs of West Coast environments. According to the Bureau of Ocean Energy Management (BOEM), ideal wind speeds for generating wind energy off Oregon (and possibly California and Washington) are located off the continental shelf, farther and deeper than is needed for East Coast projects. Consequently, wind energy installations may have substantial subsurface structure in both the water column and on the seafloor (floating devices, more cabling, extensive mooring), and thus may introduce unforeseen impacts and related research needs not yet defined in the RFI. Surface structures are expected to be more massive than East Coast structures and will be subjected to the harsh conditions of the Pacific Ocean.

Given the anticipated risks associated with offshore development in the Pacific Ocean, it is necessary to consider West Coast conditions and facility design factors when developing a template for research and study of offshore facility construction, deployment, and operation.

Additionally, marine habitat protections differ across the U.S. and suggest a regional approach to establishing research priorities. For instance, MSA requires regional Councils to designate Habitat Areas of Particular Concern (HAPC) within their region. HAPCs are specific habitat types or areas within EFH that are of particular ecological importance in the fish life cycle or are especially sensitive, rare, or vulnerable. For the Pacific region, this includes all rocky reefs, estuaries, kelp forests, eelgrass beds, and seagrass beds, and unique geologic features such as deep water seamounts. EFH in the Pacific region is currently undergoing a periodic review process, as required under MSA, and may result in the designation of additional HAPCs.

The Council was unable to provide comments to DOE on the RFI prior to the May 30, 2013 deadline. However, in response to our request for an extension, Mr. Hahn offered to accept input at any time. The Council agrees with and supports the comments submitted by the state of Oregon (May 30, 2013) in response to the RFI, as well as the sample research questions provided by DOE in the RFI. In addition to those specific research topics and questions already provided, we offer the following for your consideration:

Consultation with the Fishing Industry

- It is imperative that wind energy developers consult with the local fishing industry before projects are sited, in order to avoid important fishing grounds and reduce other impacts to fishermen. For example, a project may block access to fishing grounds even if it is not sited in those fishing grounds. Such impacts could be avoided through advance discussion with fishery stakeholders.

Underwater Acoustics

- What acoustic variables (e.g., sound, pressure, vibration) should be measured to assess acoustic effects on fish? How can the *in-situ* COWRIE [1] studies of the UK be improved upon and designed for the Pacific Northwest to answer additional questions about fish responses to acoustics and EMF (e.g., attract vs. repel)?
- In addition to behavioral responses of fish to acoustic stressors, what are their physiological responses (e.g., injury, reproductive stress, feeding stress)? What potential consequences should be measured (i.e., displacement from spawning/fishing grounds, increased exposure to predation)?
- What are the migration/movement patterns of species likely to be affected by acoustics generated during construction and maintenance? How might knowledge of these patterns lead to the establishment of "in-water work periods" to minimize impacts?

---

[1] COWRIE (Collaborative Offshore Wind Research into the Environment) is an independent body in the UK set up to carry out research into the impact of offshore wind farm development on the environment

Water Column Disturbance

- Does project operation alter (by dampening or increasing) surface, midwater, or bottom currents? And at what distances from the source are these effects detectable? How would changes in current intensity affect demersal and bottom fish species? How would a response be measured?
- To what extent (duration, intensity) does construction affect water turbidity or other water quality characteristics, both in the estuary and in the ocean?
- How does increased turbidity affect fish behavior? Predation? Feeding?

Seafloor Disturbance

- In addition to affecting benthic communities, to what extent, if any, is the structure of soft-bottom substrate altered (e.g., building or eroding sand waves, hills) by project-generated bottom currents?
- What are the recovery times for habitat and benthic organisms subjected to sustained or repetitive injury from anchor chains?
- What methodologies would be used to measure seafloor disturbance?
- What methods can be used to bury electrical cables in deepwater, soft-bottom habitat with minimal disturbance to the sea floor?
- For connecting to the land-based grid, are there methods proven successful at drilling under rocky seafloor, with limited or no impact to the rock habitat?
- What methods will be employed to assess impacts to rocky reef habitat, including associated fish and invertebrate communities?
- Are there alternate methods for setting cable that avoid impacting rocky reef altogether?

Fish Aggregation, Attraction, Biofouling

- How would vertical and horizontal structural components (moorings, cables, towers, etc.), both in the water column and on the bottom, interact with or engage fish species or their prey (e.g., entanglement, collision, attraction)? What are the potential consequences of such interactions at both the species and population level (e.g., increased mortality, predation, geographic transference in population)?
- Are there alternative design/construction considerations that could minimize such interactions?
- Should biofouling of structures be allowed or prevented? How should this issue be assessed?
- Will biofouling increase the potential for equipment failure?
- What options would be considered for reducing biofouling on structural components?
- How do anti-biofouling agents, paint, etc., when applied to device components in port, affect estuarine water quality and habitats? How could impacts be prevented or minimized?

Electromagnetic Frequency EMF (new topic)

- What EMF signatures (frequency and amplitude) from cables or other project components are emitted and possibly sensed by federally-managed fish species and their prey (particularly elasmobranchs, salmonids, and other electro-sensitive species (e.g., sturgeon) during construction? During operation? And at what spatial distances?

- How can EMF signals be dampened to minimize detection by and responses of fish species?
- In addition to behavioral responses of fish to EMF emissions, what are their physiological responses (e.g., injury, reproductive stress, feeding stress)? What are the broader consequences that should be measured (e.g., displacement from spawning/fishing grounds, increased exposure to predation)?

Fishery Interactions/ Collision Potential (new topic)

- Are there design and construction considerations (e.g., depth of cable burial, device array configuration, orientation) that could be compatible with commercial fishing, or that could minimize impacts to commercial fishing?

As described in the RFI, the focus of this initial research strategy is to measure the characteristics of the project that cause impacts. The Council has focused its comments primarily on environmental research topics, but concerns regarding human-use impacts are of equal significance in the development of this new industry, particularly for the fishing industry and West Coast fisheries in general. We look forward to working alongside DOE and BOEM to identify, avoid, and minimize these conflicts, and to achieve the long-term goal of responsible development of this new and promising industry.

Sincerely,

D. O. McIsaac, Ph.D.
Executive Director

JDG:kam

Cc: Council Members
Habitat Committee Members
Groundfish Advisory Subpanel Members
Groundfish Management Team Members
Mr. Chuck Tracy
Ms. Jennifer Gilden

Oregon
John A. Kitzhaber, M.D., Governor

Department of Land Conservation and Development
Oregon Coastal Management Program
635 Capitol Street NE, Suite 150
Salem, Oregon 97301-2540
Phone: (503) 373-0050
Fax: (503) 378-6033
www.oregon.gov/LCD/OCMP

July 18, 2014

Mr. Greg Sanders
BOEM Office of Environment
770 Paseo Camarillo, 2nd fl.
Camarillo, CA 93010

Re: BOEM-2014-0050 EA Scoping Comments

Mr. Sanders,
Thank you for the opportunity to comment on the development of the Environmental Assessement (EA) for the proposed Principle Power WindFloat Pacific Project that would be sited in federal waters approximately 16 NM west of Coos Bay. As noted in the Federal Register Notice dated May 29, 2014, there are a host of environmental concerns that need to be addressed in the EA, including benthic invertebrates, fish, seabirds, marine mammals, commercial and recreational fisheries and vessel traffic. The information and responses to questions provided by the BOEM staff at the scoping meeting in Coos Bay on June 17th and the meeting with fishing interests on June 18th in Charleston, was broadly inclusive of the areas and topics of concern to Oregon state agencies and stakeholders. In addition to the resources and uses noted above, the Oregon Coastal Management Program (OCMP) would recommend that BOEM also evaluate the potential foreseeable impacts that the proposed development activities might have on several other uses that are in the proximity of the lease site.

There are several existing fiber optic cables located to the south of the lease site that land on the ocean shore south of Cape Arago and another is planned for installation in that location in the near future. The EA should delineate the precise locations of these cables and any subsequent plans or studies should clearly acknowledge the need to provide safe access to the cables for servicing and repair.

Oregon has produced a visual resource inventory consisting of ocean view points that are used by the public. The map of these view sheds is available at http://oregon.marinemap.org/. The EA needs to address the potential visual impact the project may have on the affected view sheds based on their proximity to the site and their individual category of importance. The visual resource inventory maps are an example of the type of spatial data that is available on Oregon MarineMap. The OCMP advises BOEM to make use of Oregon MarineMap, as it's a comprehensive compilation of relevant environmental resource and use information that has been thoroughly reviewed by the scientific community, as well as the public and other interested participants in the state's Territorial Sea Plan amendment process.

As indicated by the meeting with fishing interests in Charleston, BOEM has already been made aware of the concerns of the commercial fishing industry regarding the potential loss of access to

productive fishing grounds. The EA needs to determine what those impacts may be in terms of the total fishery and whether the impacts are localized to a particular port.

The EA should also account for the dominant vessel traffic patterns associated with the commercial shipping lanes and managed towlanes emanating from Coos Bay and the adjacent ports, as well as the vessel traffic along the coast between coastal ports.

Lastly, the precise location of the power cable from the development site to shore will need to be delineated in order to evaluate what resources may be impacted by its placement within federal and state waters, and onshore.

The OCMP appreciates this opportunity to comment on the EA for the WindFloat project and looks forward to a continued collaboration with BOEM for this project and others.

Sincerely,

Paul Klarin, Marine Program Coordinator

PUBLIC SUBMISSION

As of: 7/21/14 12:50 PM
Received: July 21, 2014
Status: Pending_Post
Tracking No. 1jy-8dc5-ak7e
Comments Due: July 28, 2014
Submission Type: Web

Docket: BOEM-2014-0050
Notice of Intent to Prepare an Environmental Assessment for Proposed Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf (OCS) Offshore Oregon and Notice of Public Scoping Meetings

Comment On: BOEM-2014-0050-0001
Environmental Assessments; Availability, etc.: Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf Offshore Oregon; Public Scoping Meetings

Document: BOEM-2014-0050-DRAFT-0008
Comment from Jason Busch, Oregon Wave Energy Trust

Submitter Information

Name: Jason Busch
Address:
240 N. Broadway, Ste. 115
Portland, OR, 97227
Email: jasonrbusch@gmail.com
Organization: Oregon Wave Energy Trust

General Comment

Thank you for the opportunity to comment on this important project. On behalf of the Oregon Wave Energy Trust, I wholeheartedly support this project. Ocean renewable energy represents a tremendous opportunity for Oregon to create a new economic driver for our state and region. Ocean energy is also clean, reliable power that will help our nation reduce its carbon output and help us transition to a fossil fuel free society. It is also a benign source of energy, as the industry continues to study and demonstrate. Compared to thermal, nuclear and hydropower, ocean renewable energy is safe, environmentally benign, and can be sustained with no significant effects on people or the planet.

As you consider the environmental studies and data that will be required for this project, please consider that agency risk aversion that slows or prevents these types of projects is simply another way of locking in the status quo of our existing energy paradigm, with all of its attendant ill

effects that are so well documented. If we are to make a meaningful and expeditious transition to fuel sources that reduce climate change and overt environmental degradation, we must allow these types of projects to move forward.

In addition, this project epitomizes the correct approach to working with affected stakeholders. The company has done an excellent job of communicating early and often with stakeholders. Every effort has been made to accommodate other interests. While every effort should be made to minimize adverse effects on other interests, use of the oceans is in the public interest, and existing users must also make efforts to accommodate beneficial new uses, such as ocean renewable energy.

Thank you for helping move our society toward a sustainable energy paradigm.

Jason Busch
Executive Director
Oregon Wave Energy Trust.

UNITED CATCHER BOATS

Washington · Oregon · California · Alaska

Mr. Greg Sanders
Office of the Environment
Bureau of Ocean Energy Management, Pacific OCS Region
770 Paseo Camarillo, Second Floor
Camarillo, CA 93010

July 24, 2014

Re: Notice of Intent - Docket No: BOEM-2014-0050

Dear Mr. Sanders,

I am writing on behalf of the members of United Catcher Boats (UCB) with regard to the request for public comment on BOEM's Notice of Intent for an offshore OCS lease application/proposal submitted to BOEM by Principle Power, Inc. to acquire a commercial wind energy lease for a wind farm development off the coast from Coos Bay, Oregon. Thank you for the opportunity to provide comment.

United Catcher Boats is a commercial fishing vessel trade association that represents the interests of the owners of 72 trawl catcher vessels that participate in the federal fisheries in the Bering Sea, Gulf of Alaska, and the West Coast. Seventeen of our member vessels participate in the West Coast Pacific Whiting mid-water trawl fishery that is managed by the National Marine Fisheries Service (NMFS). These vessels are home-ported in coastal communities in Oregon and Washington. Our members have extensive commercial fishing history in and around Pacific Powers' proposed lease site. If the proposed wind energy lease site location is approved the West Coast Whiting fishery will experience significant displacement and will be negatively impacted.

Our first concern is one of public participation and input into the federal government's offshore energy leasing and permitting process. We first heard about this possible offshore wind farm lease application second-hand while attending a Pacific Fishery Management Council (PFMC) meeting in June 2013.

4005 20th Ave. W - Suite 116, Fisherman's Terminal • Seattle, WA 98199 • Tel. (206) 282-2599 • Fax (206) 282-2414

With this offshore energy lease application, the interested members of the public with extensive history of use of the federal fishery resource received no direct input from BOEM or from Principle Power, Inc. until receiving the RFI notice in the Federal Register on Sept. 30, 2013, well after the deadline for Principle Powers' submittal of a lease application in the Spring of 2013 and after Principle Power made its decision on a possible lease site location. In attending BOEM's 'open house' meeting in Coos Bay on June 17, 2014 we learned that there was outreach by BOEM and Principle Power with the local Coos Bay commercial fishing fleet during the selection of the proposed lease site location but that neither BOEM or Principle Power conducted any outreach with the offshore Whiting fleet or with the Pacific Fishery Management Council. Had this outreach occurred with the Pacific Whiting fleet prior to the site selection by Principle power, a lease site location might have been proposed that did not negatively impact the historic mid-water Whiting trawl fleet or the near shore crab and shrimp fleet's historic fishing grounds.

Therefore, we request that BOEM in their development of their Environmental Assessment increase the proposed number of alternatives from the existing two alternatives to include a third alternative that provides another possible site location that does not harm the Whiting trawl fleet. It is imperative that representatives of wind energy companies and BOEM consult with representatives of the fishing industry who are dependant on the waters of any proposed energy lease site for their livelihood. Negative impacts to the current users of such a site can be mitigated or reduced significantly if the location of the offshore energy lease site is selected with input from **all** users of the marine resource off the coast of Coos Bay.

We request that BOEM require Principle Power amend its lease application with coordinates of a different wind farm site location that has no negative impact to the current users of the federal fishery resource.

The collection and use of commercial fishery location data has evolved significantly due to advancements in electronic technology (Vessel Monitoring Systems, Graphic Information Systems, and satellite communication systems) and the deployment of on-board NMFS federal fishery observers. By using this fishery information, we have reviewed the tow locations of the whiting trawl fleet fishing waters north of Cape Blanco and south of Heceta Bank and also inside the proposed lease site location and quantified the amount of Pacific Whiting harvested over the past 12 years in this area. From 2000 to 2010 the Mothership and Catcher/Processor sectors of the Whiting fishery harvested 5,608 mt of whiting with 125 haul locations between 43.38 and 43.47 degrees N Latitude and between 124.675 and 124.735 degrees longitude, the boundaries of the proposed lease site. Because many of the whiting fleet's hauls originated and finished near the proposed lease site and portions of the hauls passed through the proposed site, we examined the number of tows and the tonnage of hauls nearby the proposed site. From 2000 to 2010 the Mothership and

Catcher/Processor fleets harvested 60,023 mt of whiting with 1,297 haul locations between 43.28 and 43.57 degrees latitude and between 124.575 and 124.835 degrees longitude. The results of our inquiry show that the fishing companies who harvest Pacific Whiting are dependent on fishing in and around the proposed lease site. The proposed lease site resides within the Whiting fleet's historical fishing grounds. A closure zone to fishing within and around the proposed lease site will have negative impacts to the U.S. Whiting fleet that hail from ports up and down the West Coast. We also can use this fishery location data to know the depth at which the Whiting fishery occurs and the distance off shore. We also know the areas and locations off of Coos Bay where the Whiting trawl fleet has not towed for whiting over the past 20 years. This information can be used in the EA to determine a more suitable location for a new wind farm lease site. See Attachment 1 attached to our letter for charts or plotter pictures that depict the historic trawl tow location in and near the proposed lease site and the amount of fishing effort in and near the proposed site.

Having an understanding of how a commercial mid-water trawl is used to harvest Pacific whiting is important when considering the location of a permanent, immobile platform like a wind farm float. A typical tow involves deploying the net to the desired trawl depth, towing the net at the correct depth for many miles and hours, and then retrieval of the trawl or net. A whiting trawl fisherman can tow his net for about 3 to up to 12 nautical miles and for up to 6 hours or more, at speeds averaging 3 knots. Fishermen use sonar electronics to help locate, follow, and then overtake schools of Whiting. This process occurs over 10 to 50 miles and a fisherman can't simply make a detour around a stationary object when towing a huge mid-water net. Whiting fishermen also use the entire West Coast fishing grounds, from the northern region off of the US/Canadian boarder off of Washington to the southern portion of the Whiting fishing grounds located off the northern coast of California, to pursue and harvest Pacific Whiting.

Another big concern for Whiting fishermen is the avoidance of what is known as 'bycatch' species, primarily comprised of the major west coast rockfish species. The whiting fishery has hard caps, or limits on how many rockfish that can be taken as incidental catch. Managing bycatch of rockfish species results in the fleet's need for fishing grounds where the fleet experiences relatively low encounter rates of rockfish bycatch species. This puts greater value on areas like the grounds off of Coos Bay that have low bycatch rates.

Our next concern is the determination of conducting an Environmental Assessment (EA) or and Environmental Impact Statement (EIS). We believe BOEM's initial decision to conduct an EA rather than conduct an EIS is in error. The May 29, 2014 Notice of Intent states that "BOEM intends to prepare an Environmental Assessment" and then follows this statement by stating near the end of the *Federal Register* notice that they could determine during the EA preparation that an EIS is needed. This process requires a Finding of No Significant Impact (FONSI) determination. In our opinion, the impacts are

significant as well as controversial which, under NEPA, require an EIS process. The public and the marine environment will be better served if BOEM conducts an EIS rather than and EA at this time. BOEM seems to think that permitting a wind farm lease is a simple project with little impact. We question this assumption. To our knowledge the U.S. government has never permitted this type of floating wind energy project. Environmental impacts to both marine and seabird populations are not understood and a thorough investigation into the possible impacts conducted prior to issuance of any permits is not only prudent but also required by federal law.

In the fall of 2013 the Pacific Fishery Management Council's Habitat Committee received a briefing on this wind energy proposal and provided detailed comments to the U.S. Department of Energy in an October 10, 2013 letter to Mr. Michael Hahn (attached at Attachment 2 to this letter). This committee discussed the issue of habitat protection and disturbances due to the permitting of an offshore wind energy project and urged consideration or examination of effects to: 1) Underwater acoustics; 2) Water column disturbance; 3) Seafloor Disturbance; 4) Fish aggregation; 5) Electromagnetic frequency; and 6) Fishery interactions. Given this level of uncertainty and possible impacts to the marine environment, we feel conducting an EA is insufficient.

In summary, BOEM should not grant the offshore lease to Principal Power until the company and BOEM have engaged and consulted with representatives of the Whiting fishery and modified its proposed lease location. The location of the site needs to be reconsidered so as to not negatively impact the historical users that are dependant on the fishery resources that reside within this offshore area.

Thank you for the opportunity of provide comment and for considering our requests. We look forward to working with BOEM on the selection of a proposed site that is a 'win-win' for the renewable energy development industry and the commercial fishermen with decades of history fishing off of the Oregon Coast.

Sincerely,

Brent C. Paine
Executive Director

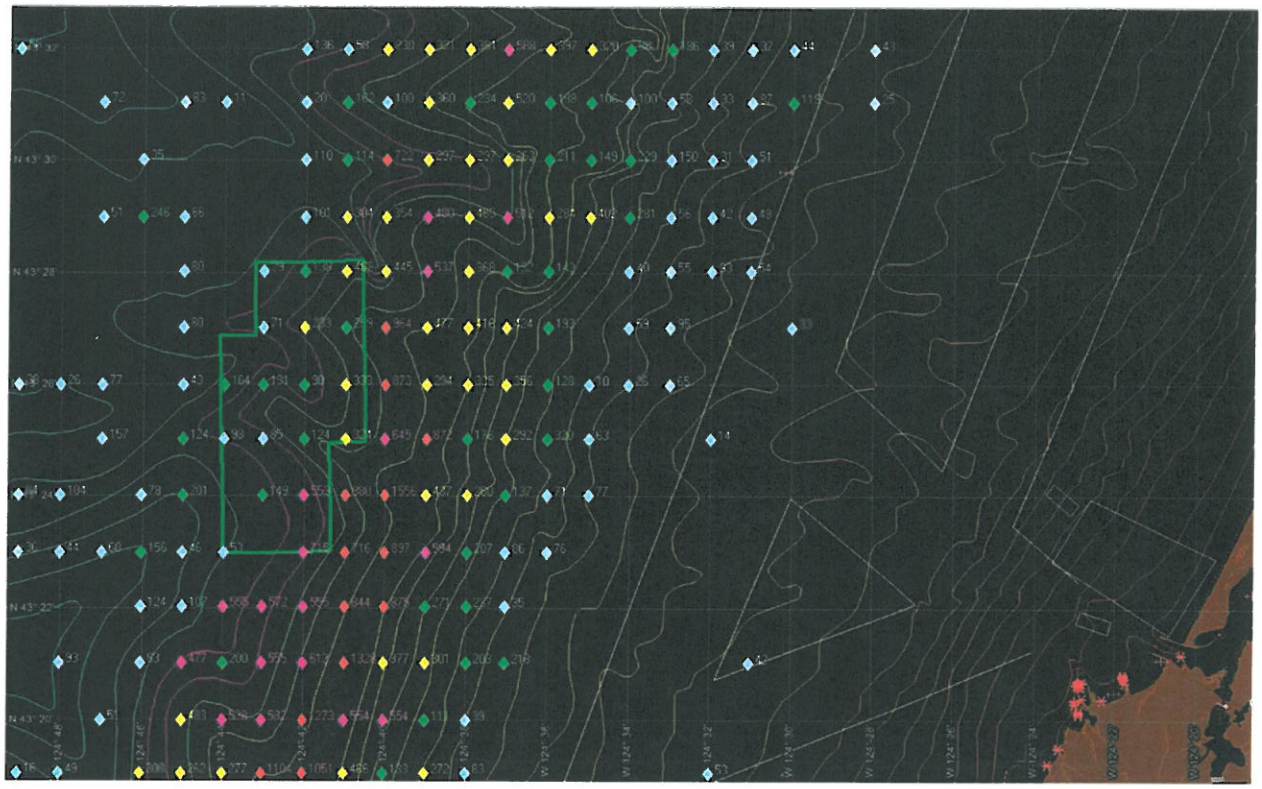
Attachment 1. Whiting Fleet Effort and Harvest Information

The proposed lease area is an important fishing ground for the whiting fleet. From 2000 to 2010 the Mothership (MS) and Catcher Processor sectors harvested 5,608 tons of whiting with 125 haul locations between 43.38 and 43.47 degrees latitude and between 124.675 and 124.735 degrees longitude, the boundaries of the proposed lease area. The average bottom depth for haul locations in this area is 200 fathoms.

Because the haul location is only a point of retrieval of a tow that may cover 3 to 10 miles, it will impact tows that begin outside the boundaries of the proposed area. It is reasonable to look at an additional 1/10 of a degree north and south as well as east and west of the proposed lease area. From 2000 to 2010 the MS and CP sectors harvested 60,023 tons of whiting with 1297 haul locations between 43.28 and 43.57 degrees latitude and between 124.575 and 124.835 degrees longitude. The average bottom depth for haul locations in this area is 168 fathoms.

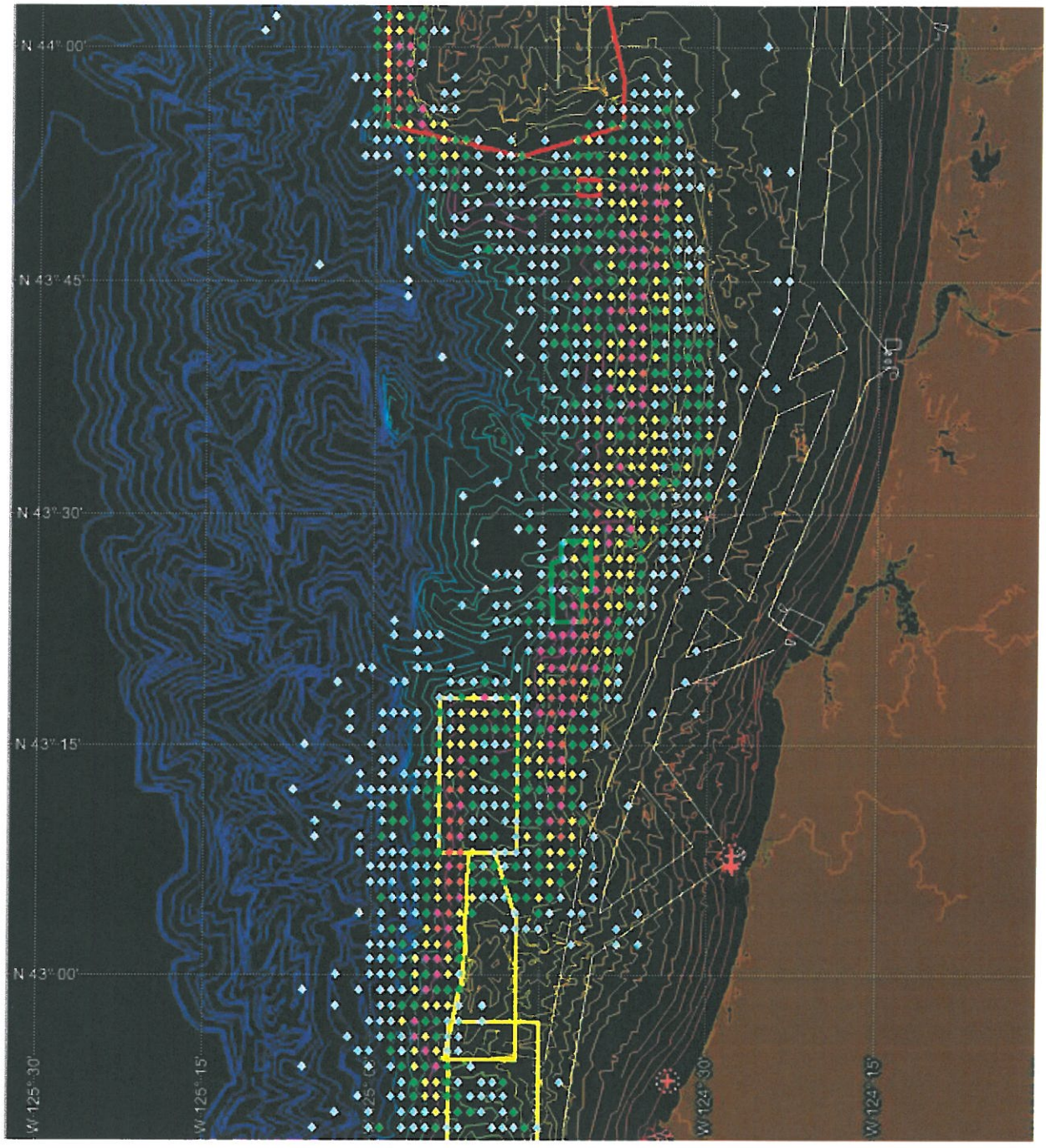
The figure below shows whiting haul locations from 2000 to 2010. The proposed lease area is box outlined in green. The bathymetric contour lines in purple are the 200 to 250 fathom contours. The symbols are color coded to the number of hauls (blue less than 3, red more than 15).

The following figure is the same data with the tons of catch shown next to the haul location symbol.



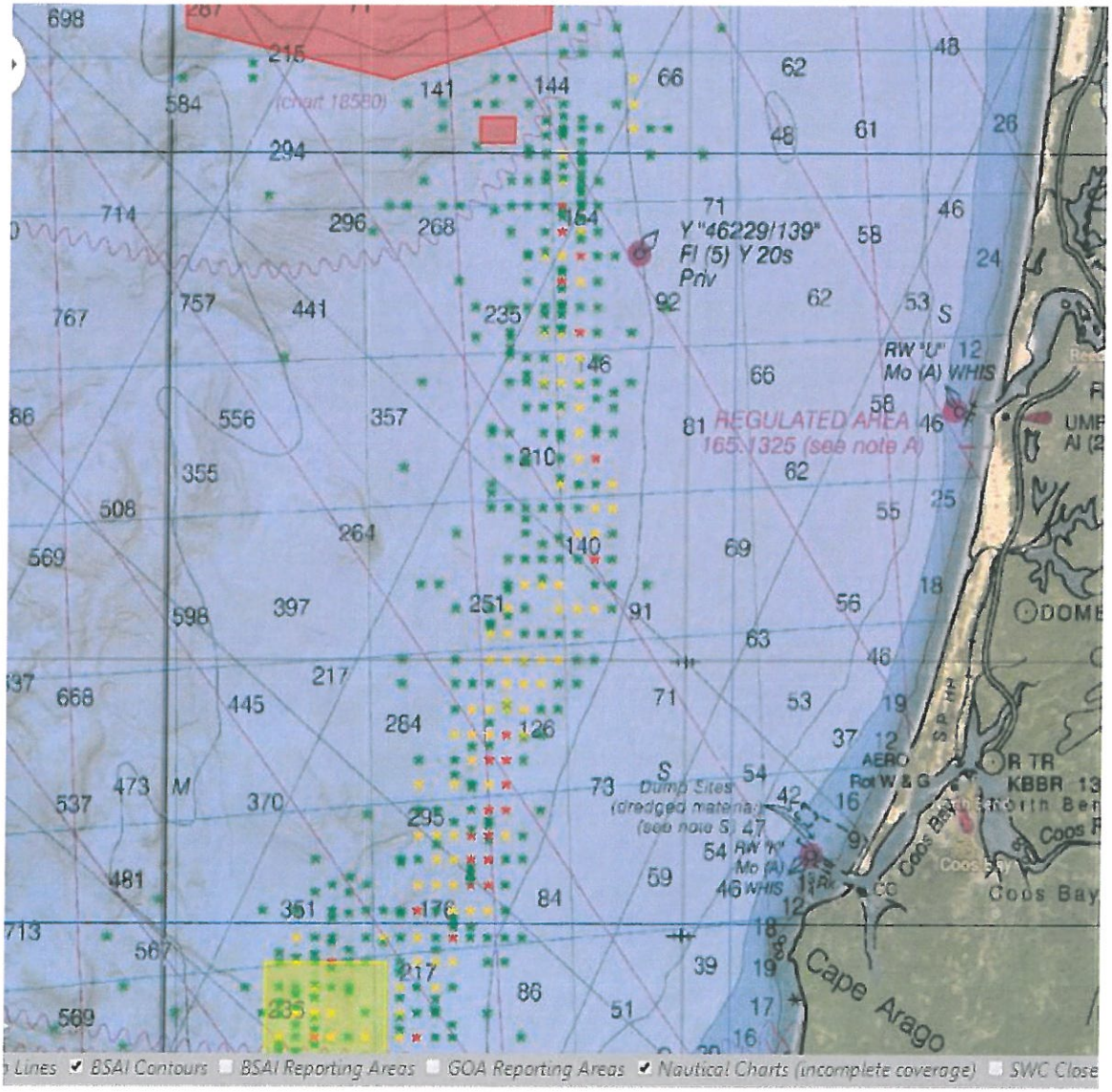
The east side of the proposed area is less than a half mile from the most heavily fished contour around 165 fathoms.

The next figure shows a broader area, with the same color scale. The boxes outlined in red and yellow lines are areas the Mothership Whiting Cooperative established as voluntary rockfish avoidance areas.



United Catcher Boats, July 24, 2014

The Whiting fleet uses a data collection, monitoring and analysis company called Sea State, Inc. to help manage the fleet's whiting harvest and bycatch of rockfish. Sea State's website has tools for mapping the catch for the period 2008 through the present. The map below shows just the Mothership sector's catch. The color scale for the haul locations on this map shows locations with less than 100 tons as green and with more than 250 tons as red. Since 2008 the MS sector has harvested 6,938 tons from tows with haul locations between 43.38 and 43.47 degrees latitude. Including a 1/10th degree buffer around the proposed wind farm lease location, the MS sector harvest has been 20,452 tons.



Attachment 2

Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101, Portland, OR 97220-1384
Phone 503-820-2280 | Toll free 866 806 7204 | Fax 503-820-2299 | www.pcouncil.org
Dorothy M. Lowman, Chair | Donald O. McIsaac, Executive Director

October 10, 2013

Michael Hahn
Technical Project Officer
U.S. Department of Energy
1617 Cole Blvd.
Golden, CO 80401
Michael.Hahn@go.doe.gov

RE: RFI DE-FOA-0000911: Researching the Environmental Effects of Offshore Wind at the First U.S. Facilities

Dear Mr. Hahn,

The Pacific Fishery Management Council (Council) has become aware of recent developments in the Government's wind energy program for the U.S. Outer Continental Shelf (OCS). Of particular interest to the Council are actions intended for the Pacific OCS. As you may know, the Council is one of eight Regional Fishery Management Councils established by the Magnuson-Stevens Fishery Conservation and Management Act of 1976 (MSA), and recommends management actions for Federal fisheries off Washington, Oregon, and California. The MSA includes provisions to identify, conserve, and enhance Essential Fish Habitat (EFH) for species regulated under a Council fishery management plan. The MSA defines EFH as "*those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.*" Each Council is authorized under MSA to comment on any Federal or state activity that may affect the habitat, including EFH, of a fishery resource under its authority.

The Council was recently briefed by its Habitat Committee on the Department of Energy's (DOE) April 17, 2013, Request for Information (RFI): DE-FOA-0000911 - "Environmental Research and Observations at the First U.S. Offshore Wind Facilities." The Council appreciates DOE's efforts to reach out to the public and affected entities for input on their future research strategy. There is concern that initial research and research priorities have focused on East Coast environments where offshore wind projects have already been permitted, and may not necessarily meet the research needs of West Coast environments. According to the Bureau of Ocean Energy Management (BOEM), ideal wind speeds for generating wind energy off Oregon (and possibly California and Washington) are located off the continental shelf, farther and deeper than is needed for East Coast projects. Consequently, wind energy installations may have substantial subsurface structure in both the water column and on the seafloor (floating devices, more cabling, extensive mooring), and thus may introduce unforeseen impacts and related research needs not yet defined in the RFI. Surface structures are expected to be more massive than East Coast structures and will be subjected to the harsh conditions of the Pacific Ocean.

Given the anticipated risks associated with offshore development in the Pacific Ocean, it is necessary to consider West Coast conditions and facility design factors when developing a template for research and study of offshore facility construction, deployment, and operation.

Additionally, marine habitat protections differ across the U.S. and suggest a regional approach to establishing research priorities. For instance, MSA requires regional Councils to designate Habitat Areas of Particular Concern (HAPC) within their region. HAPCs are specific habitat types or areas within EFH that are of particular ecological importance in the fish life cycle or are especially sensitive, rare, or vulnerable. For the Pacific region, this includes all rocky reefs, estuaries, kelp forests, eelgrass beds, and seagrass beds, and unique geologic features such as deep water seamounts. EFH in the Pacific region is currently undergoing a periodic review process, as required under MSA, and may result in the designation of additional HAPCs.

The Council was unable to provide comments to DOE on the RFI prior to the May 30, 2013 deadline. However, in response to our request for an extension, Mr. Hahn offered to accept input at any time. The Council agrees with and supports the comments submitted by the state of Oregon (May 30, 2013) in response to the RFI, as well as the sample research questions provided by DOE in the RFI. In addition to those specific research topics and questions already provided, we offer the following for your consideration:

Consultation with the Fishing Industry

- It is imperative that wind energy developers consult with the local fishing industry before projects are sited, in order to avoid important fishing grounds and reduce other impacts to fishermen. For example, a project may block access to fishing grounds even if it is not sited in those fishing grounds. Such impacts could be avoided through advance discussion with fishery stakeholders.

Underwater Acoustics

- What acoustic variables (e.g., sound, pressure, vibration) should be measured to assess acoustic effects on fish? How can the *in-situ* COWRIE [1] studies of the UK be improved upon and designed for the Pacific Northwest to answer additional questions about fish responses to acoustics and EMF (e.g., attract vs. repel)?
- In addition to behavioral responses of fish to acoustic stressors, what are their physiological responses (e.g., injury, reproductive stress, feeding stress)? What potential consequences should be measured (i.e., displacement from spawning/fishing grounds, increased exposure to predation)?
- What are the migration/movement patterns of species likely to be affected by acoustics generated during construction and maintenance? How might knowledge of these patterns lead to the establishment of "in-water work periods" to minimize impacts?

---

[1] COWRIE (Collaborative Offshore Wind Research into the Environment) is an independent body in the UK set up to carry out research into the impact of offshore wind farm development on the environment

Water Column Disturbance

- Does project operation alter (by dampening or increasing) surface, midwater, or bottom currents? And at what distances from the source are these effects detectable? How would changes in current intensity affect demersal and bottom fish species? How would a response be measured?
- To what extent (duration, intensity) does construction affect water turbidity or other water quality characteristics, both in the estuary and in the ocean?
- How does increased turbidity affect fish behavior? Predation? Feeding?

Seafloor Disturbance

- In addition to affecting benthic communities, to what extent, if any, is the structure of soft-bottom substrate altered (e.g., building or eroding sand waves, hills) by project-generated bottom currents?
- What are the recovery times for habitat and benthic organisms subjected to sustained or repetitive injury from anchor chains?
- What methodologies would be used to measure seafloor disturbance?
- What methods can be used to bury electrical cables in deepwater, soft-bottom habitat with minimal disturbance to the sea floor?
- For connecting to the land-based grid, are there methods proven successful at drilling under rocky seafloor, with limited or no impact to the rock habitat?
- What methods will be employed to assess impacts to rocky reef habitat, including associated fish and invertebrate communities?
- Are there alternate methods for setting cable that avoid impacting rocky reef altogether?

Fish Aggregation, Attraction, Biofouling

- How would vertical and horizontal structural components (moorings, cables, towers, etc.), both in the water column and on the bottom, interact with or engage fish species or their prey (e.g., entanglement, collision, attraction)? What are the potential consequences of such interactions at both the species and population level (e.g., increased mortality, predation, geographic transference in population)?
- Are there alternative design/construction considerations that could minimize such interactions?
- Should biofouling of structures be allowed or prevented? How should this issue be assessed?
- Will biofouling increase the potential for equipment failure?
- What options would be considered for reducing biofouling on structural components?
- How do anti-biofouling agents, paint, etc., when applied to device components in port, affect estuarine water quality and habitats? How could impacts be prevented or minimized?

Electromagnetic Frequency EMF (new topic)

- What EMF signatures (frequency and amplitude) from cables or other project components are emitted and possibly sensed by federally-managed fish species and their prey (particularly elasmobranchs, salmonids, and other electro-sensitive species (e.g., sturgeon) during construction? During operation? And at what spatial distances?

- How can EMF signals be dampened to minimize detection by and responses of fish species?
- In addition to behavioral responses of fish to EMF emissions, what are their physiological responses (e.g., injury, reproductive stress, feeding stress)? What are the broader consequences that should be measured (e.g., displacement from spawning/fishing grounds, increased exposure to predation)?

Fishery Interactions/ Collision Potential (new topic)

- Are there design and construction considerations (e.g., depth of cable burial, device array configuration, orientation) that could be compatible with commercial fishing, or that could minimize impacts to commercial fishing?

As described in the RFI, the focus of this initial research strategy is to measure the characteristics of the project that cause impacts. The Council has focused its comments primarily on environmental research topics, but concerns regarding human-use impacts are of equal significance in the development of this new industry, particularly for the fishing industry and West Coast fisheries in general. We look forward to working alongside DOE and BOEM to identify, avoid, and minimize these conflicts, and to achieve the long-term goal of responsible development of this new and promising industry.

Sincerely,

D. O. McIsaac, Ph.D.
Executive Director

JDG:kam

Cc: Council Members
Habitat Committee Members
Groundfish Advisory Subpanel Members
Groundfish Management Team Members
Mr. Chuck Tracy
Ms. Jennifer Gilden

American Seafoods Company

July 24, 2014

Greg Sanders
BOEM Pacific OCS Region
770 Paseo Camarillo, Second Floor
Camarillo, California 93010

RE: Notice of Intent to Prepare an Environmental Assessment– Docket No. BOEM–2014–0050; MMAA104000

Dear Mr. Sanders:

American Seafoods Company (ASC) submits these comments in connection with the proposed wind farm project off Coos Bay, Oregon. ASC is one of the largest participants in the Pacific whiting fishery. We hold five of the ten catcher processor permits, one of the six mothership permits, and one of the thirty-seven mothership catcher vessel permits. We participate in both the catcher processor and the mothership sectors of the fishery. ASC is a member of the Pacific Whiting Conservation Cooperative (PWCC) and United Catcher Boats (UCB). We are submitting these comments as a supplement to the comments submitted by PWCC and UCB.

ASC has participated in the Pacific whiting fishery since 1992 and has been a member of the PWCC since its formation in 1997. During the course of the Pacific Whiting season, we employ approximately 650 people aboard our vessels (officers, crew, and fish processors). Our company and these individuals will be harmed by the wind farm as it is currently proposed because the proposed site is a very productive fishing area. ASC strongly recommends that an Environmental Impact Statement (EIS) is the only appropriate vehicle to analyze the economic and environmental effects of the proposed wind farm. An EIS is also critical to analyze the cumulative effects of the proposed pilot project and future offshore energy development directly related to the information provided by the pilot program.

ASC urges the Bureau of Ocean Energy Management (BOEM) to conduct a full EIS in their consideration of the wind farm proposal submitted by Principle Power. As noted by the PWCC, UCB, and other stakeholders, the proposed wind farm project will have significant detrimental effects on participants in the Pacific whiting fishery. Those impacts need to be analyzed in an EIS. ASC also agrees that an Environmental Assessment is inadequate because the proposed project is likely to hinder conservation and management of federally protected rockfish and salmonids, further demonstrating the need for an EIS.

ASC has long participated in the fishery management arena, which is an open and transparent public process where issues and problems are fully scoped and vetted with meaningful and substantive public input. In stark contrast, our recent participation in BOEM's outreach process leads us to believe that the decision to move forward with the proposed wind farm at the location proposed by Principle Power is a done deal. Public outreach, at this stage, appears aimed at

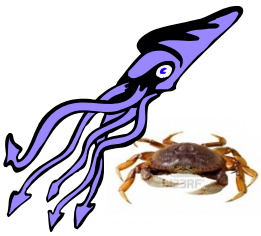
Market Place Tower 2025 First Ave. Suite 900 Seattle, Washington 98121 USA
(206) 448-0300 Sales and Marketing FAX (206) 448-0505 Operations FAX (206) 448-0303

informing affected stakeholders about what will happen to them rather than garnering public input as intended under the National Environmental Policy Act scoping process. At the very least, BOEM should develop an EIS to analyze the impacts of a decision that appears to already have been made.

In summary, ASC requests that BOEM conduct an EIS to analyze the significant impacts that will occur because of the proposed wind farm. We also urge BOEM to consider alternative sites that will not have detrimental effects on our company, our employees, and the Pacific whiting fishery.

Sincerely,

Inge Andreassen, President
American Seafoods Company LLC





Coalition of Coastal Fisheries

Coastal Office: PO Box2472, Westport, WA 98595 – 360 642 3942, Cell 360 244 0096
Administrative Office: 806 Puget St. NE, Olympia, WA 98506 – ofc: 360 705 0551, Fax 360 705 4154

…….Serving the needs of the coastal fishing industry and coastal fishing communities……

Acting Director Walter D. Cruickshank, BOEM 25 July 2014

Docket ID: BOEM-2014-0050

- Wind Energy-Related Development Activities EA comments
- WindFloat Pacific Project – Coos Bay, OR.
- **Fishing Preserves** introduced to protect high value fishing grounds conflicts
- BOEM must fix a broken process to identify no conflict ocean energy sites
- Proposal of 4 actions to take to avoid damaging the fishing industry now and in the future

The Coalition of Coastal Fisheries represents thousands of family wage fishing jobs from San Diego, CA to Bellingham, WA. Many of our members fish multiple coastal fish species including Whiting in the area of the WindFloat Pacific Project which is located in high value whiting grounds. Coastal fishermen have been most at RISK as the result of actions taken by other BOEM energy lease processes anywhere in the nation that they have occurred; this Principle Power lease off Coos Bay, OR is no different – FISHING at RISK.

Commercial fishing provides an irreplaceable and substantial economic contribution to coastal communities, their culture, their way of life, and fishing JOBS lost cannot be replaced by ocean energy facilities. Fishing provides local and worldwide healthy seafood that is often the only access the general public has to the ocean's bounty; people do not eat electricity even though they may desire more of it. All too often the price of fish is measured in lives lost. Not only the fishing community, but all the nations citizens and beyond will lose critical access to seafood if industrial facilities are allowed without full consideration of Protecting and Preserving Fishing as a Sustainable Existing Use; a subset product of every public engagement that has clearly identified that CMSP MUST, "Protect and Preserve Existing Sustainable Uses" i.e. FISHING as the primary FOCUS around which energy is to be located without conflict or harm to existing uses - FISHING.

Coalition of Coastal Fisheries fully supports coastal marine water policy, planning, and management that meet the NEEDS of the coast where new use

(industrial energy) avoids conflict and harm to existing fisheries; however, this WindFloat Pacific Project is in an area where large percentage of the whiting processor fleet catches its product. Failure to identify High value fishing areas has occurred. High value fishing areas do not exist everywhere and once identified energy projects which can move over a bit MUST. WindFloat must move over and how far needs to be identified through face to face negotiations with all sectors of the fishing industry that fish near the current WindFloat Projects current location.

Four FOCUS ACTIONS ITEMS:

1) **BOEM Communication Hotline** must set up with a real process that specifically has a direct channel of open transparent communication with all sectors of the fishing industry affected in the initial stages of the energy lease process that is currently derelict in reaching all fishing industry sectors and identifying areas of no conflict no harm to fishing – witness whiting conflict.

2) **IMPROVE USE MAPPING**: At the BOEM/Oregon Taskforce meeting it became clear that the BOEM PROUA use mapping project was deficient in identifying high value fishing areas in NW waters of both Oregon and Washington. The PROUA use maps are not sufficient to site industrial ocean energy sites and avoid conflict with high value fishing grounds. At the same meeting it also became clear that BOEM had NO intention of avoiding conflicts with fishing and had NO process in place to achieve no conflict. BOEM officials also stated quite clearly that fishing existed everywhere so it made no difference where BOEM allowed energy leases; WRONG conclusion. Fish congregate year after year in certain hotspots depending on species and ecosystem needs. I see absolutely NO effort on BOEM's part to locate and avoid high value fishing hotspots or spawning and nursery areas for juvenile fish. Corrective action required.

At that Taskforce meeting the Coalition of Coastal Fisheries suggested a solution to this BOEM complete lack of process to avoid a conflict situation. That solution's name is **Fishing Preserves**.

Washington and Oregon are ideal coastal areas to identify and institute FISHING PRESERVES as there are no large energy demand centers currently on the coast of either Oregon or Washington and populations have been static for the last couple of decades with electrical demand flat.

Fishing Preserves would avoid the gradual creep of individual FONSI's put in place one at a time until the cumulative impact deteriorates fishing to the point of severe damage to the next generation of fishing communities.

3) **FISHING PRESERVES**: maintain historical Public Trust open public access areas where high value fishing hotspots cannot be displaced by new "fixed" uses that become exclusionary areas to fisheries that have historically existed. Fixed new uses like ocean energy, open ocean aquaculture, and other exclusionary designations would be prohibited activities or designations in Fishing or Shellfish Preserves. Historical Public Trust Doctrine uses like commercial, recreational, and tribal fishing, recreation, conservation, navigation, commerce, tourism, aesthetics, etc. would continue be allowed in Fishing Preserves. Fishing Preserves will protect and preserve sustainable fishing strongholds for current and future generations of seafood producing communities. Fishing Preserves would not be set up by BOEM but by CMSP activity of the adjoining states with sufficient fishing industry representation to insure all fishing sectors are addressed and utilize the federal consistency clause in the CZMA to achieve federal cooperation.

4) **Industry to Industry Negotiations: In addition to FISHING PRESERVES** BOEM must set up an industry to industry face to face negotiations to locate the new use (industrial ocean energy in this case) to avoid conflict and harm to existing uses, i.e., fishing. There are at least 2 such groups existing in off shore marine waters in the Northwest that find a way to co-exist without harm to either industry: The crabber/towlanes are mutually agreed upon lanes where tugs & tows can tow without interference from fishing gear. The Oregon Fishermen's Cable Committee coordinates fishing activities and transpacific telecommunication cables by selecting and burying the cables to minimize conflict and provide a method of insuring NO damage to these valuable cables. To date ocean energy siting has not reached this level of mutual agreement to locate new industrial ocean energy sites and needs to happen. This mutual industry to industry negotiation is needed to avoid conflict. It is obvious that the current BOEM system is NOT avoiding conflict and needs to accommodate a change that can better accommodate existing sustainable uses (fishing, commerce, recreation, etc.) and new use in OCS waters of the Pacific Northwest where industry to industry negotiations have succeeded for going on fifty years. The existing BOEM process of locating new uses like ocean energy is absolutely BROKEN and needs a new process put in place that first and foremost locates **Fishing Preserves** and still negotiates with existing users where the new use is best suited to avoid conflict and harm in multiuse areas where fishing is currently occurring. Accurate coast wide mapping of existing high use areas need to be the starting point of negotiations. The existing PROUA maps are not adequate to the task of avoiding conflict; rhetoric alone is not enough.

These 4 steps to improve location of new use by BOEM in the OCS must be put in place to avoid current and future conflict and harm to exiting uses. National Ocean Policy was sold as a bottom up process where input at the local coastal area was the primary focus for coastal needs and is now a process in dire need of repair.

Thank you for considering our request to maintain this critical high value fishing area for the whiting fishermen that has provided a large percent of annual income for so many for so long. Face to face negotiations are in order and this WindFloat Pacific Project is still flexible enough to move. No anchors and no transmission cable has been laid and it must not be laid until all sectors of the fishing community and other users such a commerce and recreation are brought into an open transparent and meaningful process to negotiate and save the existing uses from abuse by a highly speculative venture that may never reach a point of profitability in these waters. This WindFloat placement failure is an opportunity for correction moving forward in the Pacific NW. Every community has its special needs that BOEM has a responsibility to identify and meet in its quest to lease out exclusive use areas in our offshore waters that restrict historical Public Trust Doctrine uses on the OCS to avoid conflict.

Why place existing proven JOBS at severe RISK for a speculative venture that is not able to even fund its own existence and currently relies 100% on taxpayer subsidies to even begin work on developing the project, let alone succeed at producing a reliable source of cost effective offshore energy at a competitive price without co-generation to fill in when the wind is calm. Taxpayer taxes should not be used to put existing taxpaying businesses out of a JOB.

Dale Beasley, President CCF
Commercial fisherman for 45 years

Pacific Whiting Conservation Cooperative

American Seafoods • Glacier Fish Co. • Trident Seafoods

A Partnership to Promote Responsible Fishing

July 25, 2014

Greg Sanders
BOEM Pacific OCS Region
770 Paseo Camarillo, Second Floor
Camarillo, California 93010

RE: Notice of Intent to Prepare an Environmental Assessment– Docket No. BOEM–2014–0050; MMAA104000

Dear Mr. Sanders:

I am writing on behalf of the Pacific Whiting Conservation Cooperative (PWCC) about the Notice of Intent to Prepare an Environmental Assessment (EA) for the potential lease on the Outer Continental Shelf offshore of Oregon, that is, the Principle Power, Inc. WindFloat Project. The PWCC is a voluntary harvest cooperative comprised of the three companies eligible to participate in the catcher-processor sector of the Pacific whiting fishery, which occurs within the proposed project area. PWCC member companies participate in all aspects of the fishery, including harvesting and processing, and are, therefore, directly affected by the proposed development. As detailed below, the PWCC firmly believes that the proposed wind float project will have significant, negative economic and environmental impacts. It is incumbent upon the US Bureau of Ocean Energy Management (BOEM) to conduct an Environmental Impact Statement (EIS), which is the only appropriate analytical vehicle for a project of this scope and magnitude, especially to evaluate the cumulative impacts of the current pilot project and subsequent projects that are a direct result of the current proposal.

The PWCC repeats and emphasizes its statement from their October 2013 letter in regard to the Request for Interest (RFI) filed for this same project -- While this current Notice of Intent pertains specifically to a potential lease to Principle Power, Inc. for an offshore alternative energy project, the current process has much broader implications in terms of the National Ocean Policy (NOP) and related Coastal and Marine Spatial Planning (CMSP) processes. The fishing industry expressed deep concerns about the NOP because of the absence of meaningful stakeholder involvement in the development of the NOP and its implementation. Concerns were also expressed about the creation of a new federal bureaucracy that could usurp existing Regional Fishery Management Council authorities. Moreover, while the fishing industry heard from the Obama Administration that fishery managers and scientists would be integral participants in NOP and CMSP processes, the Principle Power project appears to demonstrate that federal officials with no fisheries management expertise are vested with the authority to approve projects that could potentially harm vibrant and sustainably-managed fisheries. West coast fishery participants are proud of our progressive and innovative approaches to sustainably managing ocean resources. We are also proud of our collaborative working relationship with state and federal fishery managers. However, the fishing industry is concerned that these well-established relationships will count for naught as new ocean uses are considered under the NOP and CMSP processes. A multitude of fisheries occur within the areas contained in the current proposal. Displacement of those fisheries will inflict significant economic harm. Therefore, it is incumbent upon BOEM and NOAA Fisheries to ensure that proposals for west coast offshore energy projects are fully analyzed via EISs (rather than EAs) and considered within the current fishery management framework.

In contrast to the broad, comprehensive, and inclusive process apparently envisaged by the NOP, BOEM failed to engage with all affected stakeholders during the critical initial development of the proposed site plan. Moreover, it appears BOEM delegated this critical task to project proponents rather than directly soliciting input from affected parties before the proposed site was selected. Stakeholder engagement during development of the proposed site plan was limited to a small region of the coast and appears to have been couched in terms of economic revitalization for coastal communities adjacent to the project site. Engagement with the local community and economic revitalization are both worthy endeavors. However, the proposed project will significantly impact fishery participants who were not consulted before the site was selected. Moreover, it appears that at this juncture it is well-nigh impossible to alter the current site plan. The sum of this flawed process is that the significant economic impacts of this project have not been considered by the project proponents nor BOEM. Therefore, before this project proceeds it is incumbent upon BOEM to conduct an EIS to fully analyze the significant economic impacts that will be caused by this project.

This flawed process is also marred by a lack of clarity about the true scope of this project, that is, (1) are there other viable sites that could be considered? and (2) is the project dependent upon completion of a liquefied natural gas terminal at Jordan Cove in Coos Bay, Oregon? In the NOI, BOEM references the May 15, 2013 proposal from Principle Power. The May 2013 request states: "The Coos Bay location was selected after examination of other potential locations including sites near Pt. Conception in Central California and off of Humboldt County in Northern California. A National Renewable Energy Laboratory (NREL) study (NREL 2010) suggests that all three locations have strong and suitable wind resources, and market conditions in California are the highest priced on the West Coast. The existence of the Jordan Cove Energy Project (JCE) at Coos Bay and its ability to purchase power from [the Wind Farm Project] created a strong market opportunity. In addition, the electric infrastructure being developed in association with the Jordan Cove project (the natural gas fired South Dunes Power Plant) created an obvious grid interconnection opportunity. Finally, Coos Bay's history as an industrial port and the fact that the Conde McCullough Memorial Bridge, which spans the bay, is east of the port's infrastructure and planned development were viewed as beneficial. These features distinguished Coos Bay as the preferred location for the Wind Farm Project." In summary, in their proposal, Principle Power explicitly states that alternative sites are available, but that the proposed site was selected because of the JCE. However, recent statements by Principle Power and BOEM suggest that the JCE is no longer integral to the proposed project. If the former is the case, that is, the project is dependent upon the JCE, then an EA is inadequate and an EIS is required to fully consider and analyze the direct, indirect, and cumulative economic and environmental effects of this project as a whole, not simply the wind float farm in isolation. If the latter case is true, that is, the proposed project is not dependent upon the JCE, then it is wholly inadequate to only consider two alternatives (that is, no action or the site off of Coos Bay) because project proponents explicitly state that alternative sites exist and were considered. In short, if the JCE is not part of the equation then there is no rational reason why alternative sites cannot be considered. This lack of clarity compels the need for an EIS and demonstrates that simply relying on an EA is inadequate.

The PWCC is concerned about the direct impact the current proposal will have on access to productive Pacific whiting fishing grounds. The Attachment at the end of this document details the importance of the proposed area to the Pacific whiting fishery. When reviewing the attachment, it is critical to understand that the location data provided is based on the end of a fishing tow and, therefore, the impacts are likely to be far greater than displayed because the haul location is the end point of a tow that might cover upwards of ten nautical miles, including areas outside the proposed site. In addition, the graphical representation cannot display the effect the proposed area will have on fishing behavior. When fished, a whiting trawl net can be as large as 25 meters tall, 50 meters wide, and 150 meters long. Successful (and safe) fishing requires the vessel operator to have sufficient area to "fly" their net in the water column. Obstructions, such as a wind turbine, hinder safe and effective fishing.

In addition to the significant impacts on fishing operations and safety, the proposal will also significantly impact the ability of the Pacific whiting fishery to fish in an area of historically lower bycatch of federally-protected rockfish and salmonids. Success in the Pacific whiting fishery requires a balance between catching whiting and avoiding incidental catch of non-whiting species. Loss of fishing areas creates an imbalance where the whiting fishery is precluded from operating in a "clean" fishing area and forced to fish in areas with a greater risk of catching incidental species. The end result of this imbalance is the potential for tens of millions of dollars in lost revenue if the whiting fishery is closed because it could not access areas that would have allowed the fishery to avoid depleted or endangered species.[1] Moreover, the proposal will have significant environmental effects on the conservation of these species of concern. Fishery managers and the fishing industry have worked in concert for ten years to develop management systems that provide access to target species while minimizing environmental impacts on species of concern. The proposal will have a significant impact on these management systems and the conservation of these species.

These general concerns are shared widely amongst west coast fishing interests. In their October 2013 letter to BOEM, the PWCC provided a copy of a letter from the PFMC to the U.S. Department of Energy that details several areas that are of concern to the PFMC. The PWCC believes that the PFMC raises a series of significant issues that require full analysis in an EIS, including consultation with the fishing industry; underwater acoustics; water column disturbance; seafloor disturbance; fish aggregation, attraction, biofouling; electromagnetic frequency; and fishery interactions/collision potential.

Furthermore, the US Marine Mammal Commission (in their October 2013 letter to BOEM) stated that "development of wind energy sources should proceed in a thoughtful and deliberate manner with regard to its impact on the marine ecosystem, including marine mammals. Efforts to assess and reduce potential effects to marine mammals require a thorough understanding of potential risks associated with each stage of wind energy development; the collection of preliminary baseline information on marine mammal abundance, distribution, habitat use, behavior, and ecology; and monitoring of marine mammals and the marine environment throughout the life cycle of the project." The Oregon Department of Fish and Wildlife (ODFW, in their October 2013 letter to BOEM) stated that "the project has the potential to affect fisheries, habitat, fish, and wildlife resources that are within ODFW's statutory purview. Concerns include: Marine mammals – altered migration, acoustic harassment, physical collision or entanglement; Avian species (birds and bats) – collision, lighting; Fish – aggregation, electromagnetic fields; Sea turtles – entanglement, electromagnetic fields; Fisheries – space use conflicts, snag hazards, cabling, effects on stocks, altered prey abundance; [and] Habitat – new hard substrate (habitat conversion), cabling around rock and deep sea coral, shoreline crossing, estuarine development." The 2013 BOEM RFI also generated responses from conservation organizations and interested stakeholders, all of whom expressed concern about the significant environmental impacts that would be caused by the proposed wind farm project. Again, the PWCC believes there is compelling rationale for conducting a full EIS before this project proceeds.

---

[1] BOEM spoke to this concern in the document – The Identification of Outer Continental Shelf Renewable Energy Space-Use Conflicts and Analysis of Potential Mitigation Measures – the following statement pertains to all fisheries and fishing areas along the U.S. west coast:

"Although fishermen in a given fishery may seek the same kind of habitat, the actual location (e.g., in state waters, on the OCS) can vary considerably given the variability in the North Coast's ocean environment and conditions. Moreover, and especially important, fish move (some more than others) intra- and inter-annually. In order to catch them, fishermen move as well – they "follow the fish." As a result, fishermen highly value broad access to the ocean to better enable them to apply and build their cumulative knowledge of ocean conditions, fishing areas, and fish distribution and behavior, knowledge that is central to their safety and success."

Finally, public statements by DOE officials (e.g., at the recent Oregon Alternative Energy Task Force meeting) make it clear that the current project is a pilot project that will be scaled up to more areas along the US west coast. The combined effects of this series of projects will create cumulative impacts that need to be fully considered at this stage, not later. The pilot project is not occurring in isolation; therefore, its impacts should not be considered in isolation from the cumulative impacts that will occur when it is scaled up. This provides further evidence of the need to conduct an EIS.

Thank you for providing this opportunity to comment and for considering our views.

Sincerely,

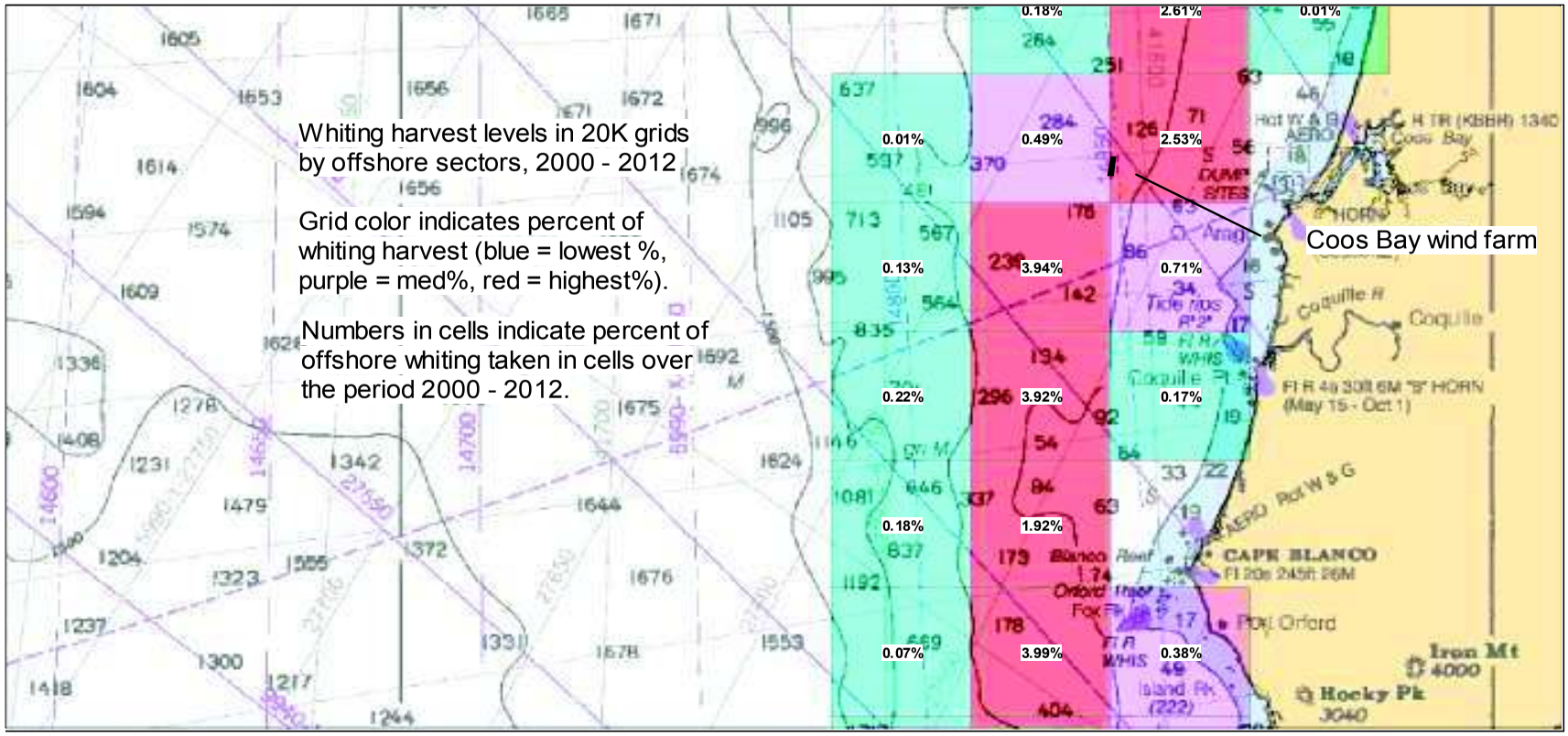
Daniel A. Waldeck
Executive Director

Attachment: Pacific Whiting Harvest In and Adjacent to the Proposed Wind Farm

CC: Michael Boots, President's Council on Environmental Quality
Sam Rauch, NOAA Fisheries
Donald McIsaac, PFMC
Will Stelle, NOAA Fisheries, West Coast Region
John Stein, NOAA Fisheries, Northwest Fisheries Science Center
Caren Braby, Oregon Department of Fish and Wildlife

Attachment

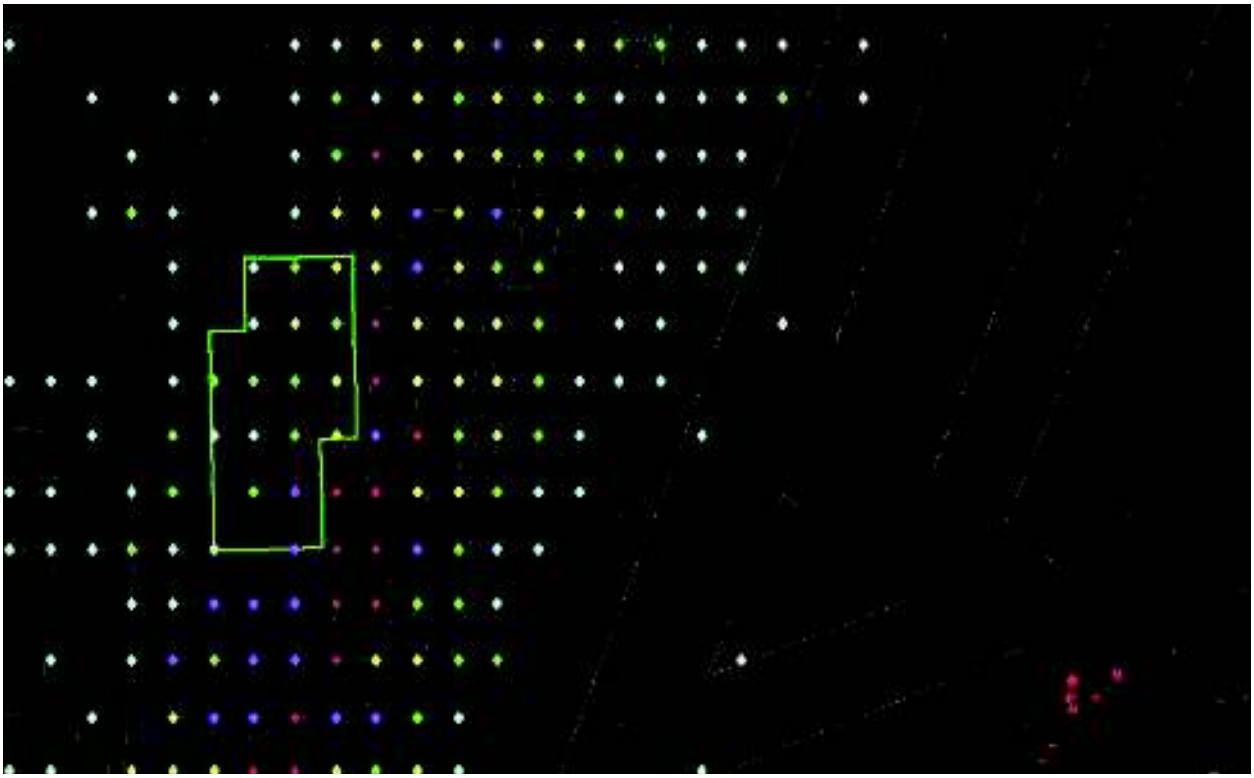
Pacific Whiting Harvest In and Adjacent to the Proposed Wind Farm



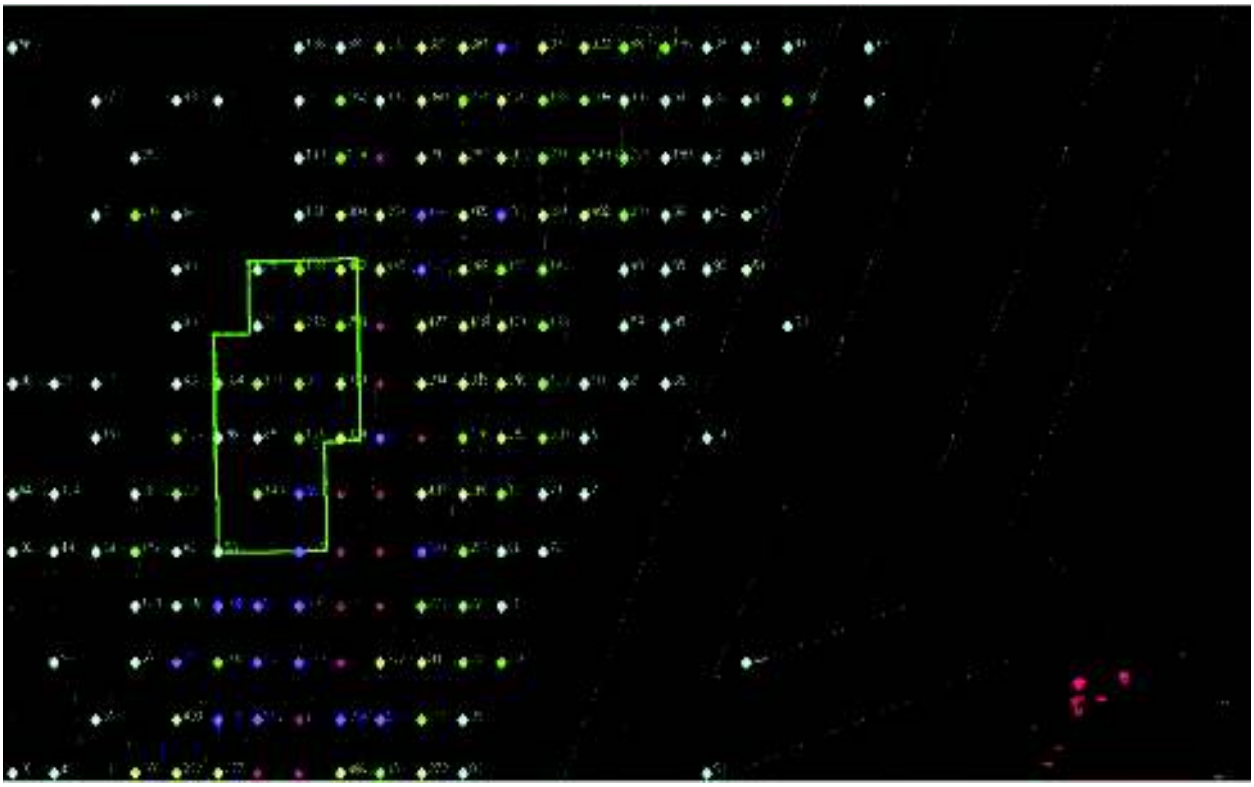
The proposed lease area is an important fishing grounds for the whiting fleet. From 2000 to 2010 the MS and CP sectors harvested 5608 tons of whiting with 125 haul locations between 43.38 and 43.47 degrees latitude and between 124.675 and 124.735 degrees longitude, the boundaries of the proposed lease area. The average bottom depth for haul locations in this area is 200 fathoms.

Because the haul location is only a point of retrieval of a tow that may cover 3 to 10 miles, it will impact tows that begin outside the boundaries of the proposed area. It is reasonable to look at an additional 1/10 of a degree north and south as well as east and west of the proposed lease area. From 2000 to 2010 the MS and CP sectors harvested 60,023 tons of whiting with 1297 haul locations between 43.28 and 43.57 degrees latitude and between 124.575 and 124.835 degrees longitude. The average bottom depth for haul locations in this area is 168 fathoms.

The figure below shows whiting haul locations from 2000 to 2010. The proposed lease area is box outlined in green. The bathymetric contour lines in purple are the 200 to 250 fathom contours. The symbols are colour coded to the number of hauls (blue less than 3, red more than 15).

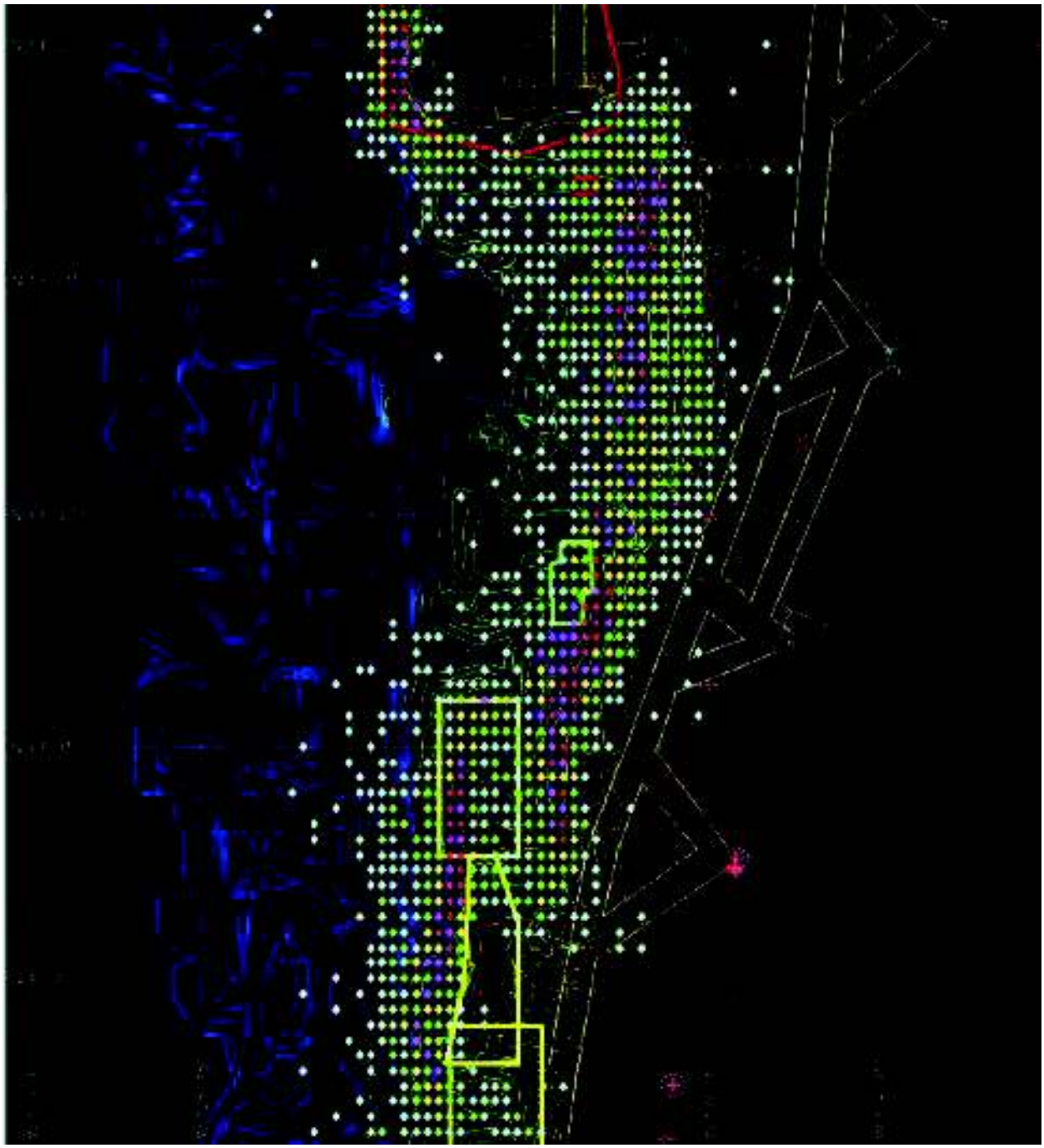


The following figure is the same data with the tons of catch shown next to the haul location symbol.

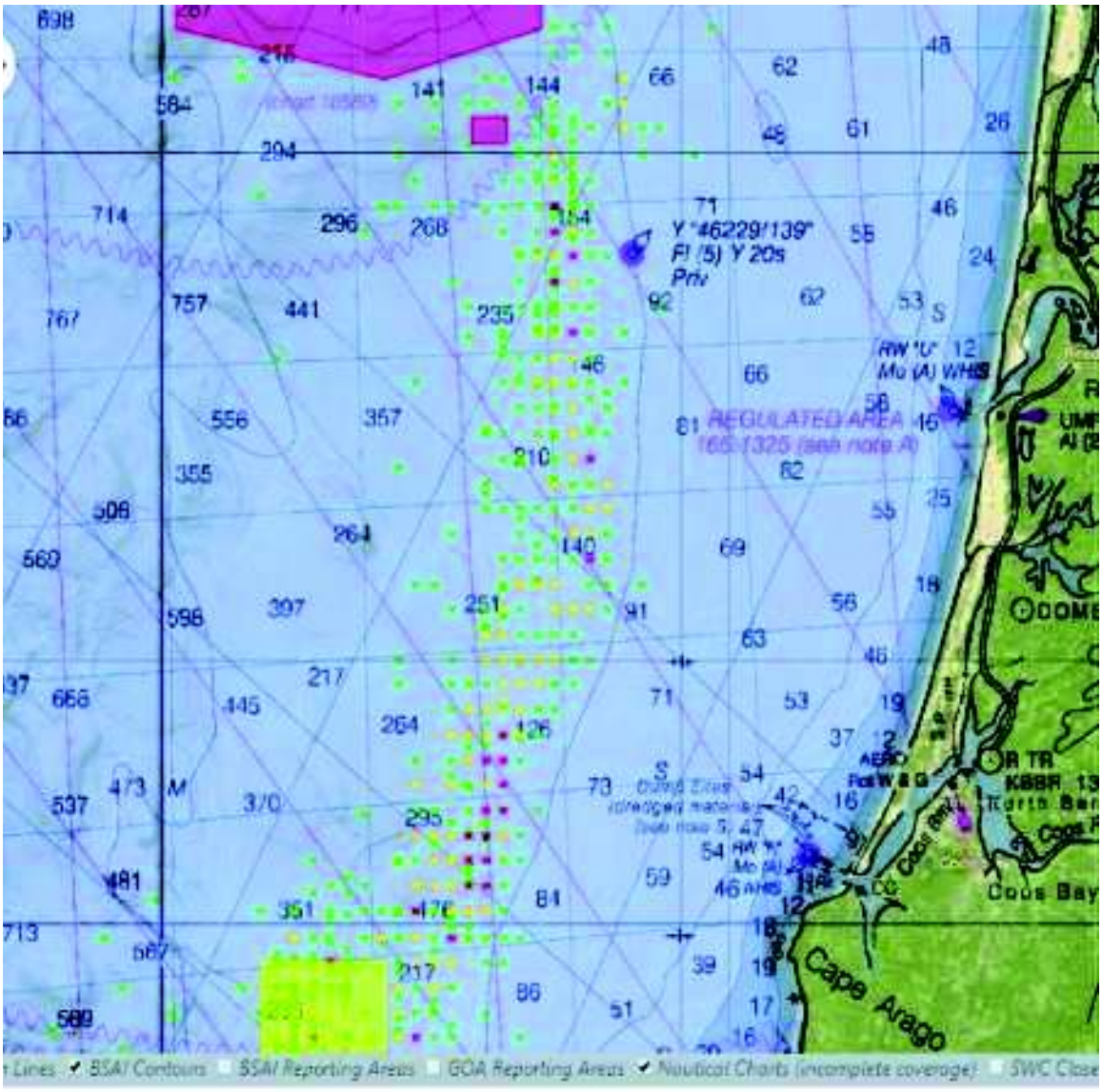


The east side of the proposed area is less than a half mile from the most heavily fished contour around 165 fathoms.

The next figure shows a broader area, with the same colour scale, showing the WMC Heceta Bank closed area and the Coquille advisory area.



Sea State's website has tools for mapping the catch for the period 2008 through the present. This map shows just the Mothership sector's catch. The colour scale for the haul locations on this map shows locations with less than 100 tons as green and with more than 250 tons as red. Since 2008 the MS sector has harvested 6938 tons from tows with haul locations between 43.38 and 43.47 degrees latitude. Including a 1/10th degree buffer, the MS sector harvest has been 20,452 tons.



Below, I've tried to put the proposal map on about the same scale as above.

Phoenix Processor Limited Partnership

333 First Avenue West, Seattle, WA 98119 USA tel: (206) 286-8584 fax: (206) 286-8810

July 25, 2014

Greg Sanders
Office of Environment
Bureau of Ocean Energy Management, Pacific OCS Region
770 Paseo Camarillo, Second Floor
Camarillo, CA 93010

Re: Notice of Intent - Docket No: BOEM-2014-0050

Dear Mr. Sanders,

I am writing on behalf of Phoenix Processor Limited Partnership ("PPLP") with regard to the request for public comment on BOEM's Notice of Intent for an offshore OCS lease application/proposal submitted to BOEM by Principle Power, Inc. to acquire a commercial wind energy lease for a wind farm development off the coast of Coos Bay, Oregon. PPLP has longstanding, legitimate commercial interests in the proposed lease area that would be negatively impacted by the proposed lease and which must be considered by BOEM in its decision to approve or deny the application.

PPLP actively participates in the US Pacific whiting fishery, which occurs in federal waters off the coast of the Western United States, including the area of the proposed lease site at issue in this docket. PPLP operates two seafood processing ships that create seafood products at-sea from raw fish delivered by independent fishing vessels. These processing ships are commonly known as "motherships" that provide markets to fleets of smaller fishing vessels. PPLP annually supports between 7 to 10 catcher vessels from both Washington and Oregon state, typically supporting 3 or 4 at any given time. PPLP's motherships collectively process approximately 38% of the annual Pacific whiting mothership sector allocation, and its diverse seafood products are sold into global markets through its affiliated management company, Premier Pacific Seafoods, Inc. In the mothership sector, PPLP owns an MS/CV-endorsed limited entry trawl permit and two mothership processing (MS) permits; in the shoreside trawl fishery, PPLP also owns a Quota Share (QS) Permit, whiting QS, and QS of other groundfish species. The limited partners of PPLP also own and operate boats active in both the mothership and shoreside sectors of the Pacific whiting fishery. PPLP is a member of United Catcher Boats, an industry association, and the Whiting Mothership Cooperative, which is the fishery cooperative approved by the National Marine Fisheries Service for the mothership whiting fishery.

I have reviewed the comments prepared and submitted by Brent Paine, Executive Director of United Catcher Boats and current Trawl At-Large representative to the Pacific Fishery Management Council (PFMC), Groundfish Advisory Subpanel (GAP). I have also reviewed comments prepared and submitted by Dan Waldeck, Executive Director of the Pacific Whiting Conservation Cooperative and current At-Sea Processor representative to the PFMC GAP. PPLP supports these comments and incorporates them by reference.

I attended BOEM's public scoping meeting/workshop in Coos Bay on June 17, 2014, and appreciated the information provided at that session. As it was explained to me, BOEM's authority is merely to approve or deny the application by Principle Power for the proposed lease. BOEM cannot adjust the site location; for an alternate site to be proposed, Principle Power would have to retract its application and submit a new application specifying a new location. I also understand that BOEM seeks input for its Environmental Assessment to inform its decision to approve or deny the existing application, and that if BOEM determines the impacts are significant, it will prepare an Environmental Impact Statement to analyze those impacts.

The attendance at the scoping workshop of the applicant's representative, Kevin Bannister, was particularly informative, especially his candor in explaining the application process from his perspective. Astonishingly, Mr. Bannister expressed his ignorance of the Pacific whiting fishery, which is surprising since BOEM's own prior analytical documents report it as the largest commercial fishery on the west coast of the United States.[1] Instead, Mr. Bannister said that he thought that reaching out to nearshore fishermen in the immediately adjacent community of Coos Bay satisfied his company's obligation to "tick the box" on the application to demonstrate Principle Power having considered impacts to the fishing community. It is regrettable that due diligence on the part of the applicant was treated as a box-ticking exercise rather than a legitimate undertaking to arrive at a compatible site selection. Mr. Bannister also expressed that due to the company's own financial constraints, Principle Power is unwilling to retract, revise, and resubmit its application in order to cure its defective pre-application stakeholder engagement process. Perhaps if these constraints were so important the applicant should have done a better job of identifying and engaging with affected communities in the first place.

Discussion at the scoping meeting with several BOEM participants and contractors revealed a common misperception that whiting fishermen could just move their fishing activities elsewhere. This attitude displays a lack of familiarity with the management of the fisheries, with restrictions on where vessels can and can't deploy their nets and constraints such as the need to avoid areas of relatively high encounters of protected bycatch species and conflicts with other users. Moreover, these comments demonstrated a lack of understanding of the technical limitations of midwater trawl fishing and how exclusion from traditional grounds would disrupt fishing activities beyond the footprint of the lease area. An informed decision cannot be based on a lack of knowledge; the impacts of the proposed lease on the whiting fishery will need to be analyzed to cure these misconceptions before a decision can be made.

---

[1] *Final Programmatic Environmental Impact Statement for Alternative Energy Development and Production and Alternate Use of Facilities on the Outer Continental Shelf*, OCS-EIS/EA MMS 2007-046, October 2007, Chapter Four, Affected Environment at 4-295 ("In terms of landing weights, Pacific hake was the dominant species in the Pacific region overall") (*available at* http://www.boem.gov/Renewable-Energy-Program/Regulatory-Information/Guide-To-EIS.aspx, *last accessed* July 25, 2014); *see also*, National Oceanic and Atmospheric Administration, *NOAA Fish Watch* ("Pacific whiting is the most abundant commercial fish species on the U.S. West Coast and supports one of the largest fisheries, by volume, in the United States.") (*available at* http://www.fishwatch.gov/seafood_profiles/species/whiting/species_pages/pacific_whiting.htm, *last accessed* July 25, 2014).

At the scoping meeting, one of Mr. Bannister's consultants emphasized that this 30MW project was a demonstration project, and that they project future demand for similar projects to reach 5,000MW over the next 25 years. If five 6MW wind energy installations require 15 square miles as proposed in this lease application, simple math suggests that 2,500 square miles will be locked up for wind farms in 25 years. At what point will the Pacific whiting fishery be completely foreclosed? Unlike the wind energy industry, the whiting fishery does not have the luxury of utilizing land-based sites.

The use of marine space is multidimensional and the proposed lease would impact several of these dimensions. The proposed lease would significantly impact the human environment, due to the project's preemption of marine space and the reasonably foreseeable displacement effects, the adverse economic burden it would impose on those displaced and on others that are impacted by such displacement, and the increased harm to protected species and species of concern due to not only the displacement but also the proposed installation itself. These impacts need to be analyzed. As the first step ("demonstration project") in a long-term plan to roll out more and more wind farms along the coast, the cumulative impacts of these impacts need to be analyzed as well.

To fully consider the significant impacts of its decision to approve or deny the lease application, BOEM should prepare an EIS; an EA is insufficient to analyze the complexity of current uses and impacts that would occur through disturbance of existing uses. A comment and response process is necessary to assure that ignorance and misconceptions demonstrated in the scoping session are corrected before an analysis is relied upon for a record of decision. Only through preparation of a Draft EIS, opportunity for the affected public to comment on the draft, and a final EIS with the agency's response to those comments, will these impacts be adequately considered to inform BOEM's decision. PPLP looks forward to BOEM's decision to prepare an EIS, reviewing its Draft EIS, and providing more thorough comments to BOEM to assist in the development of a Final EIS to inform its record of decision on the application.

Sincerely,

James Mize
Safety & Compliance Manager
Premier Pacific Seafoods, Inc.
(On Behalf of Phoenix Processor Limited Partnership)

F/V Seeker, Inc.
PO Box 1010
Newport, OR 97365

July 25, 2014

Greg Sanders
BOEM Pacific OCS Region
770 Paseo Camarillo, Second Floor
Camarillo, California 93010

RE: Notice of Intent – Docket No. BOEM–2014–0050

Dear Mr. Sanders:

I am writing on behalf of the fishing vessel Seeker about the Notice of Intent to Prepare an Environmental Assessment (EA) for the potential lease to Principle Power for wind float development.

Overview: The west coast whiting fishery is very important to the three west coast states (CA, OR and WA) and the United States as a whole, primarily because of three factors: its large impact to domestic jobs, its place as one of the most environmentally sound fisheries in the world, and as an efficient domestic supply of protein. There are a finite number of areas on the west coast where whiting historically congregate, and the proposed wind float project site is in one of the best such congregation areas off the southern Oregon coast. The potential negative impact in economic and environmental terms cannot be overstated, and should be fully vetted in an Environmental Impact Statement (EIS), particularly in light of the extremely flawed process that lead to the site selection without proper engagement with and participation from the whiting fleet.

Background: There are three primary whiting coops on the west coast to which most whiting vessels are members. Sea States, Inc. collects catch data for the coops to be used for coop management. This historical whiting catch data was mapped for the purpose of showing density of historical catch by area, and these maps have been previously submitted to BOEM. These maps demonstrate what whiting boat captains already knew, and that is the wind float proposed project site is in one of the finite locations on the west coast where whiting typically congregate. Vessels have historically towed right through the proposed site and hauled back either inside the proposed site or just south of the proposed site. This leads to the spatial impact of the project being larger than the project site itself.

Two other reasons the spatial impact of the project would expand are A) captains will make sure they have at least a half mile buffer from wind float cables to protect their expensive fishing gear and B) introducing the wind floats, cables, and anchors

into the area that is currently conducive to whiting will change the characteristics of the project area and surrounding area.

Bycatch is any species caught other than the target species, and particularly those species that have limiting catch quotas for the purpose of protecting that species. Fishing is said to be "clean" when very few bycatch species are caught and "dirty" when too much of bycatch species are caught. West coast whiting is one of the cleanest fisheries domestically and internationally, and the finite number of places where whiting congregate such as this one are some of the cleanest fishing locations because of their density of target species relative to presence of bycatch species; but this project could change area characteristics and would be just another factor that turns what has been one of the most productive areas on the west coast to one of the least.

The whiting coops use the catch data to determine if bycatch rates are high enough to trigger a move in fishing location. If this method was not employed, hard caps on catch amount of bycatch species would be reached and fishing seasons would be shut down. Vessels sometimes move several times up and down the coast during a couple of weeks of fishing due to bycatch concerns, which shows the efficiency of the whiting fishery is already compromised. If one of the cleanest and most productive areas is removed from the whiting fishery as an option, then the fishing inefficiencies due to bycatch constraints would be compounded.

Project Impacts: The negative environmental impacts from losing one of the cleanest, most productive fishing areas are:

1) Increased bycatch species caught to achieve same whiting harvest levels due to the requirement to avoid the area and fish in less productive target species areas with higher bycatch of non-target species
2) Lengthened fishing seasons (because of increased location moves due to bycatch and fishing in less efficient grounds) to achieve same harvest levels means an increased carbon footprint for the fishing vessels
3) Potential harm done to one of the most productive and environmentally sound fisheries domestically and internationally
4) Harm done to a supplier of a domestic protein source that has less of an environmental impact than other meat protein sources (especially comparable free-range / organic sources) (http://eartheasy.com/blog/2011/02/eco-impact-of-wild-seafood-less-than-that-of-poultry-beef/)

The negative economic impacts at the industry level from losing one of the cleanest, most productive fishing areas are:

1) Increased bycatch species caught means an increase in the likelihood that fishing seasons are prematurely closed due to bycatch species catch limit
2) Lengthened fishing seasons to achieve same harvest levels means increased operating costs and lost opportunities (to catch quota) in whiting and other fisheries for vessels and processors because time is a limited resource in any business

The economic impact of lost revenue at the individual level from either decreased efficiencies or decreased catch cannot be overstated:

1) Decreased revenue means decreased upkeep on vessels and processor facilities; both of which support extensive networks of vendor jobs in their communities
2) Premature end to fishing season means an immediate loss of all wages to all fishermen and many support personnel
3) Decreased efficiencies means lost net revenue that drives down wages and / or results in lost jobs

Conclusion: The driving force of the wind float project is a desire to explore renewable energy sources for our nation's future. No less vital to our nation's future are sustainable food sources, and wild caught seafood is a critical component, especially given its quality and comparable eco-impact. Also vital to our nation's future are American jobs, and the whiting fishery is a multi-million dollar fishery that employs Americans across fishing, processing, and distribution sectors. To place wind floats in one of the prime locations for whiting is counter-intuitive and counter-productive. Working with the stakeholders to relocate the project is the logical choice. An EIS is warranted to explore the many environmental and economic impacts of this project that could only be fully understood with input from fishery managers (Pacific Fishery Management Council) and the fishing industry, particularly the whiting industry (including whiting coops with Sea State, Inc).

Sincerely,

Jeff Lackey
Manager

Oregon

John A. Kitzhaber, MD, Governor

Parks and Recreation Department
725 Summer St. NE, Suite C
Salem, OR 97301-1266
(503) 986-0980
Fax (503) 986-0792
www.oregonstateparks.org

Online submission
July 25th 2014

Greg Sanders
Bureau of Ocean Energy Management
Office of Environment
770 Paseo Camarillo, 2nd Floor
Camarillo, CA 93010

Re: BOEM Scoping Notice #BOEM-2014-0050

Dear Mr. Sanders,

Oregon Parks and Recreation Department (OPRD) is submitting the following comments in response to the public scoping notice for the WindFloat Pacific Project (BOEM-2014-0050) proposed by Principle Power offshore of Coos Bay, Oregon. OPRD is the state agency charged with management and permitting decisions for activities on the Ocean Shore State Recreation Area, as specified in Oregon's Beach Laws (ORS 390.605-390.770). The "State Recreation Area" is described as the area of land or water, or a combination of, that is under the jurisdiction of OPRD and is used by the public for recreational purposes. The "Ocean Shore" means the land lying between the extreme low tide of the Pacific Ocean and the statutory vegetation line (ORS 390.770) or the line of established upland shore vegetation, whichever is farther inland. Additionally, OPRD owns and operates over 70 oceanfront state parks along the Oregon Coast, including several in the Coos Bay area. The State Historic Preservation Office (SHPO) is also housed within OPRD.

Permitting requirements
Under ORS 390.640 and ORS 390.715, any person conducting an ocean shore alteration, or placing any pipeline, cable line, or other conduit over, across or under the state recreation area or submerged lands adjoining the ocean shore, must obtain an "Ocean Shore Alteration Permit" from OPRD.

OPRD will have to be consulted if the company performs any construction activities on the ocean shore. For example, if a staging area on the beach is necessary or if vehicles are required on the beach to maintain the power cable and/or supporting onshore or offshore structures a permit is required. Prior to any work being conducted, OPRD would require at a minimum a "Motor Vehicle on the Ocean Shore" permit.

Safety
As the managers of the ocean shore as a recreation area, potential safety concerns have been identified associated with the proposed project. When the applicant develops an Emergency Response Plan, it is imperative that such a plan be developed in cooperation with the US Coast Guard and other applicable agencies, including OPRD. A more detailed description of how the device(s) are designed

(e.g., is it possible, under any conditions for devices or components to float) would help OPRD assess if there is a potential risk to the ocean shore from project-related marine debris. If this is a potential risk, studies should include modeling that helps predict probable landfall locations at various times of the year. Impact analysis should include potential resource concerns associated with landfall of project related marine debris and associated removal efforts, particularly for sensitive areas like Simpson Reef to the south of the project area and the Western Snowy Plover critical habitat areas to the north. Any potential impact to ocean shore resources, recreational use of the beach and the safety of visitors should be considered in development of the plan along with funding to cover any costs incurred for emergency recovery efforts.

Alterations to nearshore oceanographic processes
Whereas OPRD is responsible for managing the ocean shore and administering permits for alterations to the ocean shore, such as those for hardened structures (e.g., riprap, seawalls) put up by homeowners to protect their properties, the potential for the project to alter nearshore processes is of interest. OPRD would have serious concerns if the structures associated with the project have the potential to affect oceanographic processes in the nearshore environment such as sediment transport and wave action. Given the distance from shore, the potential impact of the project to the shoreline is unknown, therefore detailed descriptions about study plans and planned monitoring efforts to evaluate impacts on sediment transport and wave action are warranted.

Potential impacts to scenic views from oceanfront state parks
Information provided about the project includes assertions that the project will be "barely, if at all, visible from shore." However, given the provided information about the potential height of the floating wind turbines and the elevation of the state park properties at Cape Arago, it seems possible that under certain conditions, at least a portion of the project may be visible from shore, even at a distance of approximately 15 nautical miles. Based on the conclusion of a BOEM funded study, "Offshore Wind Turbine Visibility and Visual Impact Threshold Distances" that offshore wind facilities "may be visible at distances of 26 mi (42 km) in daytime and 24 mi (39 km) in nighttime views, and be a major focus of visual attention at distances of up to 10 miles", a thorough visual impact analysis is justified for this project.

Visualizations presented at the scoping meeting appear to have been conducted from the beach on the North Spit, near the potential cable landing site. Without more information about how these were conducted, it is not possible to provide comments on visibility or potential impacts from that particular location on the beach. Given the sensitivity of state park visitors and the scenic quality of the coastal landscape and seascape at these elevated viewpoints, visualizations should also be conducted from viewpoints at Cape Arago, Sunset Bay and Shore Acres State Parks. These are highly visited state parks (~1.5 million visitors in 2013) that are destinations for their scenic beauty, cultural history, proximity to the ocean and the remote, rugged character of the coastal landscape. There are multiple key viewing areas within the parks, including Civilian Conservation Corps era viewpoints, views of the National Register listed Cape Arago Lighthouse, Simpson Reef wildlife overlook and an enclosed ocean observation building at the site of the historic Simpson Estate. The viewshed of these parks is classified in the highest category of visual resource protection standards in Oregon's newly adopted Territorial Sea Plan, with a standard that allows for "level[s] of change to the characteristic seascape" that are "very low and may not attract attention" within the Territorial Sea. Please refer to the visual resource protection standards established in the Oregon Territorial Sea Plan along with suggested project review criteria for more information.

Cultural resources

- Please refer to the letter submitted by the State Historic Preservation Office on July 1st regarding data needs (e.g., side-scan sonar and sub-bottom profile data) and requests designed to help avoid landforms where cultural remains may exist both offshore below federal and state waters and onshore (SHPO Case # 14-0976).
- OPRD suggests that on-going meaningful consultation with the effected tribes, including the Confederated Tribes of the Coos, Lower Umpqua and Siuslaw Indian, the Coquille Indian Tribe and the Confederated Tribes of Siletz, occur to assure that Traditional Cultural Properties and Landscapes are identified and efforts are made to assure that these important cultural resources are protected.
- OPRD concurs with the recommendation that :"The most accurate and reliable method of determining whether submerged archaeological sites remain on or in the POCS is to conduct high-resolution remote sensing and subsurface coring studies. The results of these studies will not only provide direct information about whether submerged archaeological sites are or are not located in specific parts of the POCS, direct observations can be used to evaluate and improve the predictive abilities of our GIS model." To assure that unknown cultural resources are identified prior to construction, the above recommendation would be very beneficial.
- Cape Arago Lighthouse along with other cultural resources in the vicinity of Cape Arago are listed on the National Register of Historic Places.

Thank you for your time and the opportunity to comment. Please feel free to contact any of my staff, listed below, with any questions.

Sincerely,

Jim Morgan

Jim Morgan
Stewardship Manager

Laurel Hillmann, Ocean Shore Planner (laurel.hillmann@oregon.gov)
Tony Stein, Ocean Shore Permit Coordinator (tony.stein@oregon.gov)
Calum Stevenson, Ocean Shore Natural Resource Specialist (calum.stevenson@oregon.gov)
Nancy Nelson, State Park Archaeologist (nancy.nelson@oregon.gov)

Jody McCaffree
PO Box 1113
North Bend, OR 97459

July 25, 2014

Bureau of Ocean Energy Management (BOEM)
Pacific Region Office of Strategic Resources
770 Paseo Camarillo, Second Floor
Camarillo, California 93010

RE: RESPONSE TO REQUEST FOR PUBLIC COMMENT, DOCKET NO. BOEM-2014-0050; WIND POWER OFFSHORE OREGON

Dear Ladies and Gentlemen at BOEM:

I am requesting that the following comments and concerns that were submitted to the Bureau of Ocean Energy Management for file BOEM-2013-0050 also be incorporated here in with this proceeding under BOEM File No. 2014-0050. I don't feel the Open House meetings that occurred at the Coos Bay Library recently were well publicized enough to qualify as scoping meetings. A complete Environmental Impact Statement and NEPA process needs to be completed. The Federal Energy Regulatory Commission (FERC) is requiring this if the project stays linked to the Jordan Cove LNG export project. Thousands of Southern Oregon citizens including myself do not support the offshore wind project "linking" to the Jordan Cove LNG export project, even though we support the use and development of renewable energy. We need to get off of fossil fuels not support increased fossil fuel development, particularly developments such as Jordan Cove that include the increased use of hydraulic fracturing of shale beds. This adds to increased greenhouse gases and other pollutants going into the water and atmosphere and should be avoided at all costs.

Sincerely,

Jody McCaffree

Attachments

(1)

Jody McCaffree
PO Box 1113
North Bend, OR 97459
(541) 756-0759

October 30, 2013

Bureau of Ocean Energy Management (BOEM)
Pacific Region Office of Strategic Resources
770 Paseo Camarillo, Second Floor
Camarillo, California 93010

RE: RESPONSE TO REQUEST FOR PUBLIC COMMENT, DOCKET NO. BOEM-2013-0050; MMAA 104000, WIND POWER OFFSHORE OREGON

Dear Ladies and Gentlemen at BOEM:

You have received a proposal submitted by Principle Power Inc. seeking a commercial lease for wind energy development on the OCS off of Coos Bay, Oregon.[1] You have requested public comments regarding the potential environmental consequences of wind energy development in the area.[2] I attended a public meeting about the proposed Principle Power offshore wind project at the North Bend Library on September 23, 2013, where I signed up to be notified about upcoming opportunities to participate and comment concerning this proposed WindFloat project. Despite this effort on my part I was not informed by your agency nor by Principle Power concerning your current request for public comment and it took some work to even find the open comment announcement in the Federal Regulations website. I have to assume that other potential commenter's and /or potential competitors were not informed either. This is not an acceptable way to conduct a public review process.

To the dismay of hundreds of renewable energy advocates in Coos County and thousands across the nation, the Principle Power WindFloat Pacific Pilot Project has chosen to be irrevocably linked to the proposed Jordan Cove liquefied natural gas (LNG) Export project. This relationship is documented in Principle Power's lease application itself, which specifically states:

> *"An offshore grid and subsea cable would be used to export produced electricity to facilities at the planned South Dunes Power Plant, a combined cycle natural gas power plant associated with the Jordan Cove Energy Project"*[3] *...*
> *..."Jordan Cove Energy and Principle Power are negotiating a power purchase agreement with a term and price sufficient to meet the economic needs of the WindFloat Pacific Project".*[4]

[1] Principle Power, Inc., "Unsolicited Application for an Outer Continental Shelf Renewable Energy Commercial Lease - Principle Power WindFloat Pacific Pilot Project", May 14, 2013
[2] Federal Register, Volume 78, No. 189, Sept. 30, 2013, pgs. 59968 - 59972.
[3] Principle Power Application, op cit, page 1
[4] ibid.

Further, Principle Power states unequivocally that:

> *"Power generated from the WindFloat Pacific project will be delivered to the Jordan Cove project in the Port of Coos Bay and will not be offloaded to the national electric grid."*[5]

Furthermore, in its application Principle Power has made a rather obvious attempt to facilitate circumvention of the regulations in the upcoming National Environmental Policy Act (NEPA) process. It has done this by repeatedly treating the Jordan Cove LNG facility as if it were a fait accompli rather than a proposal undergoing the earliest stages of the NEPA process. Specifically: *"The Jordan Cove Energy Project is a $7.5 billion dollar liquid natural gas export facility <u>currently under development</u>* (emphasis provided) *at the International Port of Coos Bay"*[6]; *"The <u>existence</u>* (emphasis provided) *of the Jordan Cove Energy Project at Coos Bay and its ability to purchase power from WFP created a strong market opportunity"*[7]; and, *"...the electric infrastructure <u>being developed</u>* (emphasis provided) *in association with the Jordan Cove project created an obvious grid interconnection opportunity"*.[8]

The certainty ascribed by Principle Power to the "existence" of the Jordan Cove LNG facility is all the more remarkable given the fact that FERC is still in the NEPA scoping stage and has not yet even published the draft EIS for the project.

1. NEPA Requirements

The National Environmental Policy Act (NEPA) requires that a single Environmental Impact Statement (EIS) be prepared for the entire Jordan Cove LNG project which will now need to include the Principle Power WindFloat proposal.

As a citizen of Coos County, I am well aware that our aquatic ecosystems have been seriously compromised in the past, and that there is little margin for error in properly implementing future development projects. Absolute and complete compliance with both the letter and intent of NEPA is critical if our ecosystems are to remain functional.

2. Public Need and Benefit of Jordan Cove LNG Export Project Lacking

On May 21, 2013, the Jordan Cove Energy Project, L.P. (JCEP) filed an application with the Federal Energy Regulatory Commission (FERC) for approval to construct own and operate a natural gas liquefaction and liquefied natural gas (LNG) export facility on the bay side of the

[5] ibid, page 9
[6] ibid, page 1
[7] ibid, page 5
[8] ibid.

North Spit of Coos Bay.[9] On June 6, 2013, the Pacific Connector Gas Pipeline, L.P. (PCGP) filed an application with the Federal Energy Regulatory Commission (FERC) for approval to construct, own and operate a natural gas transmission pipeline in southern Oregon to feed the Jordan Cove Export Project. [10]

PCGP Resource report 1, page 3, under **1.2.2 Need** states:

> *"The primary need for Pacific Connector is to supply approximately 1.02 Bcf/d (1,020,000 Dth/d) of firm transportation service to the Jordan Cove Terminal. The Jordan Cove Terminal, located on the bay side of the North Spit of Coos Bay, is designed to receive, liquefy, store and load LNG onto LNG ships for delivery to export markets…"*

Both the Jordan Cove Energy Project (JCEP) and the Pacific Connector Gas Pipeline (PCGP) have failed to demonstrate that the proposed facilities are not inconsistent with the public interest as required by applicable regulations. 18 C.F.R. § 153.7(c). Jordan Cove and Pacific Connector have failed to provide adequate evidence to support their proposition in their applications to FERC nor have they shown that their current proposed windfloats, pipeline route and LNG terminal local and design will have the least adverse impact on local water resources, salmon habitat, forests, and agricultural values. There is significant evidence that the project will negatively impact local farms, fish habitat, water quality and natural resources.

The Jordan Cove Energy Project L.P. (JCEP) has no experience in the export of LNG and both JCEP and PCGP's Federal Energy Regulatory Commission (FERC) applications have failed to demonstrate that the proposed facilities will not involve any existing contract(s) between the applicant and a foreign government or person concerning the control of operations or rates for the delivery or receipt of natural gas which may restrict or prevent other United States companies from extending their activities in the same general area. 18 C.F.R. § 153.7(c)iii

JCEP Application to FERC page 4 states:

> *"…JCEP is a new entrant to the LNG industry and will bear the full economic risk of constructing and operating the Project (without subsidization from, or causing unsubscribed capacity on, existing pipelines). In fact, as the Project will provide a new outlet for North America's abundant natural gas supplies, it will result in increased utilization of both new and existing pipeline infrastructure."*

2.1 Motion to Intervene of Gas Transmission Northwest LLC under FERC PCGP Docket No CP13-492-000 states:

> "*Gas Transmission Northwest LLC ("GTN")is a "natural-gas company" as defined by the Natural Gas Act, 15 U.S.C. § 717a(6),and is engaged in the business of transporting natural gas in interstate commerce within the jurisdiction of the Commission. As an interstate pipeline serving many of the same markets as the facilities proposed in this*

[9] http://elibrary.FERC.gov/idmws/file_list.asp?accession_num=20130521-4008 ; and http://elibrary.FERC.gov/idmws/file_list.asp?accession_num=20130521-4010
[10] http://elibrary.FERC.gov/idmws/file_list.asp?accession_num=20130606-5000

proceeding, GTN has a direct and substantial interest in, and may be directly affected by, this proceeding…" [11] (Emphasis added)

2.2 Motion to Intervene of Northwest Industrial Gas Users under FERC JCEP Docket No CP13-483-000 states:

"The proposal in this filing could impact NWIGU member companies' interests. NWIGU member companies purchase substantial quantities of natural gas for use in their facilities, and thus will be directly affected by the outcome of this proceeding…" [12] (Emphasis added)

2.3 Motion to Intervene of Southwest Gas Corporation under FERC PCGP Docket No CP13-492-000 states:

"Southwest is a natural gas local distribution company engaged in, inter alia, the intrastate transmission, distribution, and sale of natural gas in certain portions of the states of California, Arizona, and Nevada pursuant to certificates of public convenience and necessity issued by the California Public Utilities Commission, the Arizona Corporation Commission, and the Public Utilities Commission of Nevada.

With respect to its northern California and northern Nevada service areas, Southwest relies upon the facilities of Ruby Pipeline L.L.C. (Ruby) for transporting and delivering supplies of natural gas, which Southwest purchases on a delivered basis, to supply Southwest's northern California and northern Nevada local distribution service areas. Southwest is also dependent upon the facilities of Northwest Pipeline GP (Northwest) for supplies of natural gas, which Northwest delivers to Paiute Pipeline Company for redelivery to Southwest's distribution systems. Southwest is a firm transportation customer of Northwest…

…. As a customer of both Ruby and Northwest, Southwest buys delivered supplies at Ruby's interconnect with Paiute Pipeline Company and is therefore affected by any change in Ruby's tariff rates. Southwest is also dependent upon Northwest for supplies of natural gas and is subject to the rates that the Commission authorizes Northwest to collect for its transportation of gas. An order in this proceeding may have a direct impact upon Southwest…." [13] (Emphasis added)

2.4 In 2003 and in 1991 Williams (*50% owner of the PCGP and proposed builder of the PCGP*) was fined the largest civil fines in the history of FERC:

"The Federal Energy Regulatory Commission today approved a settlement that includes a civil penalty of $20 million–the largest in Commission history. The tough penalty stems from anticompetitive practices by Transcontinental Gas Pipe Line Corporation

[11] Motion to Intervene of Gas Transmission Northwest LLC under CP13-492-000: http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20130612-5004
[12] Motion to Intervene of Northwest Industrial Gas Users under CP13-483-000: http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20130618-5008
[13] Motion to Intervene of Southwest Gas Corporation under CP13-492-000: http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20130620-5075

(Transco), a subsidiary of The Williams Companies (Williams)...

... Before today's settlement, the largest civil penalty was $11 million, paid by Transco under a 1991 settlement for, among other things, destroying archeological sites in Alabama." [14] (Emphasis added)

3. JCEP / PCGP Project - Not Needed for Export According to Industry Analyst Data

In June 2013 Navigant released their updated Outlook for the North American natural gas market, including supply, demand, and prices at key market points. The Navigant Press Release stated among other things that:

"*…the real Henry Hub average price will increase at an average rate of 2.9 percent, from $3.66/MMBtu in 2013, to $4.07/MMbtu by 2015, and reach $6.82/MMBtu by 2035*"…
…LNG exports are expected to grow in the U.S. and Canada, reaching 6.8 Bcfd by 2020." [15] (Emphasis added)

The BP Energy Outlook 2030 that was released in January 2013 also concluded similar statistics:

"• North American shale gas production grows by 5.3% p.a. reaching 54 Bcf/d by 2030, more than offsetting the decline of conventional gas production. Supported by shale gas, North America will become a net exporter in 2017, with net exports approaching 8 Bcf/d by 2030..." [16] (Emphasis added)

..."• Gas trade between regions continues to grow (3.7% p.a. from 2011). Europe remains the largest net importer, and accounts for the largest increment in net imports (18 Bcf/d). Russia remains the largest net exporter – predominantly to Europe.

"• LNG contributes an increasing share of trade. LNG production grows by 4.3% p.a., accounting for 15.5% of global gas consumption by 2030. On a regional level, Africa is set to overtake the Middle East to become the largest net LNG exporter in 2028.

"• Australia, with a wave of large projects coming on stream from 2014, expands LNG supply by 15 Bcf/d, overtaking Qatar as the largest LNG supplier by 2018 and accounting for 25% of global LNG production by 2030..." [17] (Emphasis added)

---

[14] Federal Energy Regulatory Commission, March 17, 2013 News Release: http://www.ferc.gov/media/news-releases/2003/2003-1/transco-03-17-03.pdf

[15] *"Navigant Releases New Data on North American Natural Gas Market Prices"* Press Release ; June 10th, 2013: http://www.navigant.com/insights/library/industry_news/north-american-natural-gas-market-prices/

[16] *BP Energy Outlook 2030* - January 2013, Page 47: http://www.bp.com/content/dam/bp/pdf/statistical-review/BP_World_Energy_Outlook_booklet_2013.pdf

[17] *BP Energy Outlook 2030* - January 2013: Page 53 http://www.bp.com/content/dam/bp/pdf/statistical-review/BP_World_Energy_Outlook_booklet_2013.pdf

These export volumes above have also been confirmed by several additional Navigant Reports that were recently completed in September for the Jordan Cove Energy Project:

Jordan Cove NEB Appendix D – Export Impact Assessment – Application for a Gas Export License to the National Energy Board ; Gordon Pickering , Navigant ; September 2013[18] – Page 26 states:

> *"Given this competition, Navigant believes that LNG exports will be more limited for the foreseeable future than the number of applications for LNG export approval might suggest. Our view is that not all LNG export projects will go ahead. In our estimation, export volumes in the 8 Bcfd to 10 Bcfd range from North American seem to be a reasonable estimate of the eventual volume. At these levels, the exports represent only 9 percent - 12 percent of the current market in 2013 and from 6 percent - 8 percent of the North American gas market in 2045.[19] At these levels, we believe it is unlikely that even if global gas prices remain high, they will be able to materially affect prices in the North American market."* (Emphasis added)

Jordan Cove NEB Appendix C - "Supply and Demand Market Assessment and Surplus Evaluation Report" Prepared for Jordan Cove LNG L.P. by Navigant - September 9, 2013:[18]

Page 17 – 18 states:

> *"It should be noted that Navigant considers the upper end of the volume ranges discussed here for Canadian LNG exports with respect to resource life (i.e., 15 Bcfd) to be quite high, and unlikely. Navigant's current view is that the likely development of North American liquefaction capacity for export is in the 8-10 Bcfd range, with 6-8 Bcfd from the U.S. and about 2 Bcfd from Canada, meaning that the scenario of 4.75 Bcfd of Canadian LNG exports (based on approved projects) should be viewed as a high export assumption."* (Emphasis added)

Page 35 states:

> *"It is important to recognize that North American LNG exports will occur within a global marketplace, with a supply-demand balance that accounts for international competition. Consequently, it should be expected that only some portion of incremental international LNG liquefaction capacity will be built in North America, and relatedly that only some portion of proposed North American facilities will be built….*
> *…. Included in this outlook is "some" LNG export volumes (6.6 Bcfd from North America) to account for expected increasing global gas on gas competition. Navigant's current market view has developed to a range of 8 to 10 Bcfd for North America, and we believe that range of export volumes will likewise be associated with reasonable*

[18] Jordan Cove Energy Project L.P. September 9, 2013, Application to National Energy Board (NEB) of Canada.
[19] Report states this was based on the: "Navigant 'Natural Gas Supply and Demand Market Assessment to 2045", Figure 14, page 26. 2013 North American gas production is 85 Bcfd. 6/85=7%; 8/85=9%/ 2045 North American gas production is 130 Bcfd. 6/130=5%; 8/130=6%

prices.[20]" (Emphasis added)

According to their own consultant reports, the Jordan Cove Energy LNG Export project and their associated Pacific Connector Gas Pipeline are not needed due to already approved North American LNG Export projects that currently total over 10 Bcf/d as documented further below.

3.1 The order in which the U.S Department of Energy (DOE) is processing proposed LNG Export Projects is below: [21]

2.2 Bcf/d - Sabine Pass Liquefaction, LLC – DOE has approved
1.4 Bcf/d - Freeport LNG Expansion, L.P. and FLNG Liquefaction, LLC– DOE approved
2.0 Bcf/d - Lake Charles Exports, LLC – DOE approved
1.0 Bcf/d - Dominion Cove Point LNG, LP – DOE approved
1.4 Bcf/d - Freeport LNG Expansion, L.P. and FLNG Liquefaction, LLC
1.7 Bcf/d - Cameron LNG, LLC
9.7 Bcf/d - Subtotal Bcf/d LNG Export volumes before JCEP is even considered by the U.S. DOE

[It should be noted that the total above does not include the prospect of exporting LNG from the Alaska Kenai Plant. The Alaska Department of Natural Resources' (DNR) has recently requested that ConocoPhillips apply for a new license to export LNG from that terminal which suspended operations in 2012. The Alaska Department of Natural Resources (DNR) has entered into a Memorandum of Understanding (MOU)[22] with the Japan Bank for International Cooperation (JBIC). According to a September 11, 2013 press release,[23] JBIC plays a critical role in financing and securing Japan's LNG imports. The MOU "focuses on opportunities for Japanese companies and JBIC to become involved in resource development projects in Alaska – in particular, a large-volume liquefied natural gas pipeline and export facility."]

3.2 Canada National Energy Board Current (Oct 2013) Schedule of LNG Export Project Applications[24] ahead of Jordan Cove:

.07-1.3 Bcf/d - KM LNG Operating General Partnership – Approved by NEB
.24 Bcf/d - BC LNG Export Co-operative – Approved by NEB
3.23 Bcf/d - LNG Canada Development Inc – Approved by NEB
2.6 Bcf/d - Pacific Northwest LNG Ltd
3.9 Bcf/d - WCC LNG Ltd
2.8 Bcf/d - Prince Rupert LNG Exports Limited
.3 Bcf/d - Woodfire LNG Export Pte. Ltd
13.14 - 14.37 Bcf/d - Subtotal Bcf/d LNG Export volumes before JCEP is even considered by the NEB in Canada

[20] See studies referenced in footnotes 63 and 64 of Navigant Report
[21] Pending Long-Term Applications to Export LNG to Non-FTA Countries - Listed in Order DOE Will Commence Processing http://energy.gov/sites/prod/files/2013/05/f0/Pending%20LT%20LNG%20Export%20Apps%20%285-17-13%29.pdf
[22] http://dnr.alaska.gov/commis/priorities/JBIC_DNR_MOU.pdf
[23] "*State Signs Agreement with Major LNG Financier in Japan*" – September 11, 2013 http://dnr.alaska.gov/shared/mediareleases/dsp_media_release.cfm?id=1903&title=State%20signs%20agreement%20with%20major%20LNG%20financier%20in%20Japan
[24] http://www.neb-one.gc.ca/clf-nsi/rthnb/pplctnsbfrthnb/lngxprtlcncpplctns/lngxprtlcncpplctns-eng.html

3.3 If one adds up the North American LNG Export Terminal total volumes that have already been approved to date,[25] those volumes currently EXCEED industry market analyst projections for LNG Export volumes by 2030.

2.2 Bcf/d - Sabine Pass Liquefaction, LLC – U.S. DOE Approved
1.4 Bcf/d - Freeport LNG Expansion, L.P. & FLNG Liquefaction, LLC - DOE Approved
2.0 Bcf/d - Lake Charles Exports, LLC – DOE Approved[26]
1.0 Bcf/d - Dominion Cove Point LNG, LP – DOE Approved[27]
.24Bcf/d - BC LNG Export Cooperative LLC (BC LNG) – Canada NEB Approved
0.7 - 1.3 Bcf/d - Kitimat, BC – Canada NEB Approved
3.23Bcf/d - LNG Canada Development Inc – Canada NEB Approved
10.77 - 11.37 Bcf/d - Total volume of North American LNG Exports approved to date.

Even if one considers the EIA's high/rapid LNG Export scenario of 12 Bcf/d phased in at a rate of 3 Bcf/d per year.[28] These volumes would be met long before the Jordan Cove Energy Project would be approved by the U.S. DOE:

9.7 Bcf/d - U.S. LNG Export volumes in line before Jordan Cove
+13.14 - 14.37 Bcf/d – Canadian LNG Export volumes in line before Jordan Cove
=**22.84 - 24.07 Bcf/d -Total volume of North America LNG Exports seeking approval before JCEP**

The Federal Energy Regulatory Commission (FERC) has stated that it will let the market decide concerning the development of these proposed LNG export projects and the market has clearly decided.

SO WHY ARE WE WASTING EVERYONE'S TIME ANALYZING JORDAN COVE'S PRINCIPLE POWER WINDFLOAT PROJECT LEASE WHEN INDUSTRY DATA DOES NOT SUPPORT THE JORDAN COVE LNG EXPORT PROJECT THAT THE WINDFLOAT PROJECT HAS MADE ITSELF DEPENDANT ON?

[25] U.S. Dept of Energy LNG Export Summary: http://energy.gov/sites/prod/files/2013/09/f2/LNG%20Export%20Summary_1.pdf
[26] August 7, 2013 DOE Order (3324) Conditionally Granting Long-Term Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Lake Charles LNG Terminal to Non-Free Trade Agreement Nations http://www.fossil.energy.gov/programs/gasregulation/authorizations/Orders_Issued_2013/ord3324.pdf
NOTE: This approval did not make the press until Sept - http://www.marketwatch.com/story/lake-charles-lng-export-terminal-receives-energy-department-approval-an-industrial-info-news-alert-2013-09-16
[27] September 11, 2013 DOE Order (3331) Conditionally Granting Long-Term Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Cove Point LNG Terminal to Non-Free Trade Agreement Nations http://www.fossil.energy.gov/programs/gasregulation/authorizations/Orders_Issued_2013/ord3331.pdf
[28] EIA "*Effect of Increased Natural Gas Exports on Domestic Energy Markets"* – Jan 2012: http://energy.gov/sites/prod/files/2013/04/f0/fe_eia_lng.pdf

No amount of "greenwashing" by Jordan Cove that will change these facts either. The only hope of a prayer that the Principle Power WindFloat project would have for success would be for the project to completely separate itself from the proposed Jordan Cove LNG Export Project.

4. Exporting LNG = Higher Energy Costs for North America

Exporting domestically produced LNG will have a detrimental impact on American manufacturing and industries that rely on and use natural gas. (***See Exhibit A-C***) These industries are currently becoming very concerned that any additional export volumes than what have already been approved by the U.S. DOE would be risking thousands of jobs in the manufacturing sector in the U.S. (***See Exhibit D***) On September 18, 2013, the group America's Energy Advantage, representing the American manufacturing sector, filed a motion to intervene on the next proposed LNG export project that is up for U.S. DOE approval, the Freeport LNG Expansion Export Project. The America's Energy Advantage press release stated the following:

> *"...DOE is making decisions that will have far-reaching and potentially irreversible impacts on consumers, our economy, and America's manufacturing renewal based on 30-year-old guidelines for natural gas imports, not exports. No matter where one stands on this issue, surely we can agree that exports and imports are different, and that DOE needs to make rules based on the 21st century, not the 1980s," said Jennifer Diggins, Director, Public Affairs for Nucor Corporation and Chair of AEA.*
>
> *"We felt the need to file a formal motion because American consumers of natural gas deserve as much say in the process as producers," said Diggins. "All we're saying is that the public interest test is important, and that DOE needs to take a more methodical and legally-based approach to defining what that public interest is. DOE itself conceded that 'the market of the future very likely will not resemble the market of today' in its previous grant applications, but what data are they using to project that future? Nobody knows."*
>
> *Diggins concluded: "As a result of available and affordable natural gas in the U.S., more than 120 manufacturing projects valued at nearly $110 billion of economic investment have been announced, including thousands of new jobs. Our country cannot afford to lose these job-creating investments or hurt consumers by driving up the cost of utility bills. We have a right to be heard in this debate..."*[29] (Emphasis added)

5. Earthquake and Tsuanmi Hazards

On August 1, 2013, news of a report that was issued by the Oregon State University clearly spelled out the fact that the Jordan Cove facility, the Pacific Connector and the Principle Power WindFloats would be located in an area on the Southern Oregon coast that may be the most vulnerable to a Cascadia Subduction mega quake and tsunami event based on recurrence

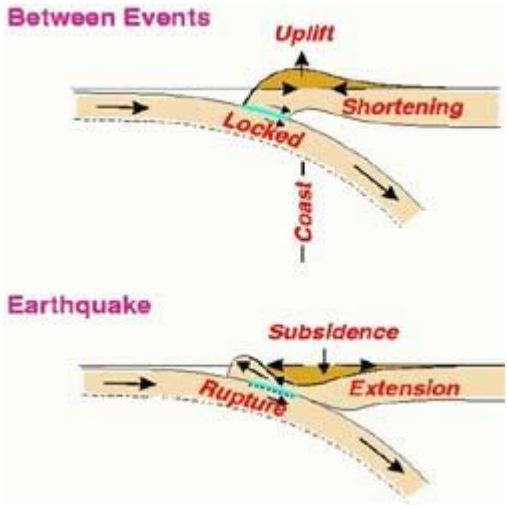
[29] Press Release - "*America's Energy Advantage Files LNG Export Motion, Seeks Rulemaking on Public Interest Test" Sept 18, 2013* http://www.reuters.com/article/2013/09/18/dc-americas-energy-idUSnPNCG82555+1e0+PRN20130918

frequency. [30] (***See Exhibit E***)

According to the report, the evidence clearly shows that our region has a long history of these events, and the single most important thing we can do is begin **'expecting' a mega-quake because it is not a matter of "if" but "when."**

"The southern margin of Cascadia has a much higher recurrence level for major earthquakes than the northern end and, frankly, it is overdue for a rupture," said Chris Goldfinger, a professor in OSU's College of Earth, Ocean, and Atmospheric Sciences and lead author of the study.

Written by researchers at Oregon State University, and published online by the U.S. Geological Survey, the study concludes that there is a 40 percent chance of a major earthquake in the Coos Bay, Ore., region during the next 50 years. And that earthquake could approach the intensity of the Tohoku quake that devastated Japan in March of 2011.



The last known great earthquake in the northwest was in 1700, just over 300 years ago. In 1700, geologists say, a quake with an estimated magnitude of 9.0 struck, touching off waves that hit both Japan and the West Coast. The 1700 Cascadia Subduction Earthquake caused extensive land level changes of subsidence and emergence. Between earthquakes, when the oceanic and continental plates are locked, internal stress stored by the interacting plates slowly deforms the land, pushing it upward and inland. When the locked plates slip, the toe of the subduction zone moves seaward and up, and the uplifted land drops to a lower position.

State estimates are that in low-lying vulnerable areas such as Oregon's Seaside or Washington's Aberdeen, tsunami waves could wipe out entire towns.

For the sake of the thousands of people who are at risk in the Coos Bay area we ask the BOEM to require an independent review before considering approval of the proposed

[30] 13-Year Cascadia Study Complete – And Earthquake Risk Looms Large
http://oregonstate.edu/ua/ncs/archives/2012/jul/13-year-cascadia-study-complete-%E2%80%93-and-earthquake-risk-looms-large
Study Link: *Turbidite Event History—Methods and Implications for Holocene Paleoseismicity of the Cascadia Subduction Zone* - By Chris Goldfinger, C. Hans Nelson, Ann E. Morey, Joel E. Johnson, Jason R. Patton, Eugene Karabanov, Julia Gutiérrez-Pastor, Andrew T. Eriksson, Eulàlia Gràcia, Gita Dunhill, Randolph J. Enkin, Audrey Dallimore, and Tracy Vallier - http://pubs.usgs.gov/pp/pp1661f/

Jordan Cove / Pacific Connector / Principle Power project and ocean lease in these natural hazard zones.

Conclusion

I find it very disappointing that with all the hundreds of successful wind projects operating successfully in the World today (without the need or use of U.S. DOE grants)[31] that Principle Power has determined that their only avenue to success is to link up with the "foreign" owned and controlled "Veresen" Jordan Cove Energy LNG Export Project. **Why the U.S, Department of Energy would even consider using U.S. tax dollars to fund such a project is beyond me.**

• There is no American public benefit in linking an offshore Windfloat demonstration project to a foreign owned and controlled dirty fossil fuel project.

• There is no American public benefit in developing an offshore Wind Energy Project that INCREASES Green House Gas Emissions along with other pollutants and promotes INCREASED CLIMATE CHANGE.

• There is no American public benefit in linking an offshore Wind Energy Project to gas coming from Hydraulic Fracturing of Shale beds whose resources have been overestimated. (***See Exhibits F & G***)

• There is no American public benefit in increasing our domestic natural gas prices;

• There is no American public benefit in the conflict the proposed WindFloat lease grounds would have with the American fishing fleet.

• There is no American public benefit in building a hazardous LNG export facility at the end of an active airport runway in a tsunami inundation and earthquake subduction zone, putting thousands of AMERICAN LIVES at risk!

• There is no American public benefit in a 95 + foot clear-cut through our American private property, forestlands and waterbodies by the Proposed Pacific Connector Gas Pipeline, a vital component of the Jordan Cove LNG Export project.

• There is no American public benefit in the use of EMINENT DOMAIN for the profit of a foreign energy company.

• There is no American public benefit in thousands of American citizens living in the extreme hazard zones of proposed Jordan Cove LNG Export terminal and Pacific Connector Gas Pipeline (PCGP).

• There is no American public benefit to all the Bay closures that will occur due to the safety and security zones of transiting LNG tanker ships. (***See Exhibit H***)

[31] http://www.4coffshore.com/windfarms/

• There is no American public benefit to the loss of fish, marine and wildlife habitat due to the destructive nature of pipeline construction projected to impact 400 waterbodies in Southern Oregon alone, many salmon bearing.

• There is no American public benefit to the negative impacts of the proposed Jordan Cove LNG Export Project on tourism, recreation, fishing, farming, timber harvesting, ranching, crabbing, clamming, oyster harvesting, property values (and use), real-estate, local homeowners insurance rates, transportation (land, water & air travel), noise, air and water pollution and water supplies.

• There is no American public benefit in the loss of thousands of manufacturing jobs in America and also local jobs in timber, ranching, farming, fishing and recreation.

• There is no American public benefit in the poisoned water supplies and all the environmental damage and detrimental impacts from the hydraulic fracturing that will be used in order to obtain Jordan Cove's gas supply. (***See Exhibit I***)

• There is no American public benefit in polluting our American air and water and putting our health and safety at risk while catering to foreign interest!

Exporting LNG out of Coos Bay would be for the sole benefit and "interest" of the foreign owned and controlled" Veresen" Jordan Cove Energy Project (JCEP).

We Americans get all the expense and risk while foreign interests get the profits and benefits.

The BOEM and U.S. Department of Energy should not be fooled by Jordan Cove's schemes nor should they be wasting tax dollars on reviewing Jordan Cove's Principal Power WindFloat project. Why let the Jordan Cove / Pacific Connector / Principle Power project give renewable energy and/or wind power a bad name? As an extremely dedicated 100 percent renewable energy advocate[32] I am disappointed that you would think a truly viable renewable energy company would be willing to team up with an LNG export project in this manner. Please see through this scam and save the ocean for more realistic successful offshore renewable energy wind projects. The planet cannot afford for you to do otherwise.

Sincerely,

Jody McCaffree

Jody McCaffree

Via Regulations website:
http://www.regulations.gov/#!documentDetail;D=BOEM-2013-0050-0001
Due Oct 30 2013, at 11:59 PM ET

[32] www.go100percent.org

McCaffree
Index for Exhibits
Oct 30, 2013
For Comments Re: BOEM-2013-0050; MMAA 104000,
WIND POWER OFFSHORE OREGON

Exhibit A: Oil and Gas Journal – "***FGE: US gas price sensitive to LNG exports***" 08/27/2013; By OGJ editors ; http://www.ogj.com/articles/2013/08/fge-us-gas-price-sensitive-to-lng-exports.html

Exhibit B: Bloomberg – ***"Exports of LNG May Raise U.S. Prices as Much as 54%, Agency Says"*** By Katarzyna Klimasinska - Jan 19, 2012 ; http://www.bloomberg.com/news/2012-01-19/lng-exports-may-spur-higher-u-s-natural-gas-prices-report-says.html

Exhibit C: *"**Drill Here-Sell There-Pay More – The Painful Price of Exporting Natural Gas***" 3-1-2012 http://democrats.naturalresources.house.gov/sites/democrats.naturalresources.house.gov/files/2012-03-01__RPT_NGReport.pdf

Exhibit D: Press Release - "***America's Energy Advantage Files LNG Export Motion, Seeks Rulemaking on Public Interest Test****" Sept 18, 2013* http://www.reuters.com/article/2013/09/18/dc-americas-energy-idUSnPNCG82555+1e0+PRN20130918

Exhibit E: Oregon State University ***"13-year Cascadia study complete – and earthquake risk looms large***" 08/01/2012 – Source Chris Goldfinger - http://oregonstate.edu/ua/ncs/archives/2012/jul/13-year-cascadia-study-complete-%E2%80%93-and-earthquake-risk-looms-large

Exhibit F: "*Scientists Wary of Shale Oil and Gas as U.S. Energy Salvation*"; Oct. 28, 2013 http://www.sciencedaily.com/releases/2013/10/131028141516.htm

Exhibit G: "*Gas Bubble Leaking, About to Burst*" by Richard Heinberg, originally published by Post Carbon Institute | Oct 22, 2012 - http://www.resilience.org/stories/2012-10-22/gas-bubble-leaking-about-to-burst

Exhibit H: ***Jordan Cove LNG Tanker Hazard Zones*** per FERC Docket number CP07-444-000 for Jordan Cove Energy Project former FEIS Page 4.7-3

Exhibit I: *"**Fracking by the Numbers – Key Impacts of Dirty Drilling at the State and National Level**" Executive Summary* by Elisabeth Ridlington – Frontier Group and John Rumpler – Environment America Research & Policy Center; Environment America; Oct 2013; http://www.environmentamerica.org/sites/environment/files/reports/EA_FrackingNumbers_scrn.pdf

Exhibit A

Oil and Gas Journal

http://www.ogj.com/articles/2013/08/fge-us-gas-price-sensitive-to-lng-exports.html

FGE: US gas price sensitive to LNG exports

HOUSTON, Aug. 27
08/27/2013
By OGJ editors

The future price of natural gas in the US depends greatly on development of LNG exports, the outlook for which remains unclear, says Facts Global Energy (FGE).

In an analysis comparing its projections for LNG exports with a base-case production forecast by the Energy Information Administration's Annual Energy Outlook (AEO), FGE sees problems.

FGE's LNG export expectations are much greater than EIA's: 40 million tonnes/year in 2020 and almost 80 million tpy in 2025, assuming full utilization of capacity, vs. 5.5 million tpy in 2020 and almost 30 million tpy in 2030 in the AEO reference case.

Expected pipeline exports to Mexico plus LNG exports at FGE's projected rates would absorb all incremental gas production in the AEO reference case.

"Obviously, this is an untenable outcome as there is no room for domestic demand growth," FGE says. "It implies that Henry Hub prices must rise higher than the AEO reference-case projections both to incentivize domestic gas supply and ensure that domestic demand is adequately served."

The AEO reference-case price projections are $4.87/MMbtu in 2025 and $5.40/MMbtu in 2030, with domestic consumption growing 0.7%/year during 2010-30.

"Given the large number of variables at play, it is challenging to nail down exactly how high Henry Hub could rise if LNG export capacity materializes as anticipated by FGE and is fully utilized," FGE says.

The firm notes AEO's scenario assuming high economic growth and low oil and gas resources shows Henry Hub gas prices rising to $6-7/MMbtu by 2030. But that scenario for economic growth assumes the addition of only about 35 million tpy of LNG equivalent to US consumption in comparison with the reference case.

"Clearly, if LNG exports increase by some 50 million tpy more than projected by the AEO, US gas prices could settle at a higher plateau—perhaps $7-8/MMbtu if domestic demand remains robust," FGE says.

Exhibit B

Bloomberg
http://www.bloomberg.com/news/2012-01-19/lng-exports-may-spur-higher-u-s-natural-gas-prices-report-says.html

Exports of LNG May Raise U.S. Prices as Much as 54%, Agency Says

By Katarzyna Klimasinska - Jan 19, 2012

Exporting liquefied natural gas may increase U.S. prices for the fuel as much as 54 percent, the Energy Information Administration said in a report sought by the Energy Department for its review of export permits.

The findings support manufacturers who oppose sales overseas, saying their production costs would rise. Sempra Energy (SRE), owner of the Cameron gas terminal in Louisiana, Freeport LNG in partnership with Macquarie Group Ltd. (MQG), and Dominion Resources Inc. (D) are seeking permits to ship the fuel, as hydraulic fracturing boosts production.

U.S. natural-gas prices, at record lows this month, will increase under all scenarios considered by the agency, which provides research to the Energy Department, even without any shipments to foreign countries.

"Rapid increases in export levels lead to large initial price increases that moderate somewhat in a few years," the agency said in the report. "Slower increases in export levels lead to more gradual price increases but eventually produce higher average prices during the decade between 2025 and 2035."

After Cheniere Energy Inc. (LNG) won a U.S. permit in May to ship gas from its Sabine Pass facility in Louisiana, manufacturers using natural gas, led by the Washington-based Industrial Energy Consumers of America, complained that sales to foreign countries may raise prices at home.

LNG exports were criticized by congressional Democrats including Representative Edward Markey of Massachusetts and Senator Ron Wyden of Oregon.

'Economic Advantage'

In allowing more exports, the U.S. may be "trading away the enormous economic advantage of having large, low-cost domestic natural gas supply," Wyden said in an e-mailed statement on Jan. 6.

Daily exports of 6 billion cubic feet, phased in over six years, would produce an increase as high as 14 percent in 2022. Boosting exports to 12 billion cubic feet over four years would drive prices up 36 percent in 2018, the report said.

While natural gas exports would spur production, prices at the well would rise 54 percent in 2018 under a more pessimistic estimate by the agency of total gas resources, according to the report.

Price changes for industrial consumers, on a percentage basis, tend to be lower than adjustments at the wellhead, the agency said in the report.

Natural gas futures settled at a 10-year low yesterday, pushed down by low demand as milder weather during mild U.S. weather, and abundant supply from gas extracted from shale formations such as Marcellus in Pennsylvania.

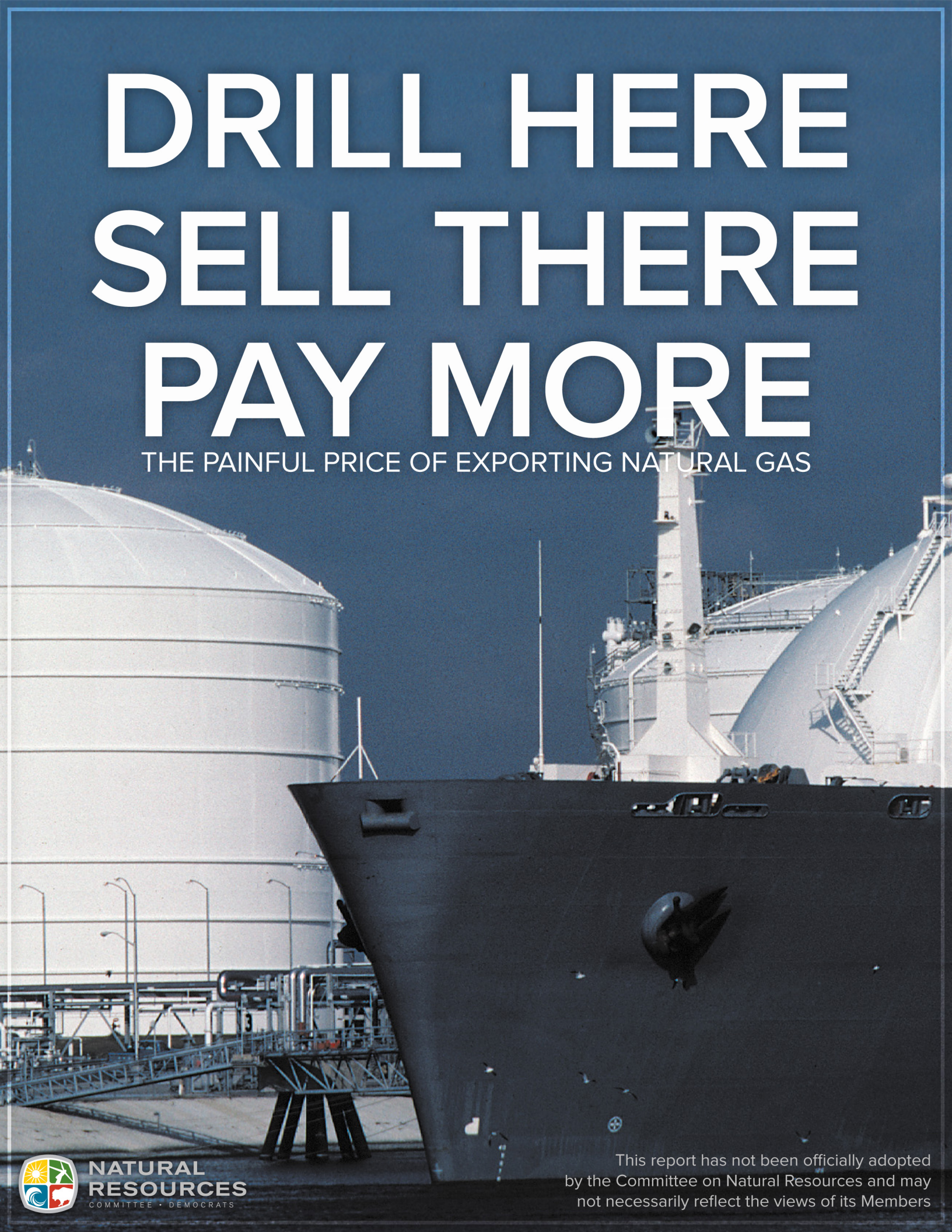
Natural gas for February delivery fell 1.6 cents to $2.472 per million British thermal units on the New York Mercantile Exchange, the lowest settlement since March 2002. Gas futures have tumbled 44 percent from a year ago.

To contact the reporter on this story: Katarzyna Klimasinska in Washington at kklimasinska@bloomberg.net
To contact the editor responsible for this story: Steve Geimann at sgeimann@bloomberg.net

Exhibit C

DRILL HERE SELL THERE PAY MORE

THE PAINFUL PRICE OF EXPORTING NATURAL GAS



NATURAL RESOURCES
COMMITTEE • DEMOCRATS

Executive Summary

The United States faces a critical decision about whether to export natural gas following the rapid expansion of domestic production in recent years. The Department of Energy has already approved one export application and is currently considering eight others. If these applications are approved and the companies export at full capacity, the United States could soon be exporting more than 20 percent of current consumption. The Energy Information Administration has estimated that exporting even less natural gas than what is currently under consideration could raise domestic prices 24 to 54 percent, which would substantially increase energy bills for American consumers and could potentially have catastrophic impacts on U.S. manufacturing.

In a February 24th letter to Massachusetts Congressman Edward J. Markey, Department of Energy (DOE) official Christopher Smith made clear that no additional export permits will be approved by the Department at least until an additional evaluation of the macroeconomic impact of these prospective exports is completed and reviewed by DOE this spring.[1] This decision represents an important deliberative step that ensures deeper consideration will be given to the ramifications of energy exporting.

In examining energy markets and the impacts of higher natural gas prices, the House Natural Resources Democratic Staff found that:

- Unlike the oil market, natural gas prices are not determined on a global market. Natural gas prices in Europe and Asia are 3 to 7 times higher than in the United States. This provides the American economy with a competitive advantage in the manufacture of energy-intensive goods.

- From 2000 to 2008, the price of natural gas rose more than 400 percent, and was a major contributor to the U.S. manufacturing sector losing 3.7 million jobs. While larger macroeconomic forces were also at work during this period, it is clear that the cost of natural gas for industries like steel, plastics, chemicals, paper, glass, fertilizer, cement, and refining is a very significant determinant in whether facilities are sited domestically or overseas. Keeping American natural gas resources in America and keeping prices low will support a more diversified domestic economy and provide greater domestic job benefits than pursuing an export strategy.

- Keeping natural gas resources at home will allow greater amounts of natural gas to be used in the domestic electric power and transportation sectors. Greater natural gas utilization in these sectors could lead directly to a 1.2 million barrel per day reduction in

[1] Included as an appendix to this report.

foreign oil imports and a 9 percent reduction in coal consumption by 2035, which would measurably enhance America's national, economic, and environmental security.

Legislation introduced by Rep. Markey would prevent companies from exporting natural gas extracted from public lands (H.R. 4025) and would place a moratorium on the Federal Energy Regulatory Commission approving the siting and development of LNG export terminals before 2025, except under special circumstances (H.R. 4024).

Background

On June 10, 2003, the Chairman of the Federal Reserve Board, Alan Greenspan, testified before the House Energy and Commerce Committee that rising natural gas prices were harming domestic manufacturers and that large numbers of liquefied natural gas (LNG) terminals were needed to import more natural gas and stabilize prices. He said:

> *The updrift and volatility of the spot price for gas have put significant segments of the North American gas-using industry in a weakened competitive position. …The perceived tightening of long-term demand-supply balances is beginning to price some industrial demand out of the market. …Access to world natural gas supplies will require a major expansion of LNG terminal import capacity. …As the technology of LNG liquefaction and shipping has improved, and as safety considerations have lessened, a major expansion of U.S. import capability appears to be under way. These movements bode well for widespread natural gas availability in North America in the years ahead.*[2]

Chairman Greenspan was half right. Since natural gas is both the primary fuel source for the industrial sector and a primary feedstock for the production of plastics, chemicals, fertilizers, and many other products, low-price natural gas is essential to our industrial competitiveness. The increase in natural gas prices of more than 400 percent between 2000 and 2008 significantly undermined American industrial competitiveness and was a major factor in the loss of 3.7 million manufacturing jobs during that time.[3]

But Chairman Greenspan turned out to be wrong about our need to import large amounts of LNG. Subsequent discoveries of domestic shale gas deposits and advances in horizontal drilling and hydraulic fracturing techniques, have led to expanded domestic gas reserves and production and the lowest well-head prices[4] in 10 years. Of the nearly 50 LNG import terminals that have been certified for construction,[5] only 12 facilities were ultimately built.[6] And of this 6.95 trillion cubic feet (Tcf) of LNG import capacity, only 0.35 Tcf of natural gas was actually

---

[2] Testimony of Alan Greenspan, Chairman, Federal Reserve, before the House Committee on Energy and Commerce, June 10, 2003, available at http://www.federalreserve.gov/boarddocs/testimony/2003/20030610/default.htm

[3] Testimony of Rich Wells, Vice President Energy, The Dow Chemical Company, before the House Select Committee on Energy Independence and Global Warming, July 30, 2008, available at http://globalwarming.house.gov/files/HRG/FullTranscripts/110-46_2008-07-30.pdf

[4] The well-head price is the price charged by the producer for petroleum or natural gas without transportation costs. See http://www.merriam-webster.com/dictionary/wellhead+price#

[5] Testimony of Kenneth B. Medlock III, Rice University, before the Senate Committee on Energy and Natural Resources, Nov. 8, 2011, available at http://energy.senate.gov/public/_files/MedlockTestimony110811.pdf.

[6] Federal Energy Regulatory Commission, North American LNG Import Terminals – Existing, January 10, 2012, available at http://ferc.gov/industries/gas/indus-act/lng/LNG-existing.pdf

imported in 2011, a utilization rate of 5 percent.[7] Several of these import terminals are now mothballed entirely and their owners are looking to turn them into LNG export terminals. [8]

The Natural Gas Market Today

Natural gas production in the United States reached a historical high in November 2011, when producers withdrew an average of 82.7 billion cubic feet per day, 18 percent higher than five years earlier.[9] This expansion in domestic natural gas supplies has led to a reduction in domestic prices. Even while consumption of natural gas has been increasing, the average wellhead price has stayed below $5 per million cubic feet (Mcf) for more than two years. Shale gas now accounts for more than a third of total U.S. gas resources.[10] The Energy Information Administration (EIA) estimates that shale gas will provide 49 percent of total U.S. natural gas supply by 2035, up from 23 percent in 2010.[11] Net imports now represent 10 percent of total U.S. consumption, the lowest proportion since 1993, and this share is expected to continue to shrink.

Unlike oil, natural gas prices are not set on a global market. Natural gas cannot currently be moved cheaply in volumes great enough to efficiently link low-cost producing regions with high-demand regions. With massive deployment of expensive infrastructure—international natural gas pipelines, special cryogenic LNG tankers, liquefaction equipment—regional natural prices would converge to a global price in the same way that global oil prices have emerged. However, like the oil market, a global natural gas market could be manipulated by nations, national companies, and cartels in the same way that the Organization of Petroleum Exporting Countries (OPEC) now manipulates the global oil market.

Regional variation in natural gas prices is considerable, as seen in Figure 1. For example, natural gas prices are six to seven times higher in Asia than they are in the United States. Prices are more than three times higher throughout most of Europe. The regional nature of the natural gas market clearly benefits American consumers and businesses.

---

[7] Federal Energy Regulatory Commission, North American LNG Import Terminals – Existing, January 10, 2012, available at http://ferc.gov/industries/gas/indus-act/lng/LNG-existing.pdf; Energy Information Administration, *U.S. Natural Gas Imports by Country,* available at http://www.eia.gov/dnav/ng/ng_move_impc_s1_a.htm

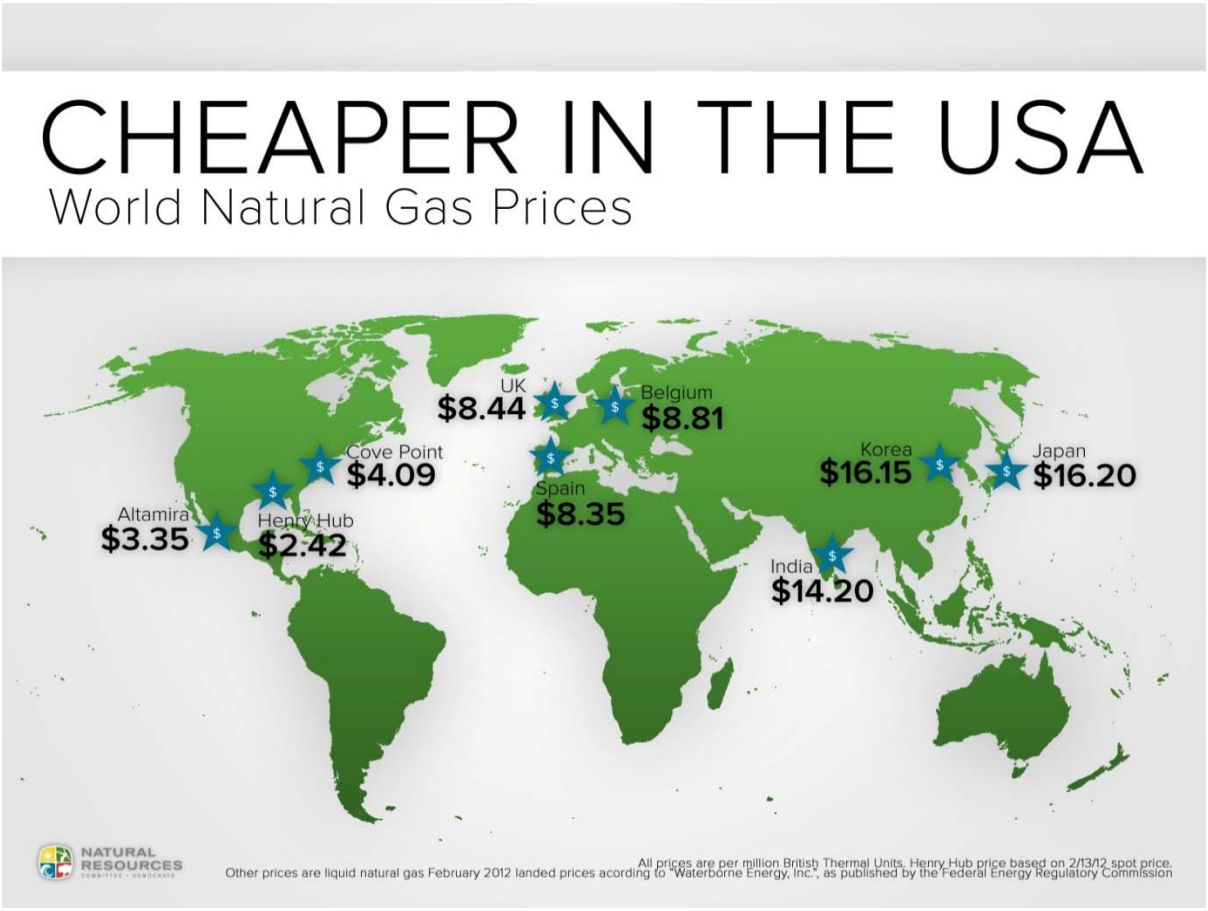
[8] Energy Information Administration, *U.S. Natural Gas Imports by Point of Entry*, available at http://www.eia.gov/dnav/ng/ng_move_poe1_a_EPG0_IML_Mmcf_a.htm

[9] Energy Information Administration, *Monthly Natural Gas Gross Production Report,* February, 2012, available at *http://www.eia.gov/oil_gas/natural_gas/data_publications/eia914/eia914.html*

[10] U.S. Geological Survey, *Total Oil and Gas Resources*, available at http://certmapper.cr.usgs.gov/data/noga00/natl/tabular/2011/2011_FINAL_TABLE.xls

[11] Energy Information Administration, *Annual Energy Outlook 2012*, available at *http://www.eia.doe.gov/oiaf/aeo/*

Figure 1. Natural Gas Prices around the World

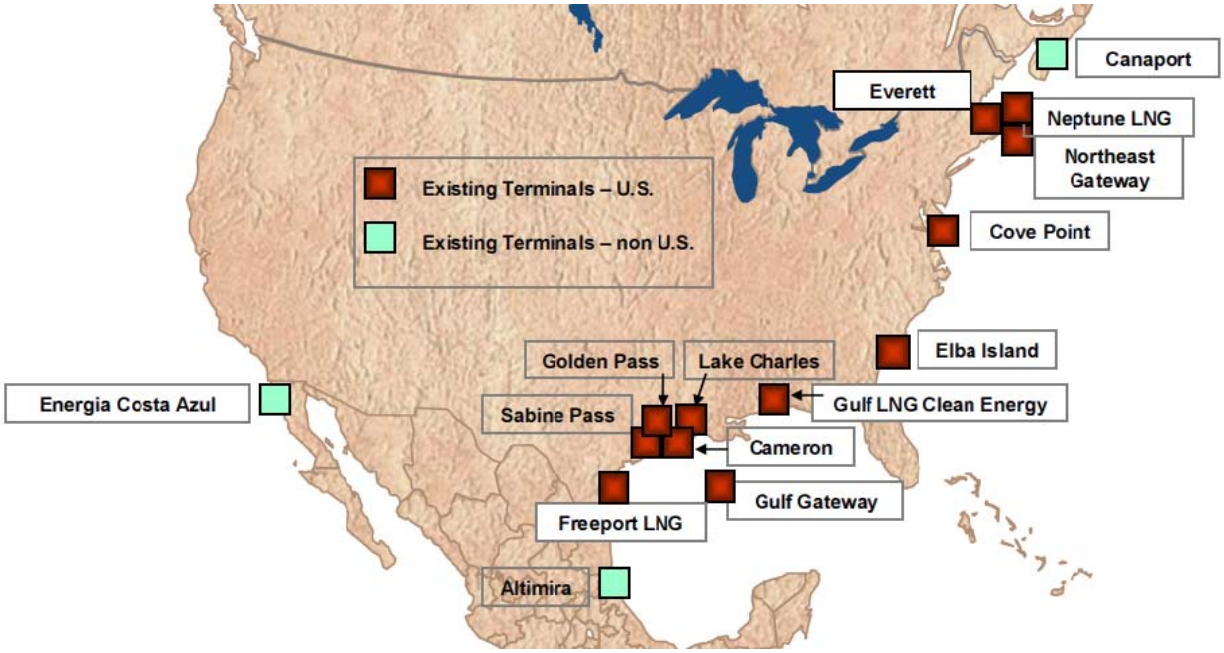


The Department of Energy Considers Export Permits

Export Applications Pour In

As a result of high domestic natural gas production and higher prices in foreign markets, several companies have submitted applications to the Department of Energy over the past year seeking permits to export domestically produced natural gas. Most of these applications are planning to use LNG terminals that were originally built for importing. Existing terminals can be seen in Figure 2.

Figure 2. Existing North American LNG Terminals



Source: U.S. Department of Energy. Available at:
http://fossil.energy.gov/programs/oilgas/storage/publications/Complete_LNG_Terminal_Status_Maps_Q2_201.pdf

DOE has already approved a plan from a Cheniere Energy subsidiary, Sabine Pass Liquefaction, to export LNG through a terminal originally built for importing the fuel. This export facility, which is still at least four years away from becoming operational, has booked major deals to export American natural gas to Indian and Korean markets and, in total, has long-term agreements in place to export 89 percent of its approved capacity.[12] DOE is now considering eight other LNG export applications. If all nine export applications are approved and this export capacity is fully utilized, the companies would export an amount equal to 20.6 percent of current U.S. consumption, according to data provided by DOE to Democratic staff on the House Natural Resources Committee.

After the Sabine Pass approval in May of 2011 and the subsequent rush of new applicants, DOE commissioned the EIA and a private contractor to undertake separate studies on the cumulative impacts of pending natural gas export applications. DOE has since committed to withhold approval of the pending export applications until these studies are completed. EIA released its study in January, finding that domestic natural gas prices could rise more than 50 percent if exports take off (see summary below). The second study is scheduled to be completed this spring.

[12] Edward Klump, *Korea Gas to Buy U.S. LNG as Gas Slump Attracts Asian Importers*, available at http://www.bloomberg.com/news/2012-01-30/cheniere-agrees-to-sabine-pass-export-deal-with-korea-gas-1-.html

Roles and Authorities

Section 3(a) of the Natural Gas Act of 1938 defines the process for DOE's reviews of most LNG export applications. In particular, the Secretary of Energy must approve an export application "unless after opportunity for hearing, [the Secretary] finds that the proposed exportation… will not be consistent with the public interest." Thus, there is "a rebuttable presumption that a proposed export of natural gas is in the public interest," according to DOE. This presumption must be overcome for DOE to deny an export application. For export approvals, DOE may also attach terms or conditions that it considers necessary to protect the public interest.

The Energy Policy Act of 1992 amended the Natural Gas Act to further limit DOE's ability to deny natural gas export applications. Specifically, DOE *must* approve applications to export natural gas to the 15 countries that have free trade agreements (FTAs) with the United States covering natural gas.[13] Such applications are automatically deemed in the public interest, and DOE cannot add any terms or conditions to approvals.

In addition to DOE authorization to export LNG, companies must receive authorization from the Federal Energy Regulatory Commission (FERC) for the actual siting and development of LNG projects, as specified under Section 3 of the Natural Gas Act.[14] FERC is also the lead agency responsible for the preparation of the analysis and decisions required under National Environmental Policy Act for the approval of new facilities, including tanker operation, marine facilities, and terminal construction and operation, environmental and cultural impacts.[15]

The Energy Information Administration Study

If DOE approves the pending applications and exports rise as expected, domestic natural gas prices could increase 24 to 54 percent, depending on recoverable shale resources and how quickly exports are ramped up, according to the EIA's January report.[16] About three-quarters of the increased natural gas production needed to satisfy such export demand would come from shale sources, according to an EIA export scenario. That would require a dramatic expansion of hydraulic fracturing, or "fracking," which is necessary to access these resources.

Higher prices are also expected to substantially reduce U.S. demand for natural gas. Around 30 to 40 percent of natural gas export demand would be met through reduced domestic consumption, not increased production, according to EIA. Consequently, EIA projects that dirty

---

[13] These countries are Australia, Bahrain, Canada, Chile, Dominican Republic, El Salvador, Guatemala, Honduras, Jordan, Mexico, Morocco, Nicaragua, Oman, Peru, and Singapore. Three other countries, South Korea, Colombia, and Panama, will soon join this club when their Senate-ratified trade agreements take effect.

[14] 15 U.S.C. § 717

[15] Interagency Agreement Among the FERC et al. Available at: www.ferc.gov/legal/maj-ord-reg/mou/mou-24.pdf

[16] Energy Information Administration, *Effect of Increase Natural Gas Exports on Domestic Energy Markets*, available at http://www.eia.gov/analysis/requests/fe/pdf/fe_lng.pdf

coal-fired power generation will rise in the United States to make up for the expected decline in natural gas-fired electricity generation.

Energy Department Responds to Markey Letter

Rep. Markey, Ranking Member on the House Natural Resources Committee, wrote to Energy Secretary Steven Chu in January asking about the consequences of exporting greater amounts of natural gas, including the consequences for prices, manufacturing and economic growth, energy security, and the environment.

Deputy Assistant Secretary Christopher Smith responded on behalf of Secretary Chu. This response, delivered February 24th, noted that DOE has already approved the export of 10.93 billion cubic feet of natural gas per day (Bcf/d) to countries with free trade agreements with the United States.[17] The EIA report looked at export scenarios associated with the approval of additional exports to counties without free trade agreements. The second report by the private contractor is still being completed, but Smith wrote that it would provide important information about the macroeconomic consequences resulting from EIA's export scenarios, including:

- Consequences for domestic energy consumption, production, and prices;
- Effects on gross domestic product, job creation, and balance of trade; and
- Impacts on U.S. manufacturers, especially energy intensive industries.

Smith made clear that DOE would not approve the pending export applications until this study is finished and DOE has considered the findings. "We are mindful of the need for prompt action in each of the non-FTA LNG export proceedings before us," Smith wrote. "We are equally mindful that a sound evidentiary record is essential to reach a reasoned decision in these proceedings. As such, DOE will not issue a final order addressing the pending applications to export LNG to non-FTA countries until the full study has been completed and the Department has had an opportunity to review the results."

Economic Ramifications of Exporting

The United States currently enjoys affordable natural gas that benefits consumers and also provides us with a competitive advantage that is felt up and down the U.S. economy. Affordable natural gas keeps energy prices low for consumers that rely on natural gas for heating, cooking, and electricity. Increasing those energy costs on American consumers and businesses by exporting would have a direct impact on their disposable income and reduce their purchasing power.

Industrial and manufacturing facilities are the largest consumers of natural gas in the United States—ahead of the electricity, commercial, and residential sectors—and would be especially hard hit. These facilities may require natural gas not only as a primary energy source

[17] DOE now has pending or approved permits for exports to FTA countries totaling 12.51 Bfc/d. DOE LNG docket available at: http://fossil.energy.gov/programs/gasregulation/LNG_Summary_Table_2-29-12_2.pdf

but also use it as a physical input into product. In some sectors, like fertilizers and chemicals, natural gas can constitute 80 to 90 percent of the cost of production. For businesses like these, the cost of energy may be the number one determining factor in whether to site production in the United States and employ American workers or whether to move production overseas.

In the past, high natural gas prices have had a disastrous effect on U.S. manufacturing. From 2000 to 2008, the price of natural gas rose more than 400 percent, and was a major contributor to the U.S. manufacturing sector losing 3.7 million jobs.[18] Other variables were certainly relevant to this undermining of manufacturing competitiveness as well, including the 2001 recession in the global trend of moving manufacturing to countries with lower labor costs. However, for energy intensive industries—like aluminum, steel, plastics, chemicals, paper, glass, fertilizer, food processing, cement, and refining—the cost of energy is a far greater share of production costs than labor and a more significant determinant in facility siting.

The experiences of some specific energy-intensive industries below illustrate the dangers that natural gas exporting could have on sectors of the U.S. economy.

Fertilizer Industry

An important use of natural gas is as a feedstock in fertilizer production. In this process, natural gas is used to produce ammonia, which has a high nitrogen content, and the ammonia becomes the primary component of nitrogen fertilizers. It takes 33,500 cubic feet of natural gas to manufacture 1 ton of anhydrous ammonia fertilizer.[19] As a result, natural gas can account for up to 90 percent of the cost to produce ammonia fertilizer.[20]

The fertilizer sector is the largest industrial consumer of natural gas in the United States, consuming 60 percent of U.S. industrial demand.[21] The period between 2000 and 2006 was a devastating one for the U.S. fertilizer industry, as seen in Figure 3. Domestic ammonia fertilizer production declined 44 percent, and more than a third of all U.S. fertilizer production capacity shuttered. At the same time, imports skyrocketed 115 percent.[22]

---

[18] Dow Jones Industrial Average Basic Chart, Yahoo! Finance, available at http://finance.yahoo.com/q/bc?s=%5EDJI&t=my&l=on&z=l&q=l&c=;

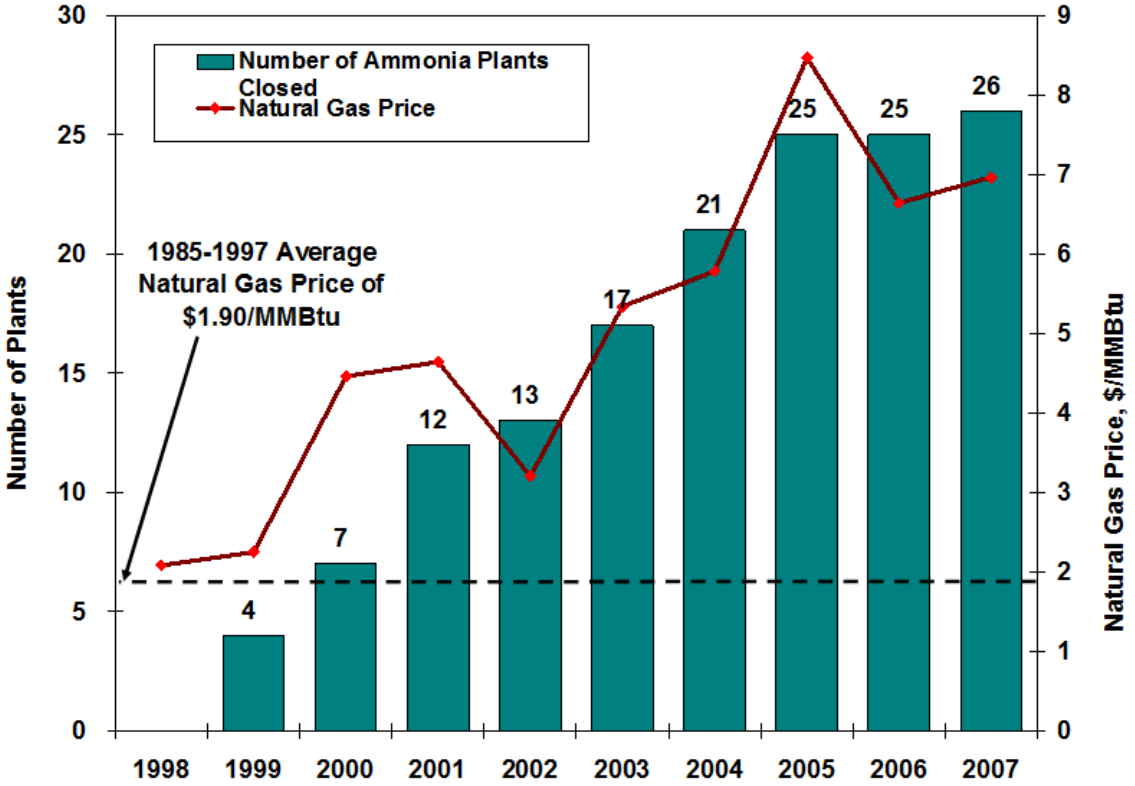
[19] Eddie Funderberg, *Why are Natural Gas Prices So High?*, available at http://www.noble.org/ag/soils/nitrogenprices/index.htm

[20] *Domestic Nitrogen Fertilizer Production Depends on Natural Gas Availability and Prices*, U.S. General Accounting Office, GA)-03-1148, September 2003.

[21] Robert Pirog, Specialist in Energy Economics, Congressional Research Service, *Industrial Demand and the Changing Natural Gas Market* February 10, 2011, available at http://www.crs.gov/pages/Reports.aspx?PRODCODE=R41628&Source=author

[22] Wen-yuan Huang, USDA, *Impact of Rising Natural Gas Prices on U.S. Ammonia Supply*, available at http://www.ers.usda.gov/publications/wrs0702/wrs0702.pdf

Figure: 3. U.S. Ammonia Plant Closures Increase as Natural Gas Prices Rise



Source: Blue, Johnson and Associates, IFDC, Natural Gas Week and The Fertilizer Institute

The harm to the U.S. economy and domestic jobs was not limited to merely the fertilizer industry. The cost of buying fertilizer to farmers rose 130 percent between 2000 and 2006, from $227 per ton to $521. Farmers get especially squeezed with higher fertilizer costs because they are often times unable to pass along higher fertilizer costs in what they charge for their commodity crops. According to the U.S. Department of Agriculture, "With lower crop prices, high fertilizer prices would place downward pressure on farmers' net returns. Farms with higher than average fertilizer costs, a greater need to use fertilizers on the crops they grow, and/or a limited ability to either move away from fertilizer-intensive crops or substitute other inputs will be especially vulnerable if fertilizer prices increase once again."[23]

[23] Wen-yuan Huang, USDA, Recent Volatility in U.S. Fertilizer Prices, available at http://www.ers.usda.gov/AmberWaves/March09/Features/FertilizerPrices.htm

With U.S. natural gas prices at 10-year lows, fertilizer production is coming back to the United States, albeit slowly. Over the past two years, several facilities have returned to production and a series of large expansions are under consideration:[24]

- Oklahoma-based LSB Industries reopened its Pryor, Oklahoma ammonia facility in 2009 and two smaller units at Pryor will restart soon as well.

- Orascom Construction has purchased and reopened a large ammonia plant in Beaumont, Texas. The company announced earlier this year that "Low natural gas prices in the U.S. were a deciding factor in the company's decision to acquire and rehabilitate the plant."

- PCS Corporation is in the process of reopening its large plant in Geismar, Louisiana with an online target in the third quarter this year. It is also considering expansions at its Lima, Ohio and Augusta, Georgia plants.

- CF Industries has reopened portions of its giant Donaldsonville, Louisiana, facility in the past two years and has purchased an additional facility. The company announced last year that it plans to invest $1 billion to $1.5 billion over the next four years to expand its production capacity for ammonia and other products.

For farmers waiting to see a drop in fertilizer prices, this new domestic production cannot come online fast enough. Even though U.S. natural gas prices have fallen to 10-year lows, fertilizer prices remain high because the United States now imports more than half of its fertilizer. Imported fertilizer comes from regions which do not have the low natural gas prices that the United States is currently enjoying, increasing the prices for farmers.[25]

Chemicals and Plastics Industry

Chemical manufacturers rely on natural gas for 58 percent of their fuel and natural gas liquids for 58 percent of their feedstock.[26] Natural gas constitutes upwards of 80 percent of the total cost to produce plastic.[27] The high natural gas prices the U.S. chemical and plastics industry faced throughout much of the last decade significantly eroded the U.S. chemicals industry's competitive position. As detailed in Figure 4, the U.S. chemical industry was essentially wiped out as an export sector between 1997 and 2006, as net exports fell from $16.8 billion annually to $218 million. Of the largest 120 chemical plants being built around the world in 2005, exactly one was located in the United States. According to the U.S. Commerce Department, "The

[24] Stephanie Seay, Platts, *Low gas costs may not be enough to spur large fertilizer expansion*, available at http://www.platts.com/RSSFeedDetailedNews/RSSFeed/NaturalGas/3915346

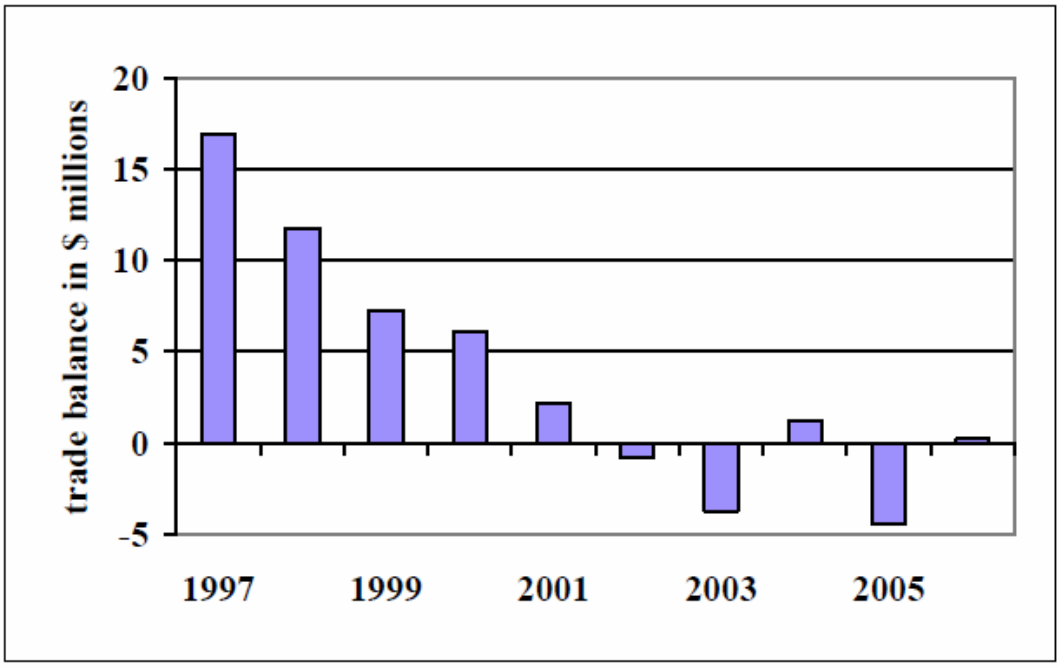
[25] Jonathan Knutson, Agweek, *Will tile drainage pay off?,* available at http://www.agweek.com/event/article/id/19564/

[26] American Chemistry Council, *Guide to the Business of Chemistry*, 2005.

[27] PowerPoint presentation "Manufacturing Competitiveness and Jobs Depend Upon Affordable and Reliable Electricity and Natural Gas," Industrial Energy Consumers of America, February 2012.

increase in U.S. natural gas prices has helped reduce and even eliminate in some recent years the United States' trade surplus in bulk chemicals."[28]

Figure 4. U.S. Trade Balance for Chemicals (not including pharmaceuticals)



Source: U.S. Department of Commerce, *Energy Policy and U.S. Industry Competitiveness. Available at:* *http://ita.doc.gov/td/energy/energy%20use%20by%20industry.pdf*

Appearing before the Select Committee on Energy Independence and Global Warming in 2008, the Dow Chemical Company's Vice President for Energy, Rich Wells, testified to the difficulties that the domestic chemical industry was facing. Dow had shut down dozens of uncompetitive U.S. plants in the previous decade as natural gas prices had skyrocketed. They were investing preferentially in the Middle East and other parts of the world where energy costs were lower. Wells explained that it was cheaper for chemical companies to move their manufacturing to where energy is cheap than to move cheap energy to their manufacturing.[29]

Once again, like the fertilizer sector, low domestic natural gas prices are driving a resurgence in the domestic chemical industry. According to the American Chemistry Council, "A new competitive advantage has already emerged for U.S. petrochemical producers."[30] Dow has

[28] Rachel Halpern, International Trade Administration, *Energy Policy and U.S. Industry Competitiveness*, available at http://ita.doc.gov/td/energy/energy%20use%20by%20industry.pdf

[29] Rich Wells, Vice President Energy, The Dow Chemical Company http://globalwarming.house.gov/files/HRG/FullTranscripts/110-46_2008-07-30.pdf

[30] American Chemistry Council, *Shale Gas and New Petrochemicals Investment: Benefits for the Economy, Jobs, and US Manufacturing, March, 2011, available at* http://www.americanchemistry.com/ACC-Shale-Report

announced it will increase key chemical processing capability along the Gulf Coast by 20 to 30 percent over the next two to three years. The American Chemistry Council estimates that if natural gas-based feedstock prices stay low and supply expands, the U.S. chemical industry is projected to invest $49 billion in new plants and equipment in the United States in the coming years and spur the creation of more than 400,000 jobs across the U.S. economy. Such investments would generate $44 billion in new federal, state, and local tax revenue over the next decade.[31] Low-priced natural gas is the key to unlocking these economic benefits.

Steel Industry

The domestic steel sector's fuel reliance is split mostly between natural gas, electricity, and coal-derived coke, and the sector's natural gas consumption makes up 4 percent of U.S. industrial natural gas use.[32] The steel industry is highly energy-intensive with very tight margins, and small changes in energy prices can have a significant impact on the cost of downstream manufactured goods like automobiles, construction equipment, and wind turbines. Recycled steel is especially energy intensive, and energy can account for 25 percent or more of the cost of production.[33]

Integrated steelmakers, which produce steel from raw iron ore, use natural gas as the primary energy source for the reheating and rolling procedures at the end of the steelmaking process. Recent low natural gas prices have allowed companies to replace costly and dirty coal-derived coke with natural gas, which has become a far more cost-effective way of melting iron ore. U.S. Steel estimates that with natural gas prices around what they are today, substituting natural gas for coal-derived coke translates to savings of $7 per ton of steel.[34] A $1 per million BTU increase in the price of natural gas would increase costs by more than $100 million for U.S. Steel, based on current gas usage and steel production levels.

Another American steel producer, Nucor, has utilized low natural gas prices to build new "direct reduced iron" facilities,[35] which combine natural gas with iron ore pellets to create a steady feedstock for the company's electric arc furnaces. This is a growing technology that now accounts for more than 60 percent of steel production in the United States. Low natural gas prices are critical to operating these types of facilities. Seven years ago, as U.S. natural gas prices

[31] Id.
[32] American Iron and Steel Institute, *2010 Annual Statistical Report*, Table 37
[33] PowerPoint presentation "Manufacturing Competitiveness and Jobs Depend Upon Affordable and Reliable Electricity and Natural Gas," Industrial Energy Consumers of America, February 2012.
[34] U.S. Steel, second quarter conference call, July 26, 2011, available at http://seekingalpha.com/article/282049-united-states-steel-s-ceo-discusses-q2-2011-results-earnings-call-jul-26-2011-transcript
[35] Nucor press release, March 7, 2011, available at http://www.nucor.com/investor/news/releases/?rid=1536511

were much higher than today, Nucor relocated a facility to Trinidad in order to take advantage of "a low cost supply of natural gas."[36]

Conclusion

If we keep natural gas here at home, and keep prices low, we will accelerate the transition away from coal and foreign oil, making U.S. energy consumption not only cheaper, but cleaner and more secure.

Natural gas could eventually overtake coal as America's primary source of electricity. In just the last six years, coal's share of the U.S. electricity market has dropped from 50 percent to 43 percent, with natural gas displacing most of this production, along with wind. At the same time, buses and commercial fleet vehicles, which consume large amounts of fuel, are increasingly powered by natural gas instead of gasoline. "Replacing 3.5 million of these heavy vehicles with natural gas vehicles by 2035 would save more than 1.2 million barrels of oil per day compared to business as usual, which is more than we imported from either Venezuela or Saudi Arabia in 2009," according to a report by the Center for American Progress.[37]

Using more natural gas for electricity and transportation is expected to drive up U.S. demand by 18 percent by 2035 under current policies and commitments, "causing coal demand to drop by around 9% and oil demand by around 6%," according to the International Energy Agency.[38] This transition away from coal and foreign oil, however, could be slowed or jeopardized if we undermine our affordable domestic natural gas supply by exporting it to foreign markets.

To address these concerns Rep. Ed Markey has introduced two bills to stop natural gas from being exported. H.R. 4025 would prevent oil and gas companies from exporting natural gas extracted from public lands, and H.R. 4024 would place a moratorium on the Federal Energy Regulatory Commission approving the siting and development of LNG export terminals until 2025, except under special circumstances. Markey also offered a floor amendment to H.R. 3408, the so-called PIONEERS Act, that would have stopped the exporting of natural gas extracted from the public lands and waters opened up by the bill. That amendment failed by a vote of 173 to 254.

Instead of starting with a presumption in favor of exports, they should be evaluated against the following goals for American energy policy:

1. Keep energy affordable for American consumers;
2. Grow U.S. manufacturing and support its competitive position in the global economy;
3. Reduce America's dependence on foreign oil; and

---

[36] Nucor press release, January 16, 2007, available at http://www.nucor.com/investor/news/releases/?rid=950793

[37] Center for American Progress, *American Fuel: Developing Natural Gas for Heavy Vehicles*, available at http://www.eia.gov/analysis/requests/fe/pdf/fe_lng.pdf

[38] International Energy Agency, *Are We Entering a Golden Age of Gas?*, World Energy Outlook 2011, page 22, available at http://www.iea.org/weo/docs/weo2011/WEO2011_GoldenAgeofGasReport.pdf.

4. Reduce dangerous environmental pollution.

These goals are now being advanced because natural gas supplies are abundant; prices are cheaper here than abroad; and natural gas is becoming more economical than dirtier coal and imported oil. If we keep natural gas here, these benefits will continue. If we export it abroad, we will undermine each goal.

Exhibit D

http://www.reuters.com/article/2013/09/18/dc-americas-energy-idUSnPNCG82555+1e0+PRN20130918
(Reuters is not responsible for the content in this press release.)

Press Release – September 18, 2013

America's Energy Advantage Files LNG Export Motion, Seeks Rulemaking on Public Interest Test

~Says DOE's Standards for Reviewing LNG Export Applications "Appear to be in Flux"

PR Newswire

WASHINGTON, Sept. 18, 2013 /PRNewswire/ -- In a major new development in the debate over LNG exports, America's Energy Advantage (AEA) today filed a formal motion to intervene in the Department of Energy's (DOE) proceeding for the Freeport LNG Expansion, L.P. and FLNG Liquefaction, LLC (together "FLEX") export application (FE Docket No. 11-161-LNG). **DOE is currently reviewing the application, which if authorized would raise the cumulative volume of authorized exports of LNG to 8.31 Bcf/d, which would go beyond the "low export scenario" level identified in a NERA report DOE used to grant three previous LNG export applications.**

AEA is seeking a more formal rulemaking process based on current data and assessments of today's supply and demand environment, and noted that current applications are being granted based on guidelines developed for gas imports in the 1980s. AEA's motion also indicates that the legal standards that DOE used to analyze the public interest in two previous grant applications were not "adequate, appropriate, or sustainable." See AEA's motion here: http://www.americasenergyadvantage.org/AEA-Comment.

"DOE is making decisions that will have far-reaching and potentially irreversible impacts on consumers, our economy, and America's manufacturing renewal based on 30-year-old guidelines for natural gas imports, not exports. No matter where one stands on this issue, surely we can agree that exports and imports are different, and that DOE needs to make rules based on the 21st century, not the 1980s," said Jennifer Diggins, Director, Public Affairs for Nucor Corporation and Chair of AEA.

"We felt the need to file a formal motion because American consumers of natural gas deserve as much say in the process as producers," said Diggins. "All we're saying is that the public interest test is important, and that DOE needs to take a more methodical and legally-based approach to defining what that public interest is. DOE itself conceded that 'the market of the future very likely will not resemble the market of today' in its previous grant applications, but what data are they using to project that future? Nobody knows."

Diggins concluded: "**As a result of available and affordable natural gas in the U.S., more than 120 manufacturing projects valued at nearly $110 billion of economic investment have been announced, including thousands of new jobs. Our country cannot afford to lose these job-creating investments or hurt consumers by driving up the cost of utility bills. We have a right to be heard in this debate."**

AEA submitted today's motion following DOE's failure in recently issued export authorizations to apply reasonable standards for assessing the public interest as required by the NGA. As AEA stressed in its motion: "It is not enough for DOE to summarily refer to the public interest, vaguely acknowledge that conditions may change, and imply that these changed conditions could possibly affect pending and future proceedings or retroactively affect previously granted authorizations. The development of an LNG export industry in the United States has widespread consequences affecting all segments of the American public interest, including the economy, the environment, public policy, international relations and the quality of life for American citizens."

About America's Energy Advantage

America's Energy Advantage, Inc. is a 501(c)(6) not for profit organization that is dedicated to educating the American public about the growth in American manufacturing that has been made possible by our country's abundant and affordable supply of natural gas.

SOURCE America’s Energy Advantage

[Emphasis has been added]

Exhibit E

Oregon State University
http://oregonstate.edu/ua/ncs/archives/2012/jul/13-year-cascadia-study-complete-%E2%80%93-and-earthquake-risk-looms-large

13-year Cascadia study complete – and earthquake risk looms large

08/01/2012 – Source Chris Goldfinger

CORVALLIS, Ore. – A comprehensive analysis of the Cascadia Subduction Zone off the Pacific Northwest coast confirms that the region has had numerous earthquakes over the past 10,000 years, and suggests that the southern Oregon coast may be most vulnerable based on recurrence frequency.

Written by researchers at Oregon State University, and published online by the U.S. Geological Survey, the study concludes that there is a 40 percent chance of a major earthquake in the Coos Bay, Ore., region during the next 50 years. And that earthquake could approach the intensity of the Tohoku quake that devastated Japan in March of 2011.

"The southern margin of Cascadia has a much higher recurrence level for major earthquakes than the northern end and, frankly, it is overdue for a rupture," said Chris Goldfinger, a professor in OSU's College of Earth, Ocean, and Atmospheric Sciences and lead author of the study. "That doesn't mean that an earthquake couldn't strike first along the northern half, from Newport, Ore., to Vancouver Island.

"But major earthquakes tend to strike more frequently along the southern end – every 240 years or so – and it has been longer than that since it last happened," Goldfinger added. "The probability for an earthquake on the southern part of the fault is more than double that of the northern end."

The publication of the peer-reviewed analysis may do more than raise awareness of earthquake hazards and risks, experts say. The actuarial table and history of earthquake strength and frequency may eventually lead to an update in the state's building codes.

"We are considering the work of Goldfinger, et al, in the update of the National Seismic Hazard Maps, which are the basis for seismic design provisions in building codes and other earthquake risk-mitigation measures," said Art Frankel, who has dual appointments with the U.S. Geological Survey and the University of Washington.

The Goldfinger-led study took four years to complete and is based on 13 years of research. At 184 pages, it is the most comprehensive overview ever written of the Cascadia Subduction Zone, a region off the Northwest coast where the Juan de Fuca tectonic plate is being subducted beneath the continent. Once thought to be a continuous fault line, Cascadia is now known to be at least partially segmented.

This segmentation is reflected in the region's earthquake history, Goldfinger noted.

"Over the past 10,000 years, there have been 19 earthquakes that extended along most of the margin, stretching from southern Vancouver Island to the Oregon-California border," Goldfinger noted. "These would typically be of a magnitude from about 8.7 to 9.2 – really huge earthquakes.

"We've also determined that there have been 22 additional earthquakes that involved just the southern end of the fault," he added. "We are assuming that these are slightly smaller – more like 8.0 – but not necessarily. They were still very large earthquakes that if they happened today could have a devastating impact."

The clock is ticking on when a major earthquake will next strike, said Jay Patton, an OSU doctoral student who is a co-author on the study.

"By the year 2060, if we have not had an earthquake, we will have exceeded 85 percent of all the known intervals of earthquake recurrence in 10,000 years," Patton said. "The interval between earthquakes ranges from a few decades to thousands of years. But we already have exceeded about three-fourths of them."

The last mega-earthquake to strike the Pacific Northwest occurred on Jan. 26, 1700. Researchers know this, Goldfinger said, because written records in Japan document how an ensuing tsunami destroyed that year's rice crop stored in warehouses.

How scientists document the earthquake history of the Cascadia Subduction Zone is fascinating. When a major offshore earthquake occurs, Goldfinger says, the disturbance causes mud and sand to begin streaming down the continental margins and into the undersea canyons. Coarse sediments called turbidites run out onto the abyssal plain; these sediments stand out distinctly from the fine particulate matter that accumulates on a regular basis between major tectonic events.

By dating the fine particles through carbon-14 analysis and other methods, Goldfinger and colleagues can estimate with a great deal of accuracy when major earthquakes have occurred over the past 10,000 years.

Going back further than 10,000 years has been difficult because the sea level used to be lower and West Coast rivers emptied directly into offshore canyons. Because of that, it is difficult to distinguish between storm debris and earthquake turbidites.

"The turbidite data matches up almost perfectly with the tsunami record that goes back about 3,500 years," Goldfinger said. "Tsunamis don't always leave a signature, but those that do through coastal subsidence or marsh deposits coincide quite well with the earthquake history."

With the likelihood of a major earthquake and possible tsunami looming, coastal leaders and residents face the unenviable task of how to prepare for such events. Patrick Corcoran, a hazards outreach specialist with OSU's Sea Grant Extension program, says West Coast residents need to align their behavior with this kind of research.

“Now that we understand our vulnerability to mega-quakes and tsunamis, we need to develop a culture that is prepared at a level commensurate with the risk,” Corcoran said. “Unlike Japan, which has frequent earthquakes and thus is more culturally prepared for them, we in the Pacific Northwest have not had a mega-quake since European settlement. And since we have no culture of earthquakes, we have no culture of preparedness.

“The research, though, is compelling,” he added. “It clearly shows that our region has a long history of these events, and the single most important thing we can do is begin ‘expecting’ a mega-quake, then we can’t help but start preparing for it.”

Exhibit F

http://www.sciencedaily.com/releases/2013/10/131028141516.htm

Science News

... from universities, journals, and other research organizations

Scientists Wary of Shale Oil and Gas as U.S. Energy Salvation

Oct. 28, 2013 — After 10 years of production, shale gas in the United States cannot be considered commercially viable, according to several scientists presenting at the Geological Society of America meeting in Denver on Monday. They argue that while the use of hydraulic fracturing and horizontal drilling for "tight oil" is an important contributor to U.S. energy supply, it is not going to result in long-term sustainable production or allow the U.S. to become a net oil exporter.

Charles A.S. Hall, professor emeritus at the College of Environmental Science and Forestry, State University of New York, Syracuse, is an expert on how much energy it takes to extract energy, and therefore which natural resources offer the best energy return on investment (EROI). He will describe two studies: one of the global patterns of fossil-fuel production in the past decade, and the other of oil production patterns from the Bakken Field (the giant expanse of oil-bearing shale rock underneath North Dakota and Montana that is being produced using hydraulic fracturing).

Both studies show that despite a tripling of prices and of expenditures for oil exploration and development, the production of nearly all countries has been stagnant at best and more commonly is declining -- and that prices do not allow for any growth in most economies.

"The many trends of declining EROIs suggest that depletion and increased exploitation rates are trumping new technological developments," Hall said.

J. David Hughes, president of the Canadian firm Global Sustainability Research Inc., echoes Hall with an analysis of the Bakken Field and the Eagle Ford Field of Texas, which together comprise more than half of U.S. tight oil production. It shows that drilling must continue at high levels, to overcome field decline rates of 40 percent per year.

Drilling rates of more than 3,000 wells annually in the Eagle Ford, and more than 1,800 wells annually in the Bakken, are sufficient to offset field decline and grow production -- for now. If drilling at these high rates is maintained, production will continue to grow in both fields for a few more years until field decline balances new production. At that point

drilling rates will have to increase as "sweet spots" (relatively small high-productivity portions of the total play area) are exhausted and drilling moves into lower-productivity regions, in order to further grow or even maintain production.

The onset of production decline will likely begin before the end of the decade, Hughes said. "These sweet spots yield the high early production observed in these plays, but the steep decline rates inevitably take their toll."

Arthur E. Berman, a geological consultant for Labyrinth Consulting Services, Inc., of Sugar Land, Texas, deems the U.S. 10-year history of shale-gas extraction "a commercial failure." However, he says, this will not be the case forever. "Prices will increase to, at least, meet the marginal cost of production. More responsible companies will dominate and prosper as the U.S. gas market re-balances and weaker players disappear."

Hughes sums up: "Tight oil is an important contributor to the U.S. energy supply, but its long-term sustainability is questionable. It should be not be viewed as a panacea for business as usual in future U.S. energy security planning."

[*ScienceDaily*. Retrieved October 30, 2013, from http://www.sciencedaily.com /releases/2013/10/131028141516.htm]

Exhibit G

http://www.resilience.org/stories/2012-10-22/gas-bubble-leaking-about-to-burst

Gas Bubble Leaking, About to Burst

by Richard Heinberg, originally published by Post Carbon Institute | Oct 22, 2012

For the past three or four years media sources in the U.S. trumpeted the "game-changing" new stream of natural gas coming from tight shale deposits produced with the technologies of horizontal drilling and hydrofracturing. So much gas surged from wells in Texas, Oklahoma, Louisiana, Arkansas, and Pennsylvania that the U.S. Department of Energy, presidential candidates, and the companies working in these plays all agreed: America can look forward to a hundred years of cheap, abundant gas!
Some environmental organizations declared this means utilities can now stop using polluting coal—and indeed coal consumption has plummeted as power plants switch to cheaper gas. Energy pundits even promised that Americans will soon be running their cars and trucks on natural gas, and the U.S. will be exporting the fuel to Europe via LNG tankers.

Early on in the fracking boom, oil and gas geologist Art Berman began sounding an alarm (see example). Soon geologist David Hughes joined him, authoring an extensive critical report for Post Carbon Institute ("Will Natural Gas Fuel America in the 21st Century?"), whose Foreword I was happy to contribute.

Here, one more time, is the contrarian story Berman and Hughes have been telling: The glut of recent gas production was initially driven not by new technologies or discoveries, but by high prices. In the years from 2005 through 2008, as conventional gas supplies dried up due to depletion, prices for natural gas soared to $13 per million BTU (prices had been in $2 range during the 1990s). It was these high prices that provided an incentive for using expensive technology to drill problematic reservoirs. Companies flocked to the Haynesville shale formation in Texas, bought up mineral rights, and drilled thousands of wells in short order. High per-well decline rates and high production costs were hidden behind a torrent of production—and hype. With new supplies coming on line quickly, gas prices fell below $3 MBTU, less than the actual cost of production in most cases. From this point on, gas producers had to attract ever more investment capital in order to maintain their cash flow. It was, in effect, a Ponzi scheme.

In those early days almost no one wanted to hear about problems with the shale gas boom—the need for enormous amounts of water for fracking, the high climate impacts from fugitive methane, the threats to groundwater from bad well casings or leaking containment ponds, as well as the unrealistic supply and price forecasts being issued by the industry. I recall attempting to describe the situation at the 2010 Aspen Environment Forum, in a session on the future of natural gas. I might as well have been claiming that Martians speak to me via my tooth fillings. After all,

the Authorities were all in agreement: The game has changed! Natural gas will be cheap and abundant from now on! Gas is better than coal! End of story!

These truisms were echoed in numberless press articles—none more emblematic than Clifford Krauss's New York Times piece, "There Will Be Fuel," published November 16, 2010.

Now Krauss and the Times are singing a somewhat different tune. "After the Boom in Natural Gas," co-authored with Eric Lipton and published October 21, notes that ". . . the gas rush has . . . been a money loser so far for many of the gas exploration companies and their tens of thousands of investors." Krauss and Lipton go on to quote Rex Tillerson, CEO of ExxonMobil: "We are all losing our shirts today. . . . We're making no money. It's all in the red." It seems gas producers drilled too many wells too quickly, causing gas prices to fall below the actual cost of production. Sound familiar?

The obvious implication is that one way or another the market will balance itself out. Drilling and production will decline (drilling rates have already started doing so) and prices will rise until production is once again profitable. So we will have less gas than we currently do, and gas will be more expensive. Gosh, whoda thunk?

The current Times article doesn't drill very far into the data that make Berman and Hughes pessimistic about future unconventional gas production prospects—the high per-well decline rates, and the tendency of the drillers to go after "sweet spots" first so that future production will come from ever-lower quality sites. For recent analysis that does look beyond the cash flow problems of Chesapeake and the other frackers, see "Gas Boom Goes Bust" by Jonathan Callahan, and Gail Tverberg's latest essay, "Why Natural Gas isn't Likely to be the World's Energy Savior".

David Hughes is working on a follow-up report, due to be published in January 2013, which looks at unconventional oil and gas of all types in North America. As part of this effort, he has undertaken an exhaustive analysis of 30 different shale gas plays and 21 shale/tight oil plays—over 65,000 wells altogether. It appears that the pattern of rapid declines and the over-stated ability of shale to radically grow production is true across the U.S., for both gas and oil. In the effort to maintain and grow oil and gas supply, Americans will effectively be chained to drilling rigs to offset production declines and meet demand growth, and will have to endure collateral environmental impacts of escalating drilling and fracking.

No, shale gas won't entirely go away anytime soon. But expectations of continuing low prices (which drive business plans in the power generation industry and climate strategies in mainstream environmental organizations) are about to be dashed. And notions that the U.S. will

become a major gas exporter, or that we will convert millions of cars and trucks to run on gas, now ring hollow.

One matter remains unclear: what's the energy return on the energy invested (EROEI) in producing "fracked" shale gas? There's still no reliable study. If the figure turns out to be anything like that of tight "fracked" oil from the North Dakota Bakken (6:1 or less, according to one estimate), then shale gas production will continue only as long as it can be subsidized by higher-EROEI conventional gas and oil.

In any case, it's already plain that the "resource pessimists" have once again gotten the big picture just about right. And once again we suffer the curse of Cassandra—though we're correct, no one listens. I keep hoping that if we're right often enough the curse will lift. We'll see.

Exhibit H

Jordan Cove LNG Tanker Hazard Zones (FEIS Page 4.7-3)

No one is expected to survive in Zone 1 (yellow) - Structures will self ignite in this zone just from the heat. People in Zone 2 (green) will be at risk of receiving 2nd degree burns in 30 seconds on exposed skin. People in Zone 3 are still at risk of burns if they don't seek shelter but exposure time is longer than in Zone 2. Map does not include the hazard zones for the South Dunes Power Plant.

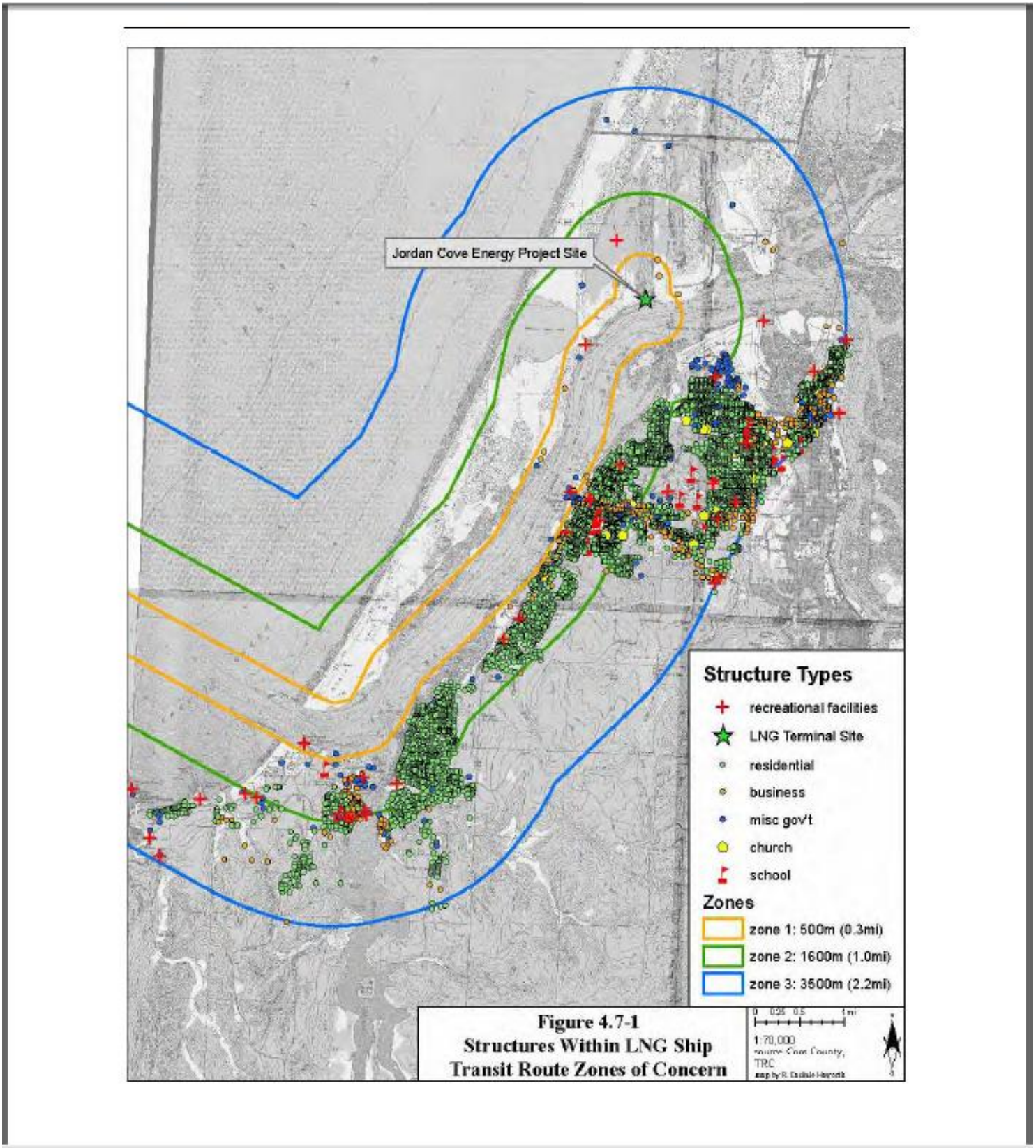


Exhibit I

Fracking by the Numbers

Key Impacts of Dirty Drilling at the State and National Level

Written by:

Elizabeth Ridlington
Frontier Group

John Rumpler
Environment America Research & Policy Center

October 2013

Acknowledgments

Environment America Research & Policy Center sincerely thanks John Amos of SkyTruth, Anthony Ingraffea, Ph.D., P.E., and Kari Matsko, Director of People's Oil & Gas Collaborative-Ohio for their review of drafts of this document, as well as their insights and suggestions. Tareq Alani, Spencer Alt, Elise Sullivan and Anna Vanderspek provided valuable research assistance. Thanks also to Travis Madsen of Frontier Group for technical assistance, and Tony Dutzik and Benjamin Davis of Frontier Group for editorial help.

We also are grateful to the many state agency staff who answered our numerous questions and requests for data. Many of them are listed by name in the methodology.

Environment America Research & Policy Center thanks the V. Kann Rasmussen Foundation and the Park Foundation for making this report possible.

The authors bear responsibility for any factual errors. The recommendations are those of Environment America Research & Policy Center. The views expressed in this report are those of the authors and do not necessarily reflect the views of our funders or those who provided review.

Environment America Research & Policy Center is a 501(c)(3) organization. We are dedicated to protecting our air, water and open spaces. We investigate problems, craft solutions, educate the public and decision-makers, and help the public make their voices heard in local, state and national debates over the quality of our environment and our lives. For more information about Environment America Research & Policy Center or for additional copies of this report, please visit www.environmentamericacenter.org.

Frontier Group conducts independent research and policy analysis to support a cleaner, healthier and more democratic society. Our mission is to inject accurate information and compelling ideas into public policy debates at the local, state and federal levels. For more information about Frontier Group, please visit www.frontiergroup.org.

Layout: To the Point Publications, www.tothepointpublications.com

Cover photo: Peter Aengst via SkyTruth/EcoFlight

Executive Summary

Over the past decade, the oil and gas industry has fused two technologies—hydraulic fracturing and horizontal drilling—in a highly polluting effort to unlock oil and gas in underground rock formations across the United States.

As fracking expands rapidly across the country, there are a growing number of documented cases of drinking water contamination and illness among nearby residents. Yet it has often been difficult for the public to grasp the scale and scope of these and other fracking threats. Fracking is already underway in 17 states, with more than 80,000 wells drilled or permitted since 2005. Moreover, the oil and gas industry is aggressively seeking to expand fracking to new states—from New York to California to North Carolina—and to areas that provide drinking water to millions of Americans.

This report seeks to quantify some of the key impacts of fracking to date—including the production of toxic wastewater, water use, chemicals use, air pollution, land damage and global warming emissions.

To protect our states and our children, states should halt fracking.

Toxic wastewater: Fracking produces enormous volumes of toxic wastewater—often containing cancer-causing and even radioactive material. Once brought to the surface, this toxic waste poses hazards for drinking water, air quality and public safety:

- Fracking wells nationwide produced an estimated 280 billion gallons of wastewater in 2012.
- This toxic wastewater often contains cancer-causing and even radioactive materials, and has contaminated drinking water sources from Pennsylvania to New Mexico.
- Scientists have linked underground injection of wastewater to earthquakes.
- In New Mexico alone, waste pits from all oil and gas drilling have contaminated groundwater on more than 400 occasions.

Table ES-1. National Environmental and Public Health Impacts of Fracking

Fracking Wells since 2005	82,000
Toxic Wastewater Produced in 2012 (billion gallons)	280
Water Used since 2005 (billion gallons)	250
Chemicals Used since 2005 (billion gallons)	2
Air Pollution in One Year (tons)	450,000
Global Warming Pollution since 2005 (million metric tons CO_2-equivalent)	100
Land Directly Damaged since 2005 (acres)	360,000

Water use: Fracking requires huge volumes of water for each well.

- Fracking operations have used at least 250 billion gallons of water since 2005. (See Table ES-2.)
- While most industrial uses of water return it to the water cycle for further use, fracking converts clean water into toxic wastewater, much of which must then be permanently disposed of, taking billions of gallons out of the water supply annually.
- Farmers are particularly impacted by fracking water use as they compete with the deep-pocketed oil and gas industry for water, especially in drought-stricken regions of the country.

Chemical use: Fracking uses a wide range of chemicals, many of them toxic.

- Operators have hauled more than 2 billion gallons of chemicals to thousands of fracking sites around the country.
- In addition to other health threats, many of these chemicals have the potential to cause cancer.
- These toxics can enter drinking water supplies from leaks and spills, through well blowouts, and through the failure of disposal wells receiving fracking wastewater.

Table ES-2. Water Used for Fracking, Selected States

State	Total Water Used since 2005 (billion gallons)
Arkansas	26
Colorado	26
New Mexico	1.3
North Dakota	12
Ohio	1.4
Pennsylvania	30
Texas	110
West Virginia	17

Air pollution: Fracking-related activities release thousands of tons of health-threatening air pollution.

- Nationally, fracking released 450,000 tons of pollutants into the air that can have immediate health impacts.
- Air pollution from fracking contributes to the formation of ozone "smog," which reduces lung function among healthy people, triggers asthma attacks, and has been linked to increases in school absences, hospital visits and premature death. Other air pollutants from fracking and the fossil-fuel-fired machinery used in fracking have been linked to cancer and other serious health effects.

Global warming pollution: Fracking produces significant volumes of global warming pollution.

- Methane, which is a global warming pollutant 25 times more powerful than carbon dioxide, is released at multiple steps during fracking, including during hydraulic fracturing and well completion, and in the processing and transport of gas to end users.
- Global warming emissions from completion of fracking wells since 2005 total an estimated 100 million metric tons of carbon dioxide equivalent.

Damage to our natural heritage: Well pads, new access roads, pipelines and other infrastructure turn forests and rural landscapes into industrial zones.

- Infrastructure to support fracking has damaged 360,000 acres of land for drilling sites, roads and pipelines since 2005.
- Forests and farmland have been replaced by well pads, roads, pipelines and other gas infrastructure, resulting in the loss of wildlife habitat and fragmentation of remaining wild areas.

- In Colorado, fracking has already damaged 57,000 acres of land, equal to one-third of the acreage in the state's park system.
- The oil and gas industry is seeking to bring fracking into our national forests, around several of our national parks, and in watersheds that supply drinking water to millions of Americans.

Fracking has additional impacts not quantified here—including contamination of residential water wells by fracking fluids and methane leaks; vehicle and workplace accidents, earthquakes and other public safety risks; and economic and social damage including ruined roads and damage to nearby farms.

Defining "Fracking"

In this report, when we refer to the impacts of "fracking," we include impacts resulting from all of the activities needed to bring a shale gas or oil well into production using high-volume hydraulic fracturing (fracturing operations that use at least 100,000 gallons of water), to operate that well, and to deliver the gas or oil produced from that well to market. The oil and gas industry often uses a more restrictive definition of "fracking" that includes only the actual moment in the extraction process when rock is fractured—a definition that obscures the broad changes to environmental, health and community conditions that result from the use of fracking in oil and gas extraction.

To address the environmental and public health threats from fracking across the nation:

- States should prohibit fracking. Given the scale and severity of fracking's myriad impacts, constructing a regulatory regime sufficient to protect the environment and public health from dirty drilling—much less enforcing such safeguards at more than 80,000 wells, plus processing and waste disposal sites across the country—seems implausible. In states where fracking is already underway, an immediate moratorium is in order. In all other states, banning fracking is the prudent and necessary course to protect the environment and public health.
- Given the drilling damage that state officials have allowed fracking to incur thus far, at a minimum, federal policymakers must step in and close the loopholes exempting fracking from key provisions of our nation's environmental laws.
- Federal officials should also protect America's natural heritage by keeping fracking away from our national parks, national forests, and sources of drinking water for millions of Americans.
- To ensure that the oil and gas industry—rather than taxpayers, communities or families—pays the costs of fracking damage, policymakers should require robust financial assurance from fracking operators at every well site.
- More complete data on fracking should be collected and made available to the public, enabling us to understand the full extent of the harm that fracking causes to our environment and health.

TRIDENT SEAFOODS CORPORATION
5303 Shilshole Ave NW, Seattle, WA 98107-4000 USA • (206) 783-3818 • Fax: (206) 782-7195
Domestic Sales: (206) 783-3474 • Fax: (206) 782-7246
Canned Sales: (206) 781-7606 • Fax: (206) 781-7604
Export Sales: (206) 783-3818 • Fax: (206) 782-7195

July 25, 2014

Greg Sanders
BOEM Pacific OCS Region
770 Paseo Camarillo, Second Floor
Camarillo, California 93010

RE: Notice of Intent to Prepare an Environmental Assessment– Docket No. BOEM–2014–0050; MMAA104000

Dear Mr. Sanders:

Thank you for the opportunity to comment on the Notice of Intent related to the proposed wind farm project off Coos Bay, Oregon. Trident Seafoods is a harvesting, processing, and marketing company. We are major participants in west coast fisheries that will be affected by the proposed action. Trident participates in the catcher-processor, shore-based, and at-sea tribal sectors of the Pacific whiting fishery. Trident is also a participant in shore-based west coast groundfish fisheries, with vessels and processing facilities engaged in several fisheries. Trident is a member of the Pacific Whiting Conservation Cooperative (PWCC) and the West Coast Seafood Processors Association (WCSPA).

Trident agrees with the PWCC and WCSPA that significant impacts will befall west coast fisheries because of the wind float project. The best fishing grounds of Coos Bay will be impacted by the project. These impacts will be exacerbated by the cumulative impacts of the associated the Jordan Cove Energy Project and future projects related to pilot wind farm project. Therefore, it is incumbent upon the US Bureau of Energy Management (BOEM) to conduct an Environmental Impact Statement (EIS) to thoroughly analyze current and future economic and environmental impacts.

Trident has participated in west coast domestic fisheries since their inception. Our fleet of catcher processor vessels and our shore based fishing and processing operations employ hundreds of people over the course of the year. The livelihoods of our employees and the success of our company will be significantly impacted by the proposed wind farm (in specific) and offshore energy development (in general). The current and future cumulative impacts of these projects must be analyzed in an EIS. Trident thinks it is inappropriate to analyze the effects of the proposed wind farm in an Environmental Assessment and in isolation from future offshore energy development directly related to the information provided by the pilot program.

Furthermore, Trident recommends BOEM's analysis of this project include alternative wind farm sites. The Principle Power proposal states that other suitable sites are available. It is clear that the Coos Bay site will negatively impact long-standing, well-managed west coast fisheries. Therefore, before proceeding, BOEM should consider and analyze the potential costs and benefits of other wind farm sites. An EA is inadequate for this task and an EIS is required to fully consider and analyze the direct, indirect, and cumulative economic and environmental effects of this project.

In summary, Trident requests that BOEM conduct an EIS to analyze the significant impacts that will occur because of the proposed wind farm. Moreover, we urge BOEM to consider alternative sites that will not have detrimental effects on our company, our employees, and the west coast fisheries.

Sincerely,

Joseph T. Plesha
Chief Legal Officer

West Coast Seafood Processors Association
1618 SW 1st Avenue, Suite 318
Portland, OR 97201
503-227-5076

July 25, 2014

To: Greg Sanders, Bureau of Ocean Energy Management, Pacific OCS Region, 770 Paseo Camarillo, 2nd Floor, Camarillo, CA 93010

RE: Preparation of EA for WindFloat project/Docket No. BOEM-2014-0050

Dear Mr. Sanders:

The following comments are submitted on behalf of the West Coast Seafood Processors Association (WCSPA) regarding the preparation of an environmental assessment (EA) for the Principle Power, Inc., WindFloat project off of Coos Bay, Ore. WCSPA represents shore-based seafood processors, harvesters, and associated businesses in Washington, Oregon and California whose members could be affected by the proposed development.

While representatives from WCSPA have been engaged in stakeholder involvement meetings, we remain concerned about the cumulative effects of OCS renewable energy development and expansion of projects without adequate consultation. We believe it is BOEM's responsibility – not just the responsibility of the developer – to consult with potential existing users of an area *prior* to allowing a lease application to move forward. In this case, Principle Power did the best it could to consult with potential affected users. However, that responsibility should fall to BOEM, who should initiate and maintain a cooperative consultative process between the government, developers and stakeholders.

The WCSPA would like to reiterate our comments from October 2013, summarized here:

1) That BOEM and Principle Power (and now, Deepwater Wind as well) consult with the Pacific Fishery Management Council (PFMC) and the Sustainable Fisheries Division of the National Marine Fisheries Service (NMFS) West Coast Region to discuss potential effects on fisheries;

2) That if plans for the Jordan Cove LNG plant construction fall through, the lease request be terminated and a new lease request made;

3) That the lease be rescinded if Principle Power is unable to obtain outside funding (or, in this case, if Deepwater Wind withdraws its support from the WindFloat project);

4) That fishermen retain access to areas of the lease blocks unused by Principle Power/Deepwater Wind.

While WCSPA remains concerned about the cumulative effects of this project in relation to other potential projects in Oregon, we were very surprised to find out BOEM was considering an environmental assessment (EA) to satisfy compliance with the National Environmental Policy Act. The Federal Register notice of May 29, 2014, says that, "If at any time during the preparation of the EA we determine that an environmental impact statement (EIS) is needed, we will issue a Notice of Intent to prepare an EIS in the Federal Register."

We understand that completing an EA would be much easier than completing an EIS, but it seems that a project of this kind would require so much analysis – including several analyses the seafood industry and state and federal agencies insist be done – that an EIS would be the default analysis. Projected impacts on the marine environment, benthic habitat, marine mammals, fish and shellfish and existing users would require greater consideration than, for example, a simple search of current published research relating to situations similar to the WindFloat project. WCSPA requests a full EIS be done to ensure impacts are adequately analyzed.

Furthermore, WCSPA requests that as a condition of a lease approval, any equipment or gear left in the ocean by Principle Power/Deepwater Wind for earlier research be completely removed. In this case, the railroad wheels used to anchor the current meter have been left in the ocean after the current meter and related instrumentation broke free. These kinds of objects on the ocean floor can be hazardous to commercial fishing operations.

We appreciate the opportunity to comment.

Sincerely,

Susan Chambers
Deputy Director
West Coast Seafood Processors Association
T: 503/227-5076
E-mail: pelagics1618@gmail.com

Arctic Storm Management Group
2727 Alaskan Way, Pier 69
Seattle, WA 98121
206-547-6557

Mr. Greg Sanders
Office of the Environment
Bureau of Ocean Energy Management, Pacific OCS Region
770 Paseo Camarillo, Second Floor
Camarillo, CA 93010

July 27, 2014

Re: Notice of Intent - Docket No: BOEM-2014-0050

Dear Mr. Sanders,

Arctic Storm Management Group is responding to the request for public comment on BOEM's Notice of Intent for an offshore OCS lease application/proposal submitted to BOEM by Principle Power, Inc. to acquire a commercial wind energy lease for a wind farm development off the coast from Coos Bay, Oregon. We ask that reconsideration be given to the location of the wind farm which, as proposed, would displace valuable whiting fishing grounds, and that a full Environmental Impact Statement be prepared.

Arctic Storm Management Group (ASMG) owns and operates four vessels that operate in the West Coast whiting fishery including two, large Mothership processing vessel. Our vessels are home-ported in Seattle, WA. We employ approximately 400 crew members annually. If the proposed wind energy lease site location is approved, the West Coast whiting fishery and our vessels could be negatively impacted by displacement to less productive fishing grounds or to areas where rockfish bycatch is higher.

We recommend that two things occur before further consideration is given to this offshore lease proposal. First, outreach to stakeholders concerning this proposal has been poor. We recommend that further scoping be initiated as part of an EIS process. Secondly, we request that BOEM in their development of an adequate range of alternatives, increase the proposed number of alternatives from the existing two alternatives to include a third alternative that provides another possible site location that does not harm the Whiting trawl fleet. It is imperative that representatives of wind energy companies and BOEM consult with representatives of the fishing industry who are dependant on the waters of any proposed energy lease site for their livelihood. Negative impacts to the current

users of such a site can be mitigated or reduced significantly if the location of the offshore energy lease site is selected with input from all users of the marine resource off the coast of Coos Bay. Participants in the whiting fishery have sophisticated tracking technology that would allow identification of areas that do not conflict with location of our traditional fishing grounds. In exploring new alternative sites in partnership with the fishing industry, we can find a more suitable location for a new wind farm lease site.

Finally, we believe BOEM's initial decision to conduct an EA rather than an EIS is in error. The National Environmental Protection Act (NEPA) requires a Finding of No Significant Impact (FONSI) determination. In our opinion, the impacts are significant as well as controversial which, under NEPA, require an EIS process. The public and the marine environment will be better served if BOEM conducts an EIS rather than and EA at this time. Negative financial consequences to the whiting fishery participants and coastal communities could be significant. Environmental impacts to both marine and seabird populations are not understood and a thorough investigation into the possible impacts conducted prior to issuance of any permits is not only prudent but also required by federal law.

In summary, BOEM should not grant the offshore lease to Principal Power until the company and BOEM have engaged and consulted with representatives of the Whiting fishery as part of an EIS process. The location of the site needs to be reconsidered so it does not negatively impact the historical users that are dependant on the fishery resources that reside within this offshore area.

Thank you for the opportunity of provide comment and for considering our requests. We look forward to working with BOEM on the selection of a proposed site that works for everyone.

Sincerely,

Donna Parker
Director of Government Relations

College of Earth, Ocean, and Atmospheric Sciences
Oregon State University, 104 CEOAS Administration Building, Corvallis, Oregon 97331-5503
T 541-737-3504 | **F** 541-737-2064 | http://www.coas.oregonstate.edu

July 27, 2014
Bureau of Ocean Energy Management
Pacific OCS Region
Attn: Greg Sanders, Office of Environment
770 Paseo Camarillo, 2nd Floor
Camarillo, California 93010

Subject: Comment on Notice of Intent To Prepare an Environmental Assessment for Proposed Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf (OCS) Offshore Oregon and Notice of Public Scoping Meetings (BOEM-2014-0050)

I anticipate that installation of wind turbines in the proposed location offshore of Coos Bay, Oregon, will produce interference with a radar-based oceanographic measurement system for ocean surface current mapping, which has been in operation in this region for more than a decade. This system is used for environmental monitoring and prediction by my own science group, by other ocean scientists, and by numerous government agencies with varying missions. The space-time resolution provided by this system is unique among ocean measurements. Interference will therefore impact environmental study, monitoring and understanding, as well as "other human uses in the vicinity of the proposed project".

Existing System: Nearly every application of ocean monitoring requires, to some extent, measurements of surface current velocities. For more than a decade, my Ocean Currents Mapping Lab at Oregon State University has operated an array of long-range HF radars near Coos Bay (and, in fact, along the entire Oregon coast). We use these land-based, seaward-looking radars to measure hourly maps of surface currents on the ocean, round the clock, in all seasons, from near the coast to offshore more than 100 miles, along the entire Oregon coast. Daily averages of these maps are made available freely to the public on http://bragg.coas.oregonstate.edu and http://nvs.nanoos.org. Since 2006, this system has been part of the national HF radar network, providing ocean surface current mapping from more than 130 stations around the US (http://www.ioos.noaa.gov/hfradar). This national system was used to predict trajectories during Deepwater Horizon.

These maps are available for mariners wanting to know about strong currents for their safe and efficient navigation, for responders tracking pollution, harmful algal blooms, marine debris. They are used by the US Coast Guard to improve search and rescue in man-overboard situations. They are incorporated into ocean forecasts by several branches of NOAA, including COOPS (Center for Operational Ocean Products and Services), ORR (Office of Response and Restoration). They are available to the National Weather Service via GTS and, this fall, will be available to forecasters through AWIPS. They are used by the NOAA PORTS system for tides. BOEM itself has encouraged and funded the use of these systems in its regions of interest for environmental assessment studies, including Alaska in Prince William Sound and over

the North Slope. They are used in numerous scientific studies of tides, wind-driven currents (upwelling/downwelling), seasonal current shifts, El Niño/La Niña, and year-to-year variability. In the Pacific Northwest, this system represents an investment of millions of taxpayer dollars, and effort by scientists over a long period. Operations and maintenance funding is provided by NOAA's IOOS (Integrated Ocean Observing System) program.

Anticipated Impact of Wind Turbines as proposed

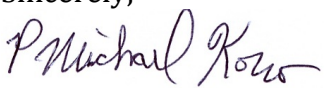
The severe interference with radars produced by wind turbines is well documented. On land, wind farms produce radar returns which mimic storms (Brenner et al, 2008, "Wind farms and radar", JASON Program Office). Over the ocean, recent measurements off the United Kingdom (Wyatt, et al., 2011. Oceans 2011, doi://10.1109/Oceans-Spain.2011.6003418) show severe interference in HF radar mapping returns which arose when a wind farm was installed offshore. If such effects are unable to be mitigated, they can produce erroneous estimates of the currents, certainly at the location of the wind farm, but also quite likely over a much larger area, such as a swath at constant range from the site. This would degrade the value of such measurements for current prediction, environmental monitoring, search and rescue, and all of the other benefits provided. Details of these impacts were included in a previous public comment from me dated Oct 24, 2013.

Recommendation

The benefits of ocean current mapping for the nation, for environmental monitoring, for human health through tracking of HABS, oil, and other spills, for safety of life at sea, for efficient navigation, and for expanding our scientific understanding of the coastal ocean, are extensive but vulnerable to a large-scale deployment of this technology without first developing a mitigation strategy which can be proven to be successful.

An assessment of the impacts of the PPI wind turbines, of the kind proposed, upon operation of the HF network along the Oregon coast should be an essential part of any Environmental Assessment. This assessment must include (1) measurements from a long-range CODAR SeaSonde at the same approximate range (16 nautical miles) as the proposed installation, (2) assessment of spurious signals introduced and (3) development of a proven mitigation strategy that allows the turbine to operate without major interference to the HF mapping system. Such a test might be conducted on the existing Principle Power installation near Porto, Portugal, if funds were made available on a short time scale. Absent such an assessment and mitigation, the recommendation should be for no action on the proposal by Principle Power Inc.

Sincerely,



P. Michael Kosro, Professor of Oceanography
College of Earth, Ocean, and Atmospheric Sciences
Oregon State University, 104 CEOAS Admin. Bldg.
Corvallis, OR 97331-5503
Phone: 541-737-3079
Email: kosro@coas.oregonstate.edu

PUBLIC SUBMISSION

As of: 7/30/14 7:16 PM
Received: July 28, 2014
Status: Posted
Posted: July 30, 2014
Tracking No. 1jy-8dh9-2pxu
Comments Due: July 28, 2014
Submission Type: Web

Docket: BOEM-2014-0050
Notice of Intent to Prepare an Environmental Assessment for Proposed Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf (OCS) Offshore Oregon and Notice of Public Scoping Meetings

Comment On: BOEM-2014-0050-0001
Environmental Assessments; Availability, etc.: Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf Offshore Oregon; Public Scoping Meetings

Document: BOEM-2014-0050-0026
Comment from J. Christopher Garbrick, NA

Submitter Information

Name: J. Christopher Garbrick
Address:
4225 23rd Avenue West, #102
Seattle, WA, 98199
Email: chris@greatwestseafoods.com
Organization: NA

General Comment

Dear Mr. Sanders:

I object to the proposed lease site, which conflicts with my traditional Pacific whiting fishing grounds. The applicant failed to consider how my legitimate commercial interests in the proposed lease area would be affected, never consulted with the Pacific whiting fishery before submitting the application, and did not try to find a more compatible location. BOEM should conduct a full Environmental Impact Statement to be sure that impacts to my fishing operation are fully analyzed. Thank you for considering these comments.

Regards,

J. Christopher Garbrick
President, Mark I, Inc.

Oregon
John A. Kitzhaber, MD, Governor

Department of Fish and Wildlife
Marine Resources Program
2040 SE Marine Science Drive
Newport, OR 97365
(541) 867-4741
Fax: (541) 867-0311
www.dfw.state.or.us

July 28, 2014

Via Electronic Mail

Mr. Greg Sanders
Bureau of Ocean Energy Management
Pacific OCS Region
770 Paseo Camarillo
Camarillo, CA 93010
greg.sanders@boem.gov

RE: Docket No. BOEM-2014-0050; MMAA104000
Notice of Intent to Prepare an Environmental Assessment
Potential Commercial Leasing for Wind Power, Offshore Coos County, Oregon

Dear Mr. Sanders,

Thank you for the opportunity to provide comment with regards to the May 14, 2013 Bureau of Ocean Energy Management (BOEM) Lease Application filed by Principle Power Inc. (applicant) for the WindFloat Pacific Pilot Project (project). These comments are designed to provide input regarding important environmental issues that should be addressed in the Environmental Assessment (EA), as solicited by the BOEM Notice of Intent to Prepare an Environmental Assessment published on May 29, 2014. The Oregon Department of Fish and Wildlife (ODFW) is the state agency with management jurisdiction over Oregon's fish and wildlife resources pursuant to Oregon Revised Statutes (ORS) and Oregon Administrative Rules (OAR) including:

- Wildlife Policy (ORS 496.012)
- Food Fish Management Policy (ORS 506.109)
- Threatened and Endangered Wildlife Species (ORS 496.171 through 496.182)
- Oregon Plan for Salmon and Watersheds (ORS 541.405)
- Native Fish Conservation Policy (OAR 635-007-0502 through 0509)
- Fish and Wildlife Habitat Mitigation Policy (OAR 635-415-0000 through 0030)
- Wildlife Diversity Plan (OAR 635-100-0001 through 0030)

As described in the BOEM Notice of Intent, the project proposal is to install a floating wind energy demonstration facility approximately 16 nautical miles from shore in water depths of approximately 1,400 feet. The area being considered in the EA encompasses 15 square miles; however the lease will include only a portion of that area. As described in the Lease Application, the project will consist of five floating turbines secured to the seafloor with multiple mooring lines and vertical load anchors, and arranged in an array

spanning 4 to 8 square miles. The array will connect to the onshore grid via a subsea transmission cable to be installed along the ocean floor before it crosses the North Spit and terminates at a power substation. ODFW understands that the applicant is seeking authorization of a 25-year-long lease (anticipated 2017-2042) for a demonstration project limited to the 5-turbine-array, associated moorings, and cable described above. As described in the Lease Application, Principle Power is not, and does not intend to be a project owner, and as such future commercial development would be the subject of a separate lease application submitted by a separate developer. ODFW has a direct interest in the proposed action because the project has the potential to affect fish and wildlife resources, habitat, and fisheries that are within ODFW's statutory purview. Concerns include:

Avian species: The EA should thoroughly document avian species (i.e., bird and bat) use of the project area throughout all seasons prior to deployment to facilitate post-installation assessment of impacts such as collision with turbine blades or other project structures, changes in behavior due to project lighting, or altered migration. ODFW recommends that the applicant conduct a risk assessment of the potential repercussions of the project to avian species. The risk assessment should be reviewed by the United States Fish and Wildlife Service (USFWS) and ODFW, and then used to inform future study of the resource conflict. The risk assessment should be based on the best available science, which could include relevant management or monitoring protocols, and should include an evaluation of:

- Avian species known or potentially present, species diversity and abundance in different seasons (i.e., existing populations)
- Potential changes in seabird behavior (e.g., foraging, nesting, care of young)
- Avian species use of, and response to, project structures (e.g., avoidance, collision, perching)
- Effectiveness of bat and seabird detection equipment
- Shoreline cable crossing plans, potential impacts on western snowy plover or its habitat, and methods designed to avoid impacts on the species or the significant production area present on the North Spit

Marine mammals: The EA should thoroughly document cetacean use of the project area throughout all seasons prior to deployment to facilitate post-installation assessment of impacts such as altered migration, acoustic harassment, physical collision, or entanglement. ODFW is particularly concerned about gray whales, which are state-listed as endangered and are known to both migrate through the cable easement area and to graze on bottom sediments. ODFW strongly recommends that the EA provide analysis of the cable burial depth and extent of burial as it pertains to interactions with grazing whales. In addition, acoustic impacts from project activities could mask communications between individual cetaceans.

Fish attraction/community shift: Following project installation, the fish community at the project site would likely shift from an open water and soft-bottom sediment community to one attracted to the introduction of new structure. The EA should discuss aspects of the community that would likely be altered by the project and the applicants proposed monitoring of these affects. Monitoring of post-installation community change may include ROV survey, fish survey, or a combination of methods.

Marine species entrainment & impingement: ODFW understands that the fluctuating ballast system is a closed system, and does not pose a risk of fish entrainment or impingement. However, it is unclear whether all aspects of the device are designed in such a way to exclude entrapment or impingement of marine animals. Inlets, if proposed, should be described and associated external mesh size should be determined, if necessary.

Marine species physical harm: ODFW understands that multiple mooring cables and inter-array transmission cables will be necessary throughout the water column at the project site. Cables may present risk of physical harm to fish, mammals, sea turtles, or other marine life. The project scope should be refined to include descriptions of cables including flexibility/strength of cable materials (i.e., likelihood of cables forming loops), tension, flotation, depth in the water column, and spacing. The EA should discuss all project aspects where entanglement or other potential risk of physical harm exists, methods to avoid or minimize risk, monitoring for detection of entanglement, and emergency response procedures to address entanglement events should they occur.

Electromagnetic fields (EMF): The EA should thoroughly document natural EMF occurring along the cable route and at the project site prior to installation, and plans for monitoring after project activities are operational to detect any significant change in EMF. Changes in EMF may alter fish behavior, and the EA should discuss potential effects and methods the applicant will employ to minimize impacts.

Habitat: ODFW estimates that while the proposed project area is primarily soft-bottom habitat, there may be small areas of hard substrate that should be avoided. Hard substrate within the proposed test site and along the cable route may include rock outcrops or biogenic habitat such as deep sea corals that should be detected during pre-deployment survey and avoided during device and cable installation. According to the Lease Application, the applicant plans to conduct bathymetric surveys as part of site characterization to determine any hard-substrate areas within the proposed project area, and avoid any such areas during placement of the project anchoring system. ODFW supports this plan, as anchoring may alter existing habitat and strongly recommends that the same study, detection, and avoidance be applied to the cable route used to transmit power from the energy facility to onshore facilities. The EA should discuss pre-installation surveys conducted to identify hard-bottom habitat and discuss the applicant's intent to cable around rock and deep sea coral. The EA should include a detailed discussion of all project components and any associated impacts on habitat, including:

- Anchoring, which may convert benthic habitat type, increase risk of fishing gear entanglement, and generate acoustic events during installation, removal, and decommissioning.
- Mooring lines, which add structure to an otherwise open water column
- Cabling
- Shoreline crossing location and crossing type
- Estuarine use for final assembly, testing, launch, etc.

- Onshore development for new power substation or use of existing structures for laydown, storage, assembly, etc. According to the Lease Application, no onshore areas will be included in the request for lease; however, if a single EA is meant to describe the entire project footprint then onshore areas should be included in the analysis in order to prevent any inadvertent segmentation of project impacts under NEPA.

Estuarine impacts: ODFW understands that the project will involve device assembly and launch from Coos Bay. An estuarine activity summary should be provided and the applicant should consult with ODFW regarding potential biological or ecological estuarine impacts in order to satisfactorily address agency concerns regarding acceptable use of the estuary. The estuarine activity summary should include:

- Description, location, and timing (date and duration) of activity.
- Description of bottom habitat and methods to avoid or mitigate disturbance to bottom habitat.
- Description of sources of underwater noise and methods to avoid or mitigate acoustic impacts.
- Description of sources of contaminants (e.g. antifouling paint) and methods to avoid or mitigate impacts on water quality.

Existing Fisheries: Existing fisheries may be affected by space use conflicts, snag hazards, cabling, effects on stocks, or several other potential outcomes of the proposed project. As managers of Oregon's marine fisheries, ODFW should be consulted regarding existing fisheries in the area and recommended methods to reduce potential conflicts. The applicant should agree to discuss fishery issues and implement ODFW guidance regarding minimizing affects to fisheries. ODFW strongly recommends that the transmission cable be buried along the full extent of its length and to adequate depth to prevent conflict with fishing. In addition, it is unclear if the applicant intends to close the project area to navigation or fishing. The applicant should clarify and disclose any intent to limit or control site access, which may affect recreational and commercial fisheries under the agency's management authority. Fisheries west of Coos Bay between latitudes 43° 30' 0"N and 43° 20' 0"N are identified in Appendix A. Oregon's fisheries occur throughout the areas offshore of Coos Bay potentially affected by the cable easement and project site. Multiple fisheries targeting many different species occur year-round in this area.

In consultation with ODFW, the applicant should prepare a stakeholder notification plan including the following elements:

- identify existing use of the project area and potential conflicts.
- clarify and disclose any intent to limit or control site access.
- describe methods of physical demarcation of installed equipment, which should include corner marker buoys that delineate the project area and remain in place as long as any project component is installed.
- describe any efforts made or planned to communicate project activities with ocean users.
- Describe intent to request notice to mariners, which should be implemented on an ongoing basis throughout the project period, and should extend beyond Coos Bay to ensure maximum awareness of potential hazards.

- Describe procedures to address fishing gear dereliction on the device or other project structures. Procedures should include detection and removal of derelict gear, notification to ODFW, return of marked gear to respective owner, and recycling of any unmarked or unclaimed gear.

Proposed Monitoring: ODFW is concerned that environmental monitoring performed before installation of the project may not target the types of information needed to assess potential impacts. ODFW requests that the applicant describe any environmental or other monitoring they propose to conduct for the project. Environmental monitoring activities should include all areas affected by the project and may include surveys conducted before, during, or after the deployment period and may be designed to address:

- Acoustics, pre-installation characterization of ambient acoustics in a full range of sea states will be necessary to support post-installation monitoring.
- Fish attraction to the project structures, including attraction of elasmobranchs and other high-order predators that may be drawn to the project area, with the potential to affect special status or fishery species.
- Sediment transport, accretion, or scour.
- Changes in benthic infauna and epifauna from construction or operation of the project.
- Changes in marine habitat from construction or operation of the project, including seafloor and open water habitat.
- Electromagnetic fields (EMF), that may be emitted by project components, inter-array cables, or transmission cable connecting the site to shore.
- The applicant should identify mechanisms for preventing, cleaning, or monitoring marine growth build up (i.e. bio-fouling, algae entanglement).
- The applicant should identify mechanisms to study avian species and mammals.

Proposed Maintenance: Applicant should specify the inspection interval and type of maintenance activity, so that potential impacts can be assessed and so that recommendations for environmental monitoring can be designed with planned maintenance in mind. The applicant should disclose the frequency with which above and below surface maintenance will be performed as opportunities for monitoring may coincide with maintenance trips.

Emergency Response: ODFW is concerned that the requirements for contingency planning and emergency response for this project are inadequate to protect fish, wildlife, and habitat. To better address these concerns, ODFW recommends the following:

- Recovery protocols should be described and should explain how the applicant is prepared to address events of any project structure being off-station or needing salvage response, if necessary. Retrieval mechanisms should be designed to minimize and mitigate disturbance to marine habitat.
- Planning for extreme events should be provided to describe adequate response to extreme events including recovery of failed or failing devices or associated project components.

- Spill response

ODFW understands that BOEM intends to offer several comment periods throughout the authorization process, will consult with the Oregon Intergovernmental Renewable Energy Task Force, and will coordinate with affected state agencies prior to issuing a decision. ODFW anticipates ongoing involvement in this process and looks forward to working with BOEM and other stakeholders on future analyses. Thank you for the opportunity to communicate our interest in the project and please contact me if I can be of assistance.

Sincerely,

Delia Kelly,
Ocean Energy Coordinator,
Oregon Department of Fish and Wildlife

Cc (via electronic mail):
Ken Homolka (ODFW)
Dave Fox (ODFW)
Caren Braby (ODFW)
Jean Thurston (BOEM)

Appendix A: Fisheries west of Coos Bay between latitudes 43° 30' 0"N and 43° 20' 0"N. Data reported here are accurate for this narrow latitudinal band and not for the rest of the fishing grounds offshore of Oregon. As the table shows Oregon's fisheries occur throughout the areas offshore of Coos Bay potentially affected by the cable easement and project site. Multiple fisheries targeting many different species occur yearround in this area. Data was summarized as of July, 2014, including ODFW information and not including fisheries logbook data managed outside of ODFW [1].

Target Species	Gear Type	Min Depth (fm)	Max Depth (fm)	Temporal Range of Data	Data Source[2]
Arrowtooth Flounder	Bottom Trawl	171	252	1997 - 1998	Trawl Logbooks
Arrowtooth Flounder	Large Footrope Bottom Trawl	161	318	1999 - 2012	Trawl Logbooks
Arrowtooth Flounder	Small Footrope Bottom Trawl	41	189	2001 - 2004	Trawl Logbooks
Arrowtooth Flounder	Selective Flatfish Bottom Trawl	70	73	2005 - 2007	Trawl Logbooks
Canary Rockfish	Bottom Trawl	72	85	1996 - 1999	Trawl Logbooks
Curlfin Sole	Bottom Trawl	15	20	1997	Trawl Logbooks
Dover Sole	Bottom Trawl	11	668	1996 - 2000	Trawl Logbooks
Dover Sole	Large Footrope Bottom Trawl	50	630	1996 - 2013	Trawl Logbooks
Dover Sole	Small Footrope Bottom Trawl	67	493	1996 - 2010	Trawl Logbooks
Dover Sole	Selective Flatfish Bottom Trawl	49	225	2005 - 2012	Trawl Logbooks
Dover Sole/Thornyheads/Sablefish	Large Footrope Bottom Trawl	193	627	2008 - 2013	Trawl Logbooks
Dover Sole/Thornyheads/Sablefish	Small Footrope Bottom Trawl	192	401	2008 - 2010	Trawl Logbooks
Dungeness crab (Commercial)	Trap	1	120	2007-2012	Logbook
Dungeness crab (Recreational)	Individual Pot	Unspecified	Unspecified	NA	NA
English Sole	Bottom Trawl	20	128	1996 - 1999	Trawl Logbooks
English Sole	Small Footrope Bottom Trawl	7	112	2000 - 2003	Trawl Logbooks
English Sole	Selective Flatfish Bottom Trawl	62	74	2005 - 2007	Trawl Logbooks
Hagfish (Commercial)	Longline trap	40	300	2008-2014	Logbook
Hagfish	Fixed gear - fish Pot	61	98	2005 - 2013	Fixed Gear Logbooks
Lingcod	Bottom Trawl	66	159	1996 - 1997	Trawl Logbooks
Lingcod	Small Footrope Bottom Trawl	45	51	2003	Trawl Logbooks
Lingcod	Bottom Longline, Troll, Dinglebar	25	58	2004-2013	Nearshore Logs
Lingcod (Recreational sport)	Hook and Line	2	<50	1979-2014	ORBS, ODFW
Longspine Thornyhead	Bottom Trawl	57	940	1996 - 1999	Trawl Logbooks
Longspine Thornyhead	Large Footrope Bottom Trawl	72	632	1996 - 2008	Trawl Logbooks
Longspine Thornyhead	Small Footrope Bottom Trawl	270	630	1996 - 2003	Trawl Logbooks
Market Squid	Small Footrope Bottom Trawl	11	20	2001 - 2002	Trawl Logbooks
Nearshore Flatfish	Large Footrope Bottom Trawl	224	285	2005 - 2009	Trawl Logbooks
Nearshore Flatfish	Selective Flatfish Bottom Trawl	56	127	2008 - 2012	Trawl Logbooks
Nearshore Species Complex[4]	Jig, Bottom Longline	3	23	2004-2013	Nearshore Logs
Red sea urchin	Dive	2	15	2011/2014	Logbook
Rockfish (small)	Bottom Trawl	78	270	1996 - 1999	Trawl Logbooks
Rockfish (shelf)	Small Footrope Bottom Trawl	84	112	2003	Trawl Logbooks
Rockfish (Large)	Bottom Trawl	65	318	1996 - 1999	Trawl Logbooks
Rockfish (Large)	Small Footrope Bottom Trawl	268	272	1996	Trawl Logbooks
Rockfish (Recreational sport)	Hook and Line	2	30	1979-2014	ORBS, ODFW
Pacific Grenadier	Bottom Trawl	152	614	1996 - 1997	Trawl Logbooks
Pacific Grenadier	Large Footrope Bottom Trawl	500	586	2001 - 2006	Trawl Logbooks
Pacific halibut (Recreational sport) [1]	Longline fixed gear	1	100	2009-2014	ORBS, ODFW
Pacific Sanddab	Bottom Trawl	13	90	1997 - 1999	Trawl Logbooks
Pacific Sanddab	Small Footrope Bottom Trawl	36	75	2001 - 2004	Trawl Logbooks
Pacific Sanddab	Selective Flatfish Bottom Trawl	35	72	2005 - 2013	Trawl Logbooks
Pacific Whiting [1]	Midwater Trawl - Nearshore	10	19	1996 - 2013	Trawl Logbooks
Petrale Sole	Bottom Trawl	51	360	1996 - 1999	Trawl Logbooks
Petrale Sole	Large Footrope Bottom Trawl	78	491	2000 - 2011	Trawl Logbooks
Petrale Sole	Small Footrope Bottom Trawl	11	301	1996 - 2009	Trawl Logbooks
Petrale Sole	Selective Flatfish Bottom Trawl	11	355	2005 - 2013	Trawl Logbooks
Petrale Sole & Dover Sole	Selective Flatfish Bottom Trawl	69	367	2009 - 2011	Trawl Logbooks
Pink Shrimp	Trawl	40	150	1980-2013	Logbook
Rex Sole	Bottom Trawl	157	186	1999	Trawl Logbooks

Target Species	Gear Type	Min Depth (fm)	Max Depth (fm)	Temporal Range of Data	Data Source[2]
Rex Sole	Small Footrope Bottom Trawl	91	289	2001 - 2003	Trawl Logbooks
Sablefish	Fixed gear - bottom Longline	145	308	2005 - 2013	Fixed Gear Logbooks
Sablefish	Bottom Trawl	73	820	1996 - 1999	Trawl Logbooks
Sablefish	Large Footrope Bottom Trawl	143	638	1996 - 2013	Trawl Logbooks
Sablefish	Small Footrope Bottom Trawl	91	598	1996 - 2010	Trawl Logbooks
Sablefish	Selective Flatfish Bottom Trawl	65	309	2005 - 2009	Trawl Logbooks
Sablefish & Dover sole	Large Footrope Bottom Trawl	196	359	2009 - 2013	Trawl Logbooks
Sablefish & Dover sole	Small Footrope Bottom Trawl	185	244	2009 - 2010	Trawl Logbooks
Sablefish & Thornyheads	Large Footrope Bottom Trawl	314	621	2009 - 2013	Trawl Logbooks
Salmon (Commercial - chinook, coho, pink, chum)	Troll	4	250	1979-2014	CROOS, ODFW
Salmon (Recreational - coho)	Hook and Line	2	250	1979-2014	ORBS, ODFW
Salmon (Recreational - chinook)	Hook and Line	2	100	1979-2014	ORBS, ODFW
Sand Sole	Bottom Trawl	3	482	1996 - 1999	Trawl Logbooks
Sand Sole	Small Footrope Bottom Trawl	3	56	1997 - 2004	Trawl Logbooks
Sardine	Seine	50	70	Recent	Logbook, ODFW
Shortspine Thornyhead	Bottom Trawl	153	601	1996 - 1999	Trawl Logbooks
Shortspine Thornyhead	Large Footrope Bottom Trawl	267	598	2000 - 2008	Trawl Logbooks
Skates	Bottom Trawl	33	267	1996 - 2000	Trawl Logbooks
Skates	Large Footrope Bottom Trawl	129	303	2000 - 2008	Trawl Logbooks
Skates	Small Footrope Bottom Trawl	26	306	1997 - 2004	Trawl Logbooks
Skates	Selective Flatfish Bottom Trawl	38	116	2005 - 2012	Trawl Logbooks
Spot prawn	Pot	70	140	2000-2014	Logbook
Starry Flounder	Bottom Trawl	4	15	1997 - 1999	Trawl Logbooks
Starry Flounder	Small Footrope Bottom Trawl	9	30	1997	Trawl Logbooks
Thornyheads	Large Footrope Bottom Trawl	390	498	2009 - 2013	Trawl Logbooks
Widow Rockfish	Midwater Trawl	112	112	2000	Trawl Logbooks
Yellowtail Rockfish	Bottom Trawl	51	116	1996 - 1999	Trawl Logbooks
UNSPECIFIED TARGET	Fixed gear - fish Pot	125	125	2008	Fixed Gear Logbooks
UNSPECIFIED TARGET	Midwater Trawl	81	254	2004	Trawl Logbooks
UNSPECIFIED TARGET	Bottom Trawl	9	856	1996 - 2000	Trawl Logbooks
UNSPECIFIED TARGET	Large Footrope Bottom Trawl	3	647	2004 - 2013	Trawl Logbooks
UNSPECIFIED TARGET	Small Footrope Bottom Trawl	12	562	1996 - 2011	Trawl Logbooks
UNSPECIFIED TARGET	Selective Flatfish Bottom Trawl	11	347	2005 - 2013	Trawl Logbooks

Notes:

[1] Data not managed by ODFW is not reported in this table and should be sought from fisheries data management sources applicable to:
Highly Migratory Species (e.g., albacore tuna)
Pacific whiting - mothership catcher boat offshore fleet
Pacific halibut - commercial longline fishing occurs between 1-30fm and greater than 100 fm. Contact IPHC for logbook data.

[2] Fishery information determined by logbook entry, landed catch, or ODFW. Logbooks are records kept by vessel captains and are required for most commercial fisheries in Oregon. The Oregon Ocean Recreational Boat Survey (ORBS) monitors effort and catch in the boat-based ocean sport fisheries in Oregon. ODFW professional knowledge spans decades and is used to support data reported on fishery records.

[3] Unspecified target includes logbooks or other records that lack identification or have been merged to protect confidentiality.

[4] Nearshore Species Complex includes many rockfish, cabezon, greenling, Irish lord, sculpin, and treefish species

OREGON WILD
Formerly Oregon Natural Resources Council (ONRC)
PO Box 11648 | Eugene OR 97440 | 541-344-0675 | fax 541-343-0996
dh@oregonwild.org | http://www.oregonwild.org/

TO: Bureau of Ocean Energy Management (BOEM), US Dept of Interior
VIA: http://www.regulations.gov/#!submitComment;D=BOEM-2014-0050-0001

DATE: 28 July 2014

RE: Environmental Assessments; Availability, etc.: Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf Offshore Oregon

Please accept the following comments from Oregon Wild regarding the proposed "Environmental Assessments; Availability, etc.: Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf Offshore Oregon." http://www.regulations.gov/#!documentDetail;D=BOEM-2014-0050-0001

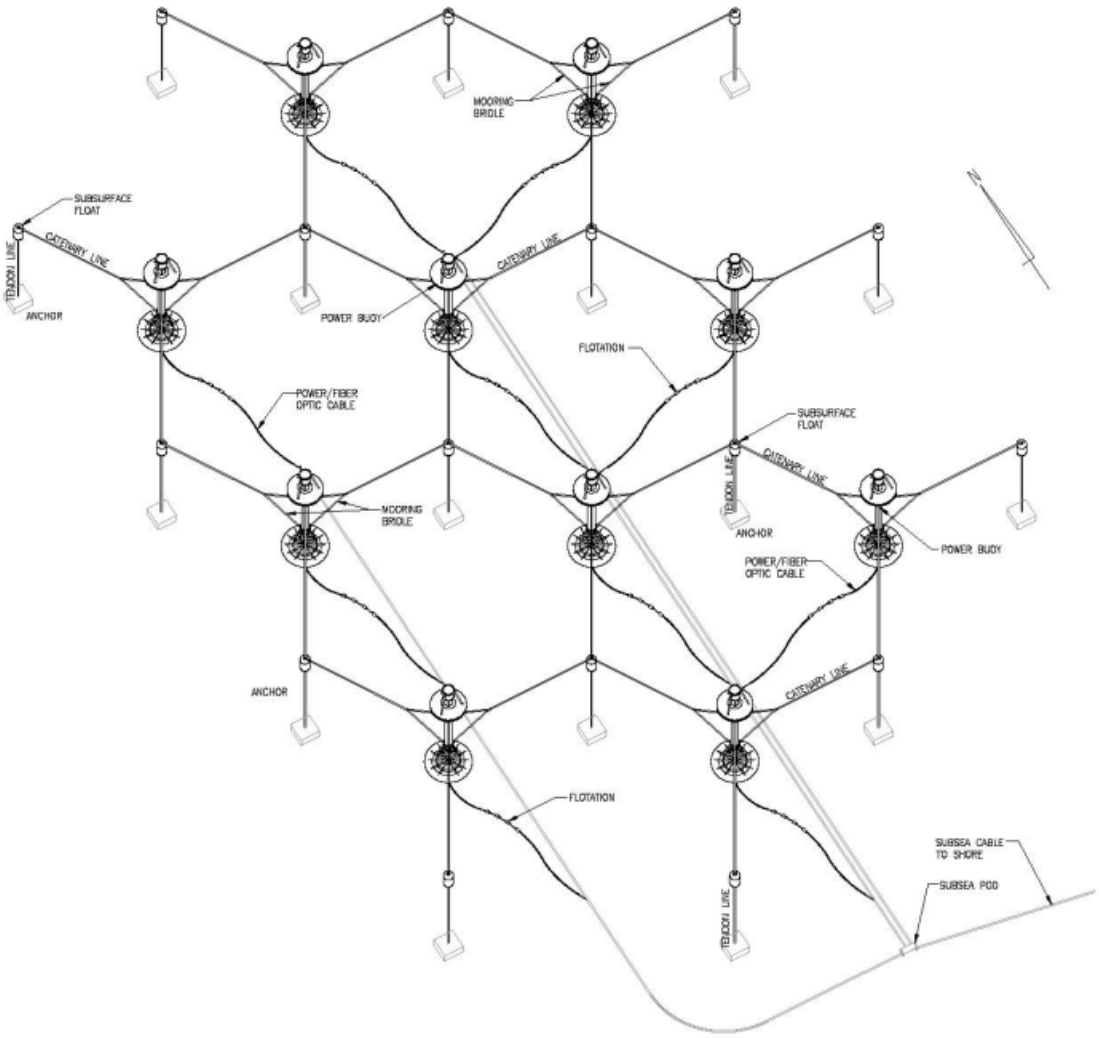
We are confused about the nature of this comment process. The title is "Environmental Assessments; Availability" but we cannot find a copy of the EA. The notice reads like a scoping notice, so we will treat it as such. Our comments previously submitted in October 2013 list most of our primary concerns. We urge that the Environmental Assessment carefully analyze all of the issues and concerns listed below.

Oregon Wild represents approximately 10,000 members and supporters who share our mission to protect and restore Oregon's wildlands, wildlife and waters as an enduring legacy. Oregon Wild is responding to the request for interested and affected parties to comment and provide information about site conditions and multiple uses within the area identified in this notice that would be relevant to the proposed project or its impacts. Many of our comments are probably relevant to the NEPA process but we want to make sure our comments and concerns are reflected in all stages of planning.

The project located approximately 16 nautical miles west of Coos Bay, Oregon is intended as a technology demonstration with five floating platforms anchored to the sea floor 1,400 feet below. Each ''WindFloat'' unit will be equipped with a wind turbine expected to generate 6–MW of electricity (30 MW project total). The units will be interconnected with electrical cabling, and a single transmission cable will extend across both Federal and state lands to export electricity to shore.

Please consider the following issues and concerns regarding the proposal for leasing public resources for this offshore wind project:

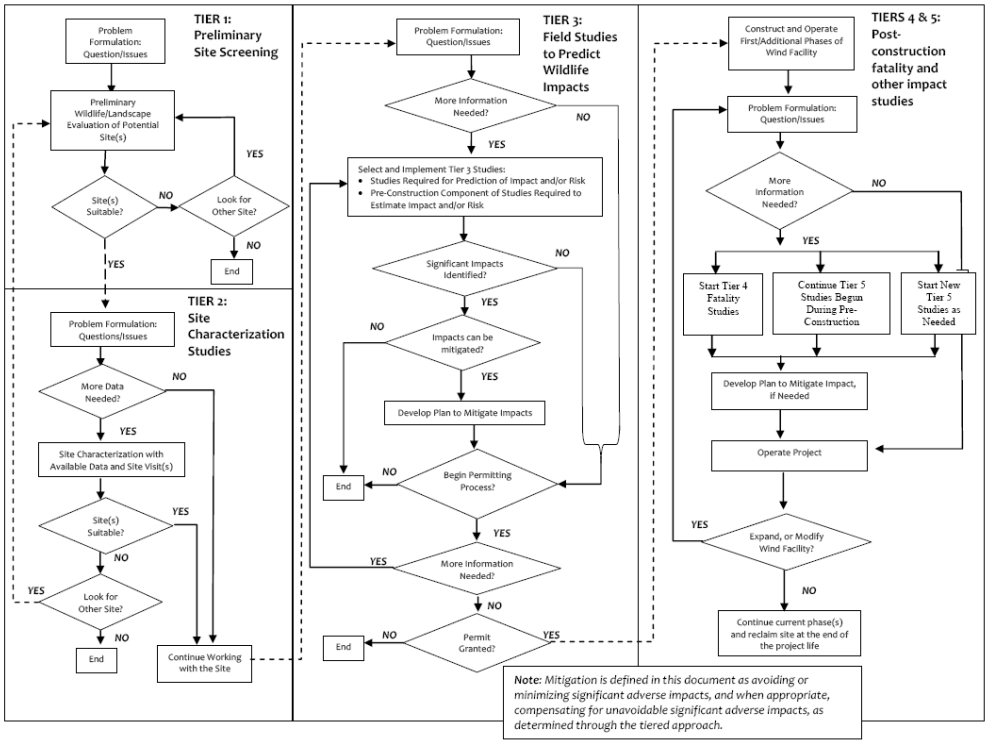
1. This project may have significant and precedential effects and therefore requires an EIS. The EA should very carefully document the factors indicating NEPA "significance."
2. We are concerned that this may not be a suitable location for wind development. It is well-established that proper siting is key to avoid and minimize impacts of wind development. In this off-shore area there are a variety of wildlife that may be impacted by energy development including: whales and other marine mammals, rockfish, tuna, sharks, salmon, sturgeon, other fish, sea turtles, storm petrels, albatross, pelican, marbled murrelet, others birds, etc... The spinning turbines above the water, and the network of anchor lines below the water present significant concerns for wildlife and require careful NEPA analysis. Electromagnetic fields and vibrations are also a concern because underwater organisms may be particularly sensitive to these.
3. The NEPA process should include long-term pre-project monitoring for fish & wildlife uses, and human uses of the affected areas.
4. Information is not yet available about the anchoring system that will be used, but we are aware of significant problems with anchoring systems for wave energy systems. Complex networks of underwater cables are necessary to spread the loads experienced by the cables. See schematic below. This presents a hazard to fish & wildlife. These same issues are likely to arise in the context of anchoring systems for offshore wind platforms.



http://hmsc.oregonstate.edu/rec/sites/default/files/lagerquist-graywhales.pdf

5. We are concerned about the direct, indirect, and cumulative effects of all aspects of the proposed project - from the offshore floating platforms and turbines, anchoring systems, undersea power cables, onshore transmission towers and lines, roads, staging areas, and other facilities.
6. Make sure that the NEPA analysis carefully documents all of the costs and environmental effects at all stages of the energy development, including decommissioning. We urge the BOEM to carefully consider ways to preferentially avoid, minimize, mitigate impacts (in that order). FWS has developed a framework to help minimize impacts from wind development. Portions of this framework may be relevant to off-shore wind energy development and should be applied and considered.

General Framework for Minimizing Impacts of Wind Development on Wildlife in the Context of the Siting and Development of Wind Energy Projects



March 4, 2010 Recommendations of the USFWS Wind Turbine Guidelines Advisory Committee. http://www.fws.gov/habitatconservation/windpower/Wind_Turbine_Guidelines_Advisory_Committee_Recommendations_Secretary.pdf.

7. We are concerned about the cumulative impacts of wind power development in and around Oregon. Oregon already has extensive wind development on the Columbia Plateau which is much more suitable for wind development, in part because it has few conflicts due to being non-forested and non-aquatic. Consider the cumulative environmental impacts of all wind energy developments in Oregon and the west. See, for instance, the projects listed here: http://web.archive.org/web/20100602230618/http://egov.oregon.gov/ENERGY/SITING/docs/Wind_Projects90526.pdf
8. The impacts of offshore wind are unique and understudied so the effects are highly uncertain. Most of the site development recommendations to avoid and minimize conflicts were designed for onshore or nearshore. Offshore wind, has not received similar scrutiny, likely not because there aren't important resources at stake, but because there have been so few proposals. We urge that an EIS be prepared to address unique and uncertain impacts.
9. Economics must also be carefully considered. The distance from shore increases the cost of installation and maintenance. It may prove difficult to maintain wind facilities in the face of damage from extreme weather events common along the Pacific Coast. Energy policy should favor least cost energy sources including onshore wind, and increasingly, solar.

10. The NEPA analysis should address the impact of offshore wind development on existing multiple uses including shipping and fishing.
11. The NEPA analysis should address the interaction of this proposal and the proposed LNG export facilities near Coos Bay. Such interactions may include power supply agreements, navigation hazards, and cumulative environmental effects.
12. Finally, we are very concerned about the cumulative impacts of renewable and fossil energy development. The United States' "all of the above" energy policy means that the environmental footprint of renewable and non-renewable energy (such as gas fracking and coal) keep expanding, while the adverse effects of climate change and ocean acidification remain almost entirely unmitigated. Decisions on significant energy projects must be preceded by the development of a sound national energy policy. Oregon Wild recognizes the paramount need to avoid and mitigate global warming. We support the transition from fossil energy to renewable energy, but we insist that it be done in a thoughtful way. Lacking a coherent energy policy, the nation's current approach appears to simultaneously promote growth in fossil fuels and renewables. This will not address global warming and will increase the cumulative ecological impacts from renewable energy development, plus the already significant adverse impacts of fossil fuel use, including global warming. The goal must be to *couple* the development of renewable energy with absolute reductions in fossil energy use, so that GHG emissions are reduced in absolute terms, and so that the cumulative ecological footprint of the energy sector does not continue to increase.

    New research now shows that alternative energy development is NOT displacing fossil fuels use, which raises a very serious question whether we should accept new impacts from alternative energy while policy-makers refuse to address the urgent need to curtail fossil energy use. See Richard York 2012. Do alternative energy sources displace fossil fuels? Nature Climate Change. DOI: 10.1038/NCLIMATE1451 ("A fundamental, generally implicit, assumption of the Intergovernmental Panel on Climate Change reports and many energy analysts is that each unit of energy supplied by non-fossil-fuel sources takes the place of a unit of energy supplied by fossil fuel sources. However … the average pattern across most nations of the world over the past fifty years is one where each unit of total national energy use from nonfossil-fuel sources displaced less than one-quarter of a unit of fossil-fuel energy use and, focusing specifically on electricity, each unit of electricity generated by non-fossil-fuel sources displaced less than one-tenth of a unit of fossil-fuel-generated electricity. These results challenge conventional thinking in that they indicate that suppressing the use of fossil fuel will require changes other than simply technical ones such as expanding non-fossil-fuel energy production. … One implication of these results is that direct suppression of fossil-fuel use (for example, by a carbon tax) is likely to be much more effective at reducing fossil-fuel use than simply expanding non-fossil-fuel energy sources. It is possible that non-fossil energy sources could more substantially displace fossil energy sources if they were deployed in a context where there were explicit policies aimed at reducing carbon emissions, such as in California where there is a goal of dramatically reducing carbon emissions over the coming decades. The most effective strategy for curbing carbon emissions is likely to be one that aims to not only develop non-fossil energy sources, but also to

find ways to alter political and economic contexts so that fossil-fuel energy is more easily displaced and to curtail the growth in energy consumption as much as possible.")

University of California Berkeley scholar Ozzie Zehner says, to avoid this problem where increasing energy supply leads to more energy demand -

> … there are five necessary prerequisites that have to be followed: 1. Low per-capita energy consumption; 2. An energy tax scheduled to increase over time; 3. A binding long-term plan to improve building and equipment efficiency; 4. Legislation that prioritizes walkable and bikeable neighborhoods over car culture; and 5. Universal healthcare and a strong human rights record. [Of these prerequisites] "The United States meets none," noted Zehner. "In fact, in countries such as the United States, with dismal efficiency, sprawling suburbs, a growing population, and high rates of material consumption, renewable energy technologies do the most harm as they perpetuate energy-intensive modes of living."

Inhabitat website - Sustainable Design Innovation. 2012 Controversial New Book Claims Renewable Energy Does Not Offset Fossil Fuel Use. http://inhabitat.com/controversial-new-book-claims-renewable-energy-does-not-offset-fossil-fuel-use/.

Thank you for considering our comments. Please send a copy of the Environmental Assessment as soon as it is available for review and comment.

Sincerely,
/s/
Doug Heiken
Oregon Wild

Oregon
John A. Kitzhaber, MD, Governor

Board of Maritime Pilots
800 NE Oregon Street, Suite 507
Portland, OR 97232
(971) 673-1530
FAX: (971) 673-1531

July 28th, 2014

Bureau of Ocean Energy Management
Pacific OCS Region
Attn: Greg Sanders, Office of Environment
770 Paseo Camarillo, 2nd Floor
Camarillo, CA 93010

RE: Docket No. BOEM-2014-0050

Dear Sir,

The Oregon Board of Maritime Pilots (OBMP) is the state agency charged with regulating pilots, pilotage, and pilotage grounds in the state of Oregon. These grounds include the lower Columbia River, the Columbia River Bar, Yaquina Bay, and Coos Bay. Our mission is to insure that safe and efficient pilotage is available to the deep draft vessels that trade in the waters of Oregon and southern Washington.

I am writing specifically in reference to the floating platform wind energy project proposed by Principle Power, Inc., for the waters approximately 16 nautical miles off Coos Bay. I am very pleased that Coos Bay was chosen as a locale for the continued development of this clean energy technology. I further appreciate that the installation and support of this emerging technology will bring a wholly new sector of economic activity to both the International Port of Coos Bay and the broader region as well.

The focus of this letter is on the possible interaction between this project and the inbound and outbound deep draft vessel traffic calling at Coos Bay.

As you are probably aware, on August 1st, 2012, an Emissions Control Area (ECA) went into effect in most of the waters off the Continental US, including those off the Oregon coast. After that date, any vessel operating in the ECA was required to burn fuel containing less than 1% sulfur. This fuel, while significantly cleaner than the bunker fuel typically burned by deep draft vessels, is both more expensive and more wearing on the engines and machinery.

As a consequence, vessels trading with many regions of the country have elected to change their trans-oceanic routes to minimize the time in which they need to operate inside the ECA. This has often meant that vessels will make the last 200 miles of their approach to (or the first 200 miles of their departing voyage from) a U.S. port along a line perpendicular to the coastline, rather than following a great circle route that would place them on a longer diagonal course through the 200 nm ECA. These changes have been documented by compiling and comparing the Automated Identification System (AIS) vessel track histories before and after the imposition of the ECA.

It is also worth noting that newer, more stringent, ECA regulations will take effect on January 1st, 2015. At that time the allowable level of sulfur for vessel fuels used in the ECA will drop from 1.0% to 0.1% -- a tenfold decrease. This new fuel is expected to be still more expensive and may trigger more accelerated engine wear. If these expectations prove valid, it is reasonable to consider that even more vessels will seek to minimize fuel burn inside the ECA by seeking the shortest perpendicular track across it.

In light of these factors, we would ask that your work on this project include the following actions if, indeed, they have not already been taken:

1. Please consult with both the Coos Bay Pilots and the International Port of Coos Bay concerning any AIS vessel traffic analysis in the vicinity of the project site that has been done to date.

2. Please look specifically at the current impact of both the 1% sulfur rules on the routes chosen by inbound and outbound vessel traffic and the anticipated impact of the 0.1% sulfur standards that are due to take effect on January 1st, 2015. Please consult with Coos Bay Pilots and the International Port of Coos Bay on any related impacts in the vicinity of the project site or the Coos Bay Pilotage grounds.

3. Please consult with the Coos Bay Pilots concerning subsea cable routing between the project site and the shore, and any potential restricted anchoring zones in or near the Coos Bay pilotage grounds.

Thank you for your time and consideration.

Best regards,

Eric Burnette
Executive Director
Oregon Board of Maritime Pilots

cc:

The Coos Bay Pilots
Mr. David Koch, International Port of Coos Bay
Mr. Tom Markgraf, Chair, OBMP
David Hatton, Asst. Attorney General

MIDWATER TRAWLERS COOPERATIVE

PO Box 2352, Newport, Oregon • 97365 • 541.272.4544

Mr. Greg Sanders
BOEM – Pacific OCS Region
770 Paseo Camarillo, 2nd floor
Camarillo, CA 93010

RE: ***NOTICE OF INTENT TO PREPARE AN ENVIRONMENTAL ASSESSMENT FOR PROPOSED WIND ENERGY-RELATED DEVELOPMENT ACTIVITIES ON THE PACIFIC OUTER CONTINENTAL SHELF***

July 28th, 2014

Dear Mr. Sanders

Please accept these comments on behalf of the Midwater Trawlers Cooperative (MTC). MTC is a non-profit trade association that represents 23 mid-water trawl catcher vessels that commercially fish off the west coast and in Alaska. Twenty-two of MTC's vessels are home-ported in Newport, Oregon and the majority of our vessels participate in the west coast whiting fishery in either the at-sea mothership fishery, the shoreside fishery, or in most cases, both fisheries. Whiting, also known as Pacific hake, are a semi-pelagic schooling species distributed along the west coast of North America. The majority of whiting harvest in recent years has occurred off the state of Oregon. The whiting fishery generates millions of dollars in ex-vessel value, which translates to even more revenue when rural coastal community impacts are accounted for. MTC members could be greatly affected if the proposed lease for the current site is granted. Effects are not only economic (which are significant) but there are potential biological impacts to species of concern off the west coast.

Up front let me state that MTC continues to be stunned by the inadequate outreach done on the proposed Principal Power Wind Float project off of Coos Bay, Oregon, scheduled for decision-making in the near future. Not only has the outreach been woefully inadequate, what little has been done is far from any meaningful engagement. To that end, I welcome the opportunity to provide comments through this venue regarding the proposed Environmental Assessment (EA).

The 15-square mile proposed lease site falls in the middle of prime whiting fishing grounds. Principal Power who conducted outreach on behalf of its own project (apparently this job was delegated to Principal Power from BOEM which is, in itself, questionable) has until very recently neglected to reach out to those stakeholders who participate in the whiting fishery. Instead, due to either ignorance or careful calculation, Principal Power representatives talked with a few fishermen from the Coos Bay area that are not involved with the whiting fishery and concluded that the proposed lease space would not have conflict with ongoing commercial fishing activities. This could not be further from the truth. As

noted above, the whiting fishery is a multi-million dollar fishery that targets a semi-pelagic species off the west coast. Millions of pounds of whiting have been harvested from the 15-square mile area that the proposed lease would put off limits to whiting fishermen. Data collected and compiled by a third party demonstrating this harvest over the years has been supplied to Principal Power and others to evidence the extreme importance of this area to the fishery. Turning what would appear to be a blind eye, Principal Power proponents have not acknowledged or considered the potential for the significant economic impact their project will have on an historical and very economically important commercial fishery. As one representative said to me, "we need to locate the project somewhere," and "if we change the site we will likely come against similar pushback from another fishing sector." When I replied, "well, we were there first," his response was along the lines of, "well, that's not my problem." This type of exchange only further evidences the complete lack of respect and consideration for other ongoing activities in the area and this can clearly be seen in the flawed proposal that was submitted to BOEM for consideration.

Whiting fishermen contend with several competing objectives during the season. Ideally fishermen want to harvest whiting where the "cleanest" fishing can occur – that is, where there is little bycatch of other types of fish besides the target fishery species. At the same time, whiting are a pelagic species and they move according to water temperatures and feed availability – obviously ocean conditions are out of a fishermen's control. With that, harvesters use their historical knowledge together with shared current information in order to find the schools of fish and maximize their whiting catch all while reducing catch of unintended fish, including species of concern, which have extremely low catch quotas. Historical information demonstrates that millions of pounds of whiting have been harvested from within the lease area and that relatively clean fishing has occurred in that area. If this area becomes off limits to whiting fishermen it exacerbates the challenges they already face in terms of maximizing whiting harvest while minimizing bycatch.

Further, the proposed project is a pilot project that intends to "scale up" at some point. This means additional grounds off limits to any number of fishing sectors further exacerbating the problems just outlined above. Impacts are far greater than the footprint of any space that is set aside. These considerations should be taken into account now, prior to moving forward with the pilot project. While seeking alternative energy sources is important for the American public – displacing an historic and economically important industry in order to further the green energy movement is not only unreasonable it threatens the viability of coastal communities along the west coast that depend on fishing and seafood for their livelihoods and to feed the American people.

Principal Power representatives have indicated it is just too difficult for them to change their plans now and consider an alternative site. Even though their siting process was flawed and did not consult with appropriate fishing industry stakeholders they continue to content there is nothing else they can reasonably do. This is shocking, frankly. I would hope that BOEM would consider the cavalier and inappropriate response Principal Power has had to legitimate fishing industry concerns. Why would BOEM reward a company whose entire premise is based on a flawed process – this is tantamount to fraudulent activity and it should not be tolerated by BOEM or any other government agency.

MTC fully supports those comments submitted by the Pacific Whiting Conservation Cooperative, the United Catcher Boats and Phoenix Processor Limited Partnership. Further we agree with our colleagues in the whiting industry that an EA is wholly inadequate to examine the economic and environmental impacts of approving the project as currently proposed. Principal Power's proposal deserves nothing less than an Environmental Impact Statement in order to meet the requirements of NEPA. It is also disturbing (and likely illegal) to make a determination to grant the lease prior to the completion of an EA or EIS – although the perception is that this is exactly what is occurring here. I hope I am mistaken about this impression.

The fact remains that millions of pounds of whiting have been harvested from the area that is proposed for closure. This will cause economic harm to MTC member vessels and to an important industry that sustains rural coastal communities. This closure will have a ripple effect and potentially cause conversation harm to certain rockfish species of concern. These are not trivial issues and they must be vetted through a thorough EIS process.

Thank you for considering our concerns. I can be reached at 541-272-4544 or heathermunromann@gmail.com to provide additional information or answer any questions.

Sincerely,

Heather Munro Mann
Executive Director

cc Congressman Peter DeFazio, OR
Congressman Kurt Schrader, OR
Congresswoman Susan Bonamici, OR
Congressman Greg Walden, OR
Senator Ron Wyden, OR
Senator Jeff Merkley, OR
Governor John Kitzhaber, OR

2320 West Commodore Way
Suite 200
Seattle, WA 98199

GLACIER FISH COMPANY®

Phone: 206-298-1200
Fax: 206-298-4750
www.glacierfish.com

July 28, 2014

Greg Sanders
BOEM Pacific OCS Region
770 Paseo Camarillo, Second Floor
Camarillo, California 93010

RE: Notice of Intent to Prepare an Environmental Assessment– Docket No. BOEM–2014–0050; MMAA104000

Dear Mr. Sanders:

Glacier Fish Company (GFC) supports the comments submitted by the Pacific Whiting Conservation Cooperative (PWCC) and urges the Bureau of Ocean Energy Management (BOEM) to conduct a full Environmental Impact Statement (EIS) in its consideration of the wind farm proposal submitted by Principle Power. As noted by the PWCC and other stakeholders, the proposed wind farm project off Coos Bay, Oregon will have significant detrimental effects on participants in the Pacific whiting fishery and those impacts need to be analyzed in an EIS. GFC also agrees that an Environmental Assessment is inadequate because the proposed project is likely to hinder conservation and management of federally protected rockfish and salmonids, further demonstrating the need for an EIS.

GFC has participated in the Pacific whiting fishery since 1992 and been a member of the PWCC since its formation in 1997. We have two vessels that catch and process Pacific whiting – the *Pacific Glacier* and the *Alaska Ocean*. Each vessel employs approximately 90 persons (officers, crew, and fish processors) on board the vessel during the whiting fishery. GFC provides high quality frozen seafood products from whiting to markets in the United States, Asia, and Europe.

Stability in the whiting fishery enables fishery managers and fishery participants to monitor catch and bycatch in the fishery in near real time, facilitating precise management of the fishery and the ability to move to areas of high target catch and minimal bycatch. This stability increases economic efficiency and minimizes impacts on non-target species. GFC agrees with the PWCC and others that the current location proposed for the wind farm will destabilize the whiting fishery. This imbalance will cause significant economic and environmental harm, the former because of the increased likelihood the whiting fishery will be closed because it was unable to access "clean" fishing grounds, and the latter because bycatch of non-target species, including species of concern, will be higher.

In summary, GFC requests that BOEM conduct an EIS to fully analyze the spectrum of significant impacts that will occur because of the proposed wind farm, as well as the associated liquefied natural

gas terminal (noted in the project application) and future offshore energy projects that flow from the proposed pilot project. It is evident that without an EIS the full range of cumulative impacts will not be analyzed adequately.

Thank you for your attention to our concerns.

John Bundy

Memorandum

To: Jean Thurston and Greg Sanders, Bureau of Ocean Energy Management, Pacific OCS Region, Camarillo, CA

From: Kim Hatfield, National Marine Fisheries Service, Portland, OR

Subject: Comments on Notice of Intent to Prepare an Environmental Assessment for Proposed Wind Energy-Related Development Activities

The National Marine Fisheries Service (NMFS) West Coast Region has reviewed the Bureau of Ocean Energy Management's (BOEM) Notice of Intent (NOI) to Prepare an Environmental Assessment (EA) in response to a lease request for the outer continental shelf (OCS) which includes a proposal from Principle Power, Inc. (Applicant) to construct and operate offshore wind energy demonstration project near Coos Bay, Oregon.

The WindFloat Pacific Demonstration Project (Project) proposal is to install a floating wind energy demonstration facility about 16 nautical miles from shore in water depths of approximately 1,400 feet. The area being considered in the EA encompasses 15 square miles; however the lease will include only a portion of that area. As described in the Lease Application, the Project will consist of five floating turbines secured to the seafloor with multiple mooring lines and vertical load anchors, and arranged in an array spanning 4 to 8 square miles. The array will connect to the onshore grid via a subsea transmission cable to be installed along the ocean floor before it crosses the North Spit and terminates at a power substation. We understand that the applicant is seeking authorization of a 25-year-long lease (anticipated 2017-2042) for a demonstration project limited to the 5-turbine-array, associated moorings, and cable described above.

NMFS has been working with BOEM, US Fish and Wildlife Service, the Oregon Department of Fish and Wildlife, and the Applicant's project team to provide technical assistance and engage in preliminary discussions regarding the information needs for the proposed Project. NMFS submits the following specific comments and recommendations on BOEM's NOI in addition to any information shared informally during collaboration and through the Oregon Ocean Energy Task Force.

NMFS looks forward to continued collaboration with the Applicant, other resource agencies, cooperating agencies and BOEM throughout the leasing process and following through with participation in adaptive management for the duration of the proposed demonstration project. If you have any questions, please contact Kim Hatfield (503-231-2315).

Comments

Monitoring and Adaptive Management:
NMFS is concerned with potential impacts to marine species and their habitats from the installation and operation of the proposed demonstration Project. NMFS recommends that BOEM and the Applicant continue to work collaboratively with NMFS and other resource agencies to develop project-specific monitoring of stressors and effects with adaptive mitigation or response measures in the context of an adaptive management program to ensure that potential effects and unanticipated effects can be minimized to the extent possible. The monitoring and mitigation should be included as a part of the proposed action analyzed in the EA. Potential monitoring and adaptive management needs include:

- Acoustics to evaluate anthropogenic noise from the installation and operation of the Project: pre-installation characterization of ambient sound levels over a full range of sea states may be required to support post-installation monitoring and evaluation of change in the acoustic environment that can be attributed to the Project.
- Electromagnetic fields (EMF), that may be emitted by Project components, interarray cables, or transmission cable connecting the site to shore
- Changes in marine habitat from construction or operation of the Project, including seafloor and open water habitat
- Predator/prey interactions, including fish attraction to the Project structures and attraction of elasmobranchs and other high-order predators that may be drawn to the array.

Scope of Analysis:
NMFS has included a project-specific species list as an attachment to this memorandum which includes ESA-listed species, designated critical habitat and essential fish habitat which may be affected by the Project. The EA should address the following:

Marine mammals: The EA should document cetacean (i.e., whale, dolphin, and porpoise) use of the project area during all seasons prior to deployment to facilitate post-installation assessment of effects such as acoustic harassment, physical collision, or entanglement.

Marine species entrainment & impingement: The fluctuating ballast system is described as a closed system and as such should not pose a risk of fish entrainment or impingement. Water intakes, if proposed, should be described and screening should be designed in accordance with NMFS criteria for fish passage.

Marine species entanglement: The mooring cables and inter-array transmission cables which would be present throughout the water column at the project site pose a potential risk of entanglement for fish, mammals, sea turtles, or other marine life. The proposed action should include descriptions of cables including flexibility/strength of cable materials (i.e., likelihood of cables forming loops), tension, flotation, depth in the water column, and spacing. The proposed

action should also include methods to avoid or minimize the likelihood of entanglement, monitoring for detection of entanglement, and emergency response procedures to address entanglement events should they occur.

Electromagnetic fields (EMF): The EA should describe the existing natural EMF occurring along the cable route and at the project site prior to installation and should include modeling of the potential EMF generated by the transmission cable. Changes in EMF may alter fish behavior, and the EA should discuss potential effects and methods the applicant will employ to minimize impacts such as shielding and burial of the transmission cable.

Habitat: Hard substrate within the proposed test site and along the cable route may include rock outcrops or biogenic habitat such as deep sea corals that should be detected during pre-deployment survey and avoided during device and cable installation. The project anchoring system should be designed to avoid impacts to hard substrates. The same study, detection, and avoidance should be applied to the cable route used to transmit power from the energy facility to onshore facilities.

Fish attraction/predator –prey interaction: The introduction of structure in the water column is likely to change to prey availability or community composition. The proposed action may need to include monitoring to characterize the magnitude of these potential effects.

Estuarine impacts: The proposed action should include a description of the activities occurring within the estuary (Coos Bay and other ports) and evaluate the potential effects to species and habitats.

Attachments:
Table 1 ESA-listed Species
Table 2 EFH Species

cc:
Kevin Bannister, Principle Power Inc.
Kristina Gifford, Herrera Environmental
Andrea Copping, Pacific Northwest National Laboratory
Delia Kelly, Oregon Department of Fish and Wildlife
Doug Young, Roberta Swift, Jim Thrailkill and Stephanie Stavrakas: US Fish and Wildlife Service

Table 1. ESA-listed species which may occur within the proposed project area.

Common Name	Scientific Name	Listing Status	Critical Habitat
Cetaceans			
Southern resident killer whale	*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	*Balaenoptera physalus*	E 12/02/1970; 35 FR 18319	None designated
Humpback whale	*Megaptera novaeangliae*	E 12/02/1970; 35 FR 18319	None designated
Sei whale	*Balaenoptera borealis*	E 12/02/1970; 35 FR 18319	None designated
Sperm whale	*Physeter macrocephalus*	E 12/02/1970; 35 FR 18319	None designated
Pinnipeds			
Eastern distinct population segment 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
Loggerhead sea turtle	*Caretta caretta*	T 7/28/1978; 43 FR 32800	None designated
Green sea turtle	*Chelonia mydas*	E,T 7/28/1978; 43 FR 32800	9/2/1998; 63 FR 46693
Olive ridley sea turtle	*Lepidochelys olivacea*	E 7/28/1978; 43 FR 32800	None designated
Chinook salmon (*Oncorhyncus tshawytscha)*			
Lower Columbia River		T 6/28/05; 70 FR 37160	9/02/05; 70 FR 52630
Upper Willamette River spring-run		T 6/28/05; 70 FR 37160	9/02/05; 70 FR 52630
Upper Columbia River spring-run		E 6/28/05; 70 FR 37160	9/02/05; 70 FR 52630
Snake River spring/summer run		T 6/28/05; 70 FR 37160	10/25/99; 64 FR 57399
Snake River fall-run		T 6/28/05; 70 FR 37160	12/28/93; 58 FR 68543
California Coastal spring-run		T 8/15/11; 76 FR 50447	9/2/05; 70 FR 52488
Sacramento River winter-run		E 8/15/11; 76 FR 50447	6/16/93; 58 FR 33212
Central Valley spring-run		T 8/15/11; 76 FR50447	9/2/05; 70 FR 52488

Common Name	Scientific Name	Listing Status	Critical Habitat
Coho salmon (*O. kisutch*)			
Lower Columbia River		T 6/28/05; 70 FR 37160	Not applicable
Southern Oregon / Northern California Coasts		T 6/20/11; 76 FR 35755	2/11/08; 73 FR 7816
Oregon Coast		T 6/28/05; 70 FR 37160	5/5/99; 64 FR 24049
Central California Coast		E 8/15/11; 76 FR 50447	5/5/99; 64 FR 24049
Steelhead (*O.mykiss*)			
Lower Columbia River steelhead		T 08/15/11; 76 FR 50448	9/2/05; 70 FR 52630
Upper Willamette River steelhead		T 08/15/11; 76 FR 50448	9/2/05; 70 FR 52630
Middle Columbia River steelhead		T 08/15/11; 76 FR 50448	9/2/05; 70 FR 52630
Upper Columbia River steelhead		T 08/15/11; 76 FR 50448	9/2/05; 70 FR 52630
Snake River basin steelhead		T 08/15/11; 76 FR 50448	9/2/05; 70 FR 52630
South-Central California Coast steelhead		T 01/5/06; 71 FR 834	9/2/05; 70 FR 52488
Central California Coastal steelhead		T 01/5/06; 71 FR 834	9/2/05; 70 FR 52488
Northern California steelhead		T 01/5/06; 71 FR 834	9/2/05; 70 FR 52488
California Central Valley steelhead		T 08/15/11; 76 FR 50447	9/2/05; 70 FR 52488
Sockeye salmon (*O. nerka*)			
Snake River		E 08/15/11; 76 FR 50448	12/28/93; 58 FR 68543
Chum salmon (*O. keta*)			
Columbia River		T 08/15/11; 76 FR 50448	9/2/05; 70 FR 52630
North American green sturgeon (southern Distinct Population Segment)	*Acipenser medirostris*	T 4/07/06; 71 FR 17757	10/09/09; 74 FR 52300
Eulachon	*Thaleichthys pacificus*	T 3/18/10; 75 FR 13012	10/20/11; 76 FR 65324

E = listed as endangered; T = listed as threatened

Table 2. Species with designated EFH which may occur within the proposed project area.

Groundfish Species				
SpeciesCommon	*Species Scientific Name*	Lifestage	Activity	Prey
Arrowtooth flounder	*Atheresthes stomias*	Adults		Clupeids, gadids, krill, shrimp, Theragra chalcogramma
	Atheresthes stomias	Larvae		Copepod eggs, copepod nauplii, copepods
Bank rockfish	*Sebastes rufus*	Adults		gelatinous plankton, krill, small fishes, tunicates
	Sebastes rufus	Juveniles		gelatinous plankton, krill, small fishes, tunicates
Big skate	*Raja binoculata*	Adults		Crustaceans, fish
Black rockfish	*Sebastes melanops*	Adults		Amphipods, cephalopods, clupeids, euphausiids, mysids, polychaetes, salps
Blue rockfish	*Sebastes mystinus*	Adults	Feeding	algae, crab, juvenile fish, fish larvae, hydroids, jellyfish, krill, salps, tunicates
	Sebastes mystinus	Juveniles	Feeding	algae, copepods, crab, euphausiids, juvenile fish, hydroids, krill, salps, tunicates
	Sebastes mystinus	Juveniles	All	algae, copepods, crab, euphausiids, juvenile fish, hydroids, krill, salps, tunicates
Bocaccio	*Sebastes paucispinis*	Adults	Feeding	Juvenile rockfish, molluscs, small fishes
	Sebastes paucispinis	Juveniles	Feeding	Copepods, euphausiids
Butter sole	*Isopsetta isolepis*	Adults		Amphipods, decapod crustaceans, molluscs, polychaetes, sea stars, shrimp
Cabezon	*Scorpaenichthys marmoratus*	Adults		Crabs, fish eggs, lobsters, molluscs, small fishes
Canary rockfish	*Sebastes pinniger*	Adults		Euphausiids, fish, krill
Chilipepper	*Sebastes goodei*	Adults		Clupeids, euphausiids, krill, Merluccius productus,squids
	Sebastes goodei	Juveniles		Copepods, euphausiids
Copper rockfish	*Sebastes caurinus*	Adults		Crustaceans, fish, molluscs, shrimp
Cowcod	*Sebastes levis*	Adults		Fish, octopi, squids
Curlfin sole	*Pleuronichthys decurrens*	Adults	All	Crustacean eggs, echiurid proboscises, nudibranchs, polychaetes
Darkblotched rockfish	*Sebastes crameri*	Adults		Amphipods, euphausiids, octopi, salps, small fishes
English sole	*Parophrys vetulus*	Adults		Amphipods, crustaceans, cumaceans, molluscs, ophiuroids, polychaetes
	Parophrys vetulus	Juveniles		Amphipods, copepods, cumaceans, molluscs, mysids, polychaetes
Flag rockfish	*Sebastes rubrivinctus*	Adults		Crabs, fish, octopi, shrimp
Flathead sole	*Hippoglossoides elassodon*	Adults		Clupeids, fish, molluscs, mysids, polychaetes, shrimp
Grass rockfish	*Sebastes rastrelliger*	Adults		Cephalopods, crabs, crustaceans, fish, gastropod, shrimp

Groundfish Species				
SpeciesCommon	*Species Scientific Name*	Lifestage	Activity	Prey
Greenstriped rockfish	*Sebastes elongatus*	Adults		Copepods, euphausiids, shrimp, small fishes, squids, tunicates
Kelp greenling	*Hexagrammos decagrammus*	Adults		Brittle Stars, crabs, octopi, shrimp, small fishes, snails, worms
	Hexagrammos decagrammus	Larvae		Amphipods, brachyuran, copepod nauplii, copepods, euphausiids, fish larvae
Lingcod	*Ophiodon elongatus*	Adults	Unknown	Demersal fish, juvenile crab, octopi, squid,
	Ophiodon elongatus	Larvae	Unknown	amphipods, copepod eggs, copepod nauplii, copepods, decapod larvae, euphausiids
Pacific cod	*Gadus macrocephalus*	Adults		Amphipods, crabs, mysids, sandlance, shrimp, Theragra chalcogramma
	Gadus macrocephalus	Juveniles		Amphipods, copepods, crabs, shrimp
	Gadus macrocephalus	Larvae		Copepods
	Gadus macrocephalus	Larvae		Copepods
Pacific hake	*Merluccius productus*	Juveniles		Euphausiids
	Merluccius productus	Adults	All	Amphipods, clupeids, crabs, Merluccius productus, rockfish, squids
Pacific ocean perch	*Sebastes alutus*	Adults		Copepods, euphausiids, mysids, shrimp, small fishes, squids
	Sebastes alutus	Juveniles		Copepods, euphausiids,
Pacific sanddab	*Citharichthys sordidus*	Adults		Clupeids, crab larvae, octopi, squids
Petrale sole	*Eopsetta jordani*	Adults		Eopsetta jordani, euphausiids, ophiuroids, pelagic fishes, shrimp
Quillback rockfish	*Sebastes maliger*	Adults		Amphipods, clupeids, crabs, euphausiids, juvenile fish, molluscs, polychaetes, shrimp
Redstripe rockfish	*Sebastes proriger*	Adults		Clupeids, juvenile fish, squid
Rex sole	*Glyptocephalus zachirus*	Adults		Cumaceans, euphausidds, larvacea, polychaetes
Rock sole	*Lepidopsetta bilineata*	Adults		echinoderms, echiurans, fish, molluscs, polychaetes, tunicates
Rosethorn rockfish	*Sebastes helvomaculatus*	Adults		Amphipods, copepods, euphausiids
Rosy rockfish	*Sebastes rosaceus*	Adults		Crabs, shrimp
Sablefish	*Anoplopoma fimbria*	Juveniles	Growth to Maturity	Amphipods, cephalopods, copepods, demersal fish, euphausiids, krill, small fishes, squids, tunicates
	Anoplopoma fimbria	Larvae	Feeding	Copepod eggs, copepod nauplii, copepods
Sand sole	*Psettichthys melanostictus*	Adults		Clupeids, crabs, fish, molluscs,mysids, polychaetes, shrimp
Sand sole	*Psettichthys melanostictus*	Juveniles		Euphausiids, molluscs, mysids, polychaetes, shrimp
Sharpchin rockfish	*Sebastes zacentrus*	Adults		Amphipods, copepods, euphausiids, shrimp, small fishes

Groundfish Species				
SpeciesCommon	*Species Scientific Name*	Lifestage	Activity	Prey
	Sebastes zacentrus	Juveniles		Amphipods, copepods, euphausiids, shrimp, small fishes
Shortbelly rockfish	*Sebastes jordani*	Adults		Copepods, euphausiids
Shortraker rockfish	*Sebastes borealis*	Adults		bathylagids, cephalopods, decapod crustaceans, fish, molluscs, myctophids, mysids, shrimp
Shortspine thornyhead	*Sebastolobus alascanus*	Adults		Amphipods, copepods, crabs, fish, polychaetes, Sebastolobus alascanus, Sebastolobus altivelis, shrimp
Soupfin shark	*Galeorhinus galeus*	Juveniles	Growth to Maturity	Fish, invertebrates
	Galeorhinus galeus	Adults		Fish, invertebrates
Spiny dogfish	*Squalus acanthias*	Adults	All	Invertebrates, pelagic fishes
	Squalus acanthias	Adults	Feeding	Invertebrates, pelagic fishes
Splitnose rockfish	*Sebastes diploproa*	Juveniles		Amphipods, cladocerans, copepods
Spotted ratfish	*Hydrolagus colliei*	Adults		algae, amphipods, annelids, brittle stars, fish, hydrolagus collei, molluscs, nudibranchs, opisthobranchs, ostracods, small crustacea, squid
	Hydrolagus colliei	Juveniles		algae, amphipods, annelids, brittle stars, fish, hydrolagus collei, molluscs, nudibranchs, opisthobranchs, ostracods, small crustacea, squid
Starry flounder	*Platichthys stellatus*	Adults		Crabs, fish juveniles, molluscs, polychaetes
	Platichthys stellatus	Juveniles		Amphipods, copepods, polychaetes
Stripetail rockfish	*Sebastes saxicola*	Adults		Copepods, euphausiids
	Sebastes saxicola	Juveniles		Copepods
Tiger rockfish	*Sebastes nigrocinctus*	Adults		Amphipods, clupeids, crabs, juvenile fish, juvenile rockfish, shrimp
Vermilion rockfish	*Sebastes miniatus*	Adults		Clupeids, juvenile rockfish, krill, octopi, squid
Widow rockfish	*Sebastes entomelas*	Adults		Amphipods, copepods, euphausiids, Merluccius productus, salps, shrimp, squids
	Sebastes entomelas	Juveniles		Copepod eggs, copepods, euphausiid eggs
Yelloweye rockfish	*Sebastes ruberrimus*	Adults		Clupeids, cottids, crabs, gadids, juvenile rockfish, sea urchin, shrimp, snails
Yellowtail rockfish	Sebastes flavidus	Adults		Clupeids, euphausiids, krill, Merluccius productus, mysids, salps, squids, tunicates

Pacific Salmon	
Coho Salmon	*Oncorhynchus kisutch*
Chinook Salmon	*Oncorhynchus tshawytscha*
Coastal Pelagic Species	
Pacific Sardine	*Sardinops sagax*
Pacific (Chub) Mackerel	*Scomber japonicus*
Northern Anchovy	*Engraulis mordax*
Jack Mackerel	*Trachurus symmetricus*
California Market Squid	*Loligo opalescens*
Highly Migratory Species	
Common thresher shark	*Alopias vulpinus*
Bigeye thresher shark	*Alopias superciliosos*

OCEANA | Protecting the World's Oceans

1350 Connecticut Ave. NW, 5th Floor
Washington, DC 20036 USA

+202.833.3900
oceana.org

July 28, 2014

Via Federal e-Rulemaking Portal

Greg Sanders
BOEM Pacific OCS Region
770 Paseo Camarillo, 2nd Floor
Camarillo, CA 93010

RE: Notice of Intent to Prepare an Environmental Assessment for Proposed Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf (OCS) Offshore Oregon and Notice of Public Scoping Meetings [Docket No. BOEM-2014-0050; MMAA 104000]

Dear Mr. Sanders:

Oceana supports the responsible siting and development of wind energy offshore Oregon. Oceana welcomes this Notice of Intent to prepare an Environmental Assessment for an area offshore Coos Bay, Oregon. Renewable energy development must be carefully planned due to the facility's proposed location in the indispensable California Current Ocean Ecosystem, sometimes referred to as the "Blue Serengeti,"[1] which may be one of the greatest hotspots for open ocean predators and wildlife in the world. With proper consideration to marine resources, however, industries may be able to responsibly and safely develop floating wind turbines offshore Oregon.

Floating offshore wind platforms are a relatively recent development in renewable energy technology. Its advantage is allowing offshore wind energy generation in deep waters. The Department of Energy (DOE) should be praised for recognizing that floating wind technology must be a significant part of the nation's clean energy portfolio. The DOE awarded over $40 million to Principle Power for the development of this demonstration project. The lessons learned through this process will be vital for subsequent projects in similar offshore environments.

[1] Eilperin, J. "Study: West Coast is like an underwater Serengeti, teeming with wildlife." *Washington Post* 22 June 2011.:Accessed at: http://www.washingtonpost.com/national/health-science/west-coast-boasts-underwater-serengeti-study-finds/2011/06/21/AG9jzzfH_story.html and Dybas, C.L. "Into the Blue Serengeti. The migration of Pacific predators resemble those of African wildlife." *Natural History*. Accessed at: http://www.naturalhistorymag.com/features/242338/into-the-blue-serengeti

The Bureau of Ocean and Energy Management (BOEM)'s Environmental Assessment (EA) must include a discussion of detailed alternatives, including alternatives for mitigation.[2] We ask that the EA:

1. Analyze potential impacts from development of offshore wind facilities;
2. Identify and analyze potential impacts to vulnerable species and habitats likely found in the offshore wind area;
3. Identify and analyze potential impacts to existing fishing uses in and near the area of the proposed project;
4. Include additional alternatives in the EA that provide exclusion zones for species of concern; and
5. Incorporate adaptive management into the EA's alternatives

DETAILED COMMENTS

Construction of renewable offshore energies has the potential to negatively affect marine habitats and species. The demonstration project offshore Oregon is a floating structure that will have fewer impacts to marine life than those caused by more traditional offshore turbines with monopole foundations. Nonetheless, analysis and evaluation of potential impacts to marine habitats and species from offshore energy development is vital. Industries, agencies, and the public should have a full understanding of any impacts to our public resources, and possible adaptive management changes such as site modification or decommissioning.

1. ANALYZE POTENTIAL IMPACTS FROM DEVELOPMENT OF OFFSHORE WIND FACILITIES

BOEM should assess the environmental impacts of the proposed action in enough detail to determine if an environmental impact statement is necessary. To accomplish this end, we suggest that BOEM consider the following categories of impact.

Dynamic Effects of Devices

Development of wind energy, whether onshore or offshore, can lead to blade strike, which threatens migratory birds and bats.[3] Lighting and above-water structures may lead to collisions by attracting seabirds, particularly during times of low visibility. However, recent data indicate that some bird species can avoid wind turbines and they are able to navigate through an offshore wind farm.[4] The EA should include a scientifically-supported estimate of impacts to birds and bats from this demonstration project.

Chemical Effects

[2] 40 U.S.C. §4332(C)(iii); 40 C.F.R. §§ 1508.9, 1508.25.
[3] Boehlert, G. W. and A. B. Gill. 2010. Environmental and Ecological Effects of Ocean Renewable Energy Development, A Current Synthesis. Oceanography, Vol. 23, No. 2, page 71.
[4] Deshold, M. and J. Kahlert. 2005. Avian collision risk at an offshore wind farm. Biology Letters. Volume 1. Pages 296-298.

Marine vessel operations may introduce chemicals into the environment during deployment, routine servicing, and decommissioning. Since the construction phase will occur on land, vessel traffic should be at a minimum, thus reducing the potential for impact from chemicals. Additionally, in normal operations, hydraulic fluids may leak into the marine environment.[5] The EA should analyze types and quantities of chemicals used by vessels, turbines and other equipment used in the construction and operations phase of this project and consider measures to minimize chemical effects.

Electromagnetic Effects

Production of electricity offshore requires installation of transmission cables to bring generated power to onshore facilities. During transmission of electricity, cables will emit low-frequency electromagnetic fields (EMF).[6] EMFs introduced into the marine environment are "most likely to affect animals that use EMFs for spatial location, large-scale movement, small-scale orientation, feeding, or mate finding."[7] However, little is known concerning electrically and magnetically sensitive animals, and for offshore wind farms, there are no applicable relevant studies.[8] The EA should analyze which species in the area may be adversely affected by EMFs added to the marine environment from installation of transmission cables and consider mitigating measures, if necessary.

Acoustic Effects

The construction phase for offshore renewable energies, as compared to the operations phase, is often regarded as having the largest acoustic effects.[9] Vessel traffic during the construction and operation phases in the proposed project area will likely add to the normal background acoustic environment.[10] However, because the proposed project will be constructed shoreside and towed out to the site area, we acknowledge that vessel traffic will be minimal. The EA should still include an extensive analysis of all of the acoustic effects that are expected to occur at all phases of this project and consider mitigation measures, if necessary.

Migratory Species' Effects

---

[5] Boehlert, G. W. and A. B. Gill. 2010. Environmental and Ecological Effects of Ocean Renewable Energy Development, A Current Synthesis. Oceanography, Vol. 23, No. 2, pages 72-77.
[6] *Id.* Page 74.
[7] *Id.*
[8] Gill, A.B. et al. 2005. COWRIE 1.5 Electromagnetic Fields Review: The Potential Effects of Electromagnetic Fields Generated by Sub-Sea Power Cables Associated with Offshore Wind Farm Developments on Electrically and Magnetically Sensitive Marine Organisms – A Review. COWRIE Ltd. (Collaborative Offshore Wind Energy Research into the Environment) EM Field-06-2004, Page 128.
[9] Thomsen, F. K. et al. 2006. Effects of Offshore Wind Farm Noise on Marine Mammals and Fish. Biola, Hamburg, Germany, on behalf of COWRIE Ltd., Newbury, UK, Page 62.
[10] Boehlert, G. W. and A. B. Gill. 2010. Environmental and Ecological Effects of Ocean Renewable Energy Development, A Current Synthesis. Oceanography, Vol. 23, No. 2, page 73.

Development and construction of offshore wind facilities may interfere with migration routes of cetaceans and pinnipeds.[11] Therefore, at all phases of the demonstration project it will remain critical to immediately monitor potential effects on these species. The EA should indicate which migratory species may be affected and identify which behaviors may be altered as a result.

2. IDENTIFY AND ANALYZE POTENTIAL IMPACTS TO VULNERABLE SPECIES AND HABITATS LIKELY FOUND IN THE OFFSHORE WIND AREA

There are a number of species and habitats found in or around the proposed area that merit specific discussion. Oceana requests the EA fully analyzes any potential impacts that the demonstration project could have on the following species and habitats.

Leatherback Sea Turtles and Critical Habitat

As Figure 1 depicts, the proposed project is located inside critical habitat for the leatherback sea turtle, which is listed as endangered under the Endangered Species Act (ESA).[12] Pacific leatherback sea turtles nest in Indonesia, but migrate across the Pacific to the Oregon, Washington, and California coasts, where they feed on jellyfish. This project may affect leatherback sea turtles and their habitat. Accordingly, BOEM must consult the National Marine Fisheries Service under the Endangered Species Act and the EA must consider impacts to this species. Please note that offshore wind energy was identified in the final rule designating critical habitat as a potential impact offshore Oregon.

Green Sturgeon and Critical Habitat

The proposed project is adjacent to critical habitat for the ESA-listed threatened Southern distinct population segment of North American green sturgeon. Green sturgeon critical habitat, as shown in Figure 1, is located in the Coos Bay estuary and marine waters offshore Oregon out to 110 meters depth.[13] The proposed project may affect green sturgeon and their habitat. Accordingly, BOEM must similarly consult the Fisheries Service under the ESA and the EA must consider impacts to these species. Special management measures may be required.

Marine Mammals

Gray whales are a protected species under the Marine Mammal Protection Act. Gray whales make great migrations along the Oregon coast between Arctic feeding grounds and mating and calving grounds in the lagoons of Baja California, Mexico. Each year, roughly 200 gray whales do not continue to the Arctic to feed, but rather stay and feed off the Oregon coast. Recognizing possible impacts to gray whale migration with offshore renewable energy development, the Oregon Wave Energy Trust funded a study on the distribution and movement patters of gray whales off the coast of central Oregon and noted that gray whale migration was concentrated between two and nine kilometers from shore, while their field of view was limited to 18 km from

[11] *Id.* Page 78.
[12] 77 Fed Reg. 4170 (January 26, 2012).
[13] 74 Fed Reg. 52300 (October 9, 2009).

shore (10 nm).[14] Additional monitoring is therefore necessary to understand the migration patterns and potential impacts to gray whales in the proposed project area at 16 nautical miles from shore. We recognize it is possible that the proposed project is located just outside the gray whale migratory corridor, but this issue needs further study.

Other sensitive and vulnerable marine mammals that may use the proposed area for feeding and migration include ESA-listed blue whales, fin whales, humpback whales, northern Pacific right whales, sei whales, southern resident killer whales and sperm whales. Entanglement remains another threat to marine life, particularly to cetaceans, especially when cables and moorings are involved. Fish and invertebrates may be concentrated around these devices, which attracts both cetaceans and pinnipeds for feeding opportunities.[15] The EA should provide focused consideration to potential impacts to these endangered marine mammals and consider options for avoiding any impacts to these animals, as well as analyze potential time-area closures during marine mammal migrations during the construction and implementation phases.

Seabirds

Over one million seabirds, including 14 different species, nest on the offshore rocks and cliffs along the Oregon coast.[16] Other seabirds, including the sooty shearwarter and black-footed albatross migrate great distances to feed in the production ocean waters off the coast of Oregon. We request the EA analyze the potential impacts to nesting and foraging seabirds during the construction and implementation phases and consider whether or not the project area is located in a seabird foraging hotspot for either groups of seabird species or individuals.[17]

Physical Seafloor Habitat

Regional Fishery Management Councils may designate habitat areas of particular concern, which are "specific habitat areas…that play a particularly important ecological role in the fish life cycle or that are essentially sensitive, rare, or vulnerable."[18] Habitat Area of Particular Concern (HAPC) designation encourages extra management protections for habitats in order to buffer against adverse impacts and consultation is required for any activity that may impact a HAPC area.

---

[14] Mate, B., and J. Ortega-Ortiz. 2008. Distribution and movement patterns of gray whales off central Oregon: Shore-based observations from Yaquina During the 2007/2008 migration. Report by Oregon Wave Energy Trust (OWET). pp 36.

[15] DONG Energy, Vattenfall, Danish Energy Authority and The Danish Forest and Nature Agency. 2006. *Danish Offshore Wind: Key Environmental Issues*. Page 142. Available online at http://www.windaction.org/documents/6690.

[16] Naughton, M.B., D.S. Pitkin, R.W. Lowe, K.J. SO, and C.S. Strong. 2007. Catalog of Oregon seabird colonies. U.S. Department of Interior; Fish and Wildlife Service. Biological Technical Publication FWS/BTR-R1009-2007, Washington D.C.

[17] See: Nadav Nur, Jaime Jahncke, Mark P. Herzog, Julie Howar, K. David Hyrenbach, Jeannette E. Zamon, David G. Ainley, John A. Wiens, Ken Morgan, Lisa T. Ballance, and Diana Stralberg 2011. Where the wild things are: predicting hotspots of seabird aggregations in the California Current System. Ecological Applications 21:2241–2257. http://dx.doi.org/10.1890/10-1460.1

[18] "Habitat and Communities: Habitat." 2013. Pacific Fishery Management Council. Available at http://www.pcouncil.org/habitat-and-communities/habitat/.

The Pacific Fishery Management Council and National Marine Fisheries Service defined the following as HAPC types: estuaries, canopy kelp, seagrass, rocky reefs, and 'areas of interest.'[19] Development in any of these habitats must be avoided.

If there is doubt about whether the project will partly occur in or will affect such protected habitats, BOEM should consult the Fisheries Service on impacts and their mitigation. Based on data of predicted reef habitat, the area considered for offshore wind development may contain rocky reef habitat in the northeast corner (Figure 2).[20] If so, the project must be modified to avoid reef habitat.

It is important that the EA fully analyze the project area in relation to existing seafloor habitat data and given that the data quality for seafloor habitat types in this area is scarce, more refined mapping should occur before any development takes place. The majority of the project area, however, appears to be soft, sand and mud habitats based on the current data that is available and we would consider this habitat type to be less sensitive to the proposed project activities.

Biogenic Habitat

Biogenic habitats such as cold water corals and sponges are highly sensitive and important ecological features. Cold water corals and sponges act as habitat for a variety of marine fish species including flatfish, skates, lingcod, and many types of rockfish.[21] These habitats are highly sensitive to disturbance. Our initial analysis of coral and sponge data from National Oceanic and Atmospheric Administration trawl surveys and the West Coast Groundfish Observer program indicate that there are very few records of coral and sponge in the proposed site.[22] The area, however, does include high value predicted coral habitat and this should be considered in the EA, as shown in Figures 2 and 3 where potential impacts from anchoring could occur.[23] Additional seafloor mapping should be required to ground-truth the potential presence of coral and sponge in the region and possibility for impacts through project development. If there are any modifications to the boundaries of the proposed site, it is important to evaluate whether or not they will be located in nearby sensitive biogenic habitat areas.

3. IDENTIFY AND ANALYZE POTENTIAL IMPACTS EXISTING FISHING USES NEAR THE AREA OF THE PROPOSED PROEJCT

Commercial fisheries are an important existing use in and around the proposed project area. BOEM should analyze and consider the impacts to existing fisheries in the area in terms of

[19] National Marine Fisheries Service (NMFS). 2005. Pacific Coast Groundfish Fishery Management Plan Essential Fish Habitat Designation and Minimization of Adverse Impacts. Final Environmental Impact Statement. NMFS NW Region. Seattle, WA. December 2005.
[20] Data on physical substrate available at: http://efh-catalog.coas.oregonstate.edu/overview/
[21] Id.
[22] Data on biogenic substrate available at: http://efh-catalog.coas.oregonstate.edu/overview/
[23] Guinotte JM, Davies AJ (2014) Predicted Deep-Sea Coral Habitat Suitability for the U.S. West Coast. PLoS ONE 9(4): e93918. doi:10.1371/journal.pone.0093918

potential effort displacement. It is likely that fishermen will still be able to achieve fishery quotas outside of the area, but nonetheless, as seen in Figure 4, it appears some fisheries operate inside the proposed project site. The West Coast groundfish Essential Fish Habitat data portal includes effort data for fixed gear and trawl groundfish fisheries and these fisheries do operate in the area to some degree.[24] Recent effort can be analyzed with these publically available datasets and displacement can be measured in relation to overall effort in the region. Further, the Oregon Department of Fish and Wildlife has records of Oregon pink shrimp trawl effort in the region. Our understanding is that there are high value shrimp trawl grounds immediately east, or inshore, of the proposed project area. It will be important to consider how placement of transmission cables across trawl fishing grounds will affect the ability of fishermen to operate safely in this region. Other fisheries that may use this area include the Oregon Dungeness Crab fishery, albacore tuna, salmon, and others.

4. INCLUDE ADDITIONAL ALTERNATIVES IN THE EA THAT PROVIDE EXCLUSION ZONES FOR SPECIES OF CONCERN

The Notice indicated that there are currently only two alternatives under review: the proposal submitted by Principle Power and a no-action alternative.[25] Oceana urges BOEM to consider additional alternatives that include mitigation measures for marine life. Time-area closures should be considered in the construction phase in order to protect species with a seasonal presence. For example, gray whales migrate south in late November from the Chukchi, Beaufort and Bering Seas to their winter calving areas off the coast of Baja California, Mexico. The northward migration begins in mid-February where gray whales return to their summer feeding grounds between May and June.[26] Oceana urges BOEM to take these and other species' migration routes into consideration through creation of alternatives with time-area closures and exclusion zones to be incorporated at all phases in offshore wind development. In addition to considering exclusions for gray whales and other marine mammals, the EA should also develop alternatives for times of elevated seabird foraging in the area.

5. INCORPORATE ADAPTIVE MANAGEMENT INTO THE EA'S ALTERNATIVES

The development of Principle Power's demonstration project offshore Oregon will involve altering the environment at certain phases of planning, construction, and operation. The EA plans to "consider reasonably foreseeable environmental consequences associated with the proposed action, including the impacts of the construction, operation, maintenance and decommissioning of wind turbines and cables."[27] Therefore, Oceana recommends that the EA develop a mitigation

[24] Id. see 'effort data'.
[25] Notice of Intent to Prepare an Environmental Assessment for Proposed Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf (OCS) Offshore Oregon and Notice of Public Scoping Meetings. 29 May 2014. Federal Register, Vol. 79, No. 103. Page 30877.
[26] Quick Facts about Gray Whales. 2011. National Oceanic and Atmospheric Administration, Southwest Fisheries Science Center. Available at https://swfsc.noaa.gov/textblock.aspx?Division=PRD&ParentMenuId=211&id=16453.
[27] Notice of Intent to Prepare an Environmental Assessment for Proposed Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf (OCS) Offshore Oregon and Notice of Public Scoping Meetings. 29 May 2014. Federal Register, Vol. 79, No. 103. Page 30877.

alternative to conduct continuous biological monitoring at all stages in the development of offshore wind facilities and to incorporate an adaptive management framework in order to protect potentially affected species. The alternative should require BOEM to reassess environmental impacts every five years, make data publicly available, and stay current with emerging science as it relates to the potential environmental impacts of the project.

* * * * *

In conclusion, Oceana supports the ecologically responsible development of offshore wind in the United States, as it offers immense potential for economic growth and clean energy generation. Thus, we applaud and support BOEM's efforts to spur development in this nascent industry, especially through furthering innovative floating wind technology. To ensure the successful, responsible, and timely development of offshore wind off the Oregon coast, we request that BOEM will incorporate the aforementioned recommendations into the EA in order to fully analyze effects to the diverse marine life found in this area. Specifically, BOEM should:

- Analyze potential impacts to vulnerable species and habitats from development of offshore wind facilities;
- Identify and analyze the potential displacement and impacts to existing human uses;
- Identify and analyze potential impacts to existing fishing uses in and near the area of the proposed project;
- Include additional alternatives in the EA that
- Incorporate an adaptive management framework to accompany continuous biological monitoring.

We thank the Bureau of Ocean and Energy Management for the opportunity to submit these comments to guide the preparation of the upcoming Environmental Assessment (EA). We are looking forward to reviewing these documents upon their completion.

Sincerely,

Andrew Menaquale
Energy Analyst
Oceana

Ben Enticknap
Pacific Campaign Manager and Senior Scientist
Oceana

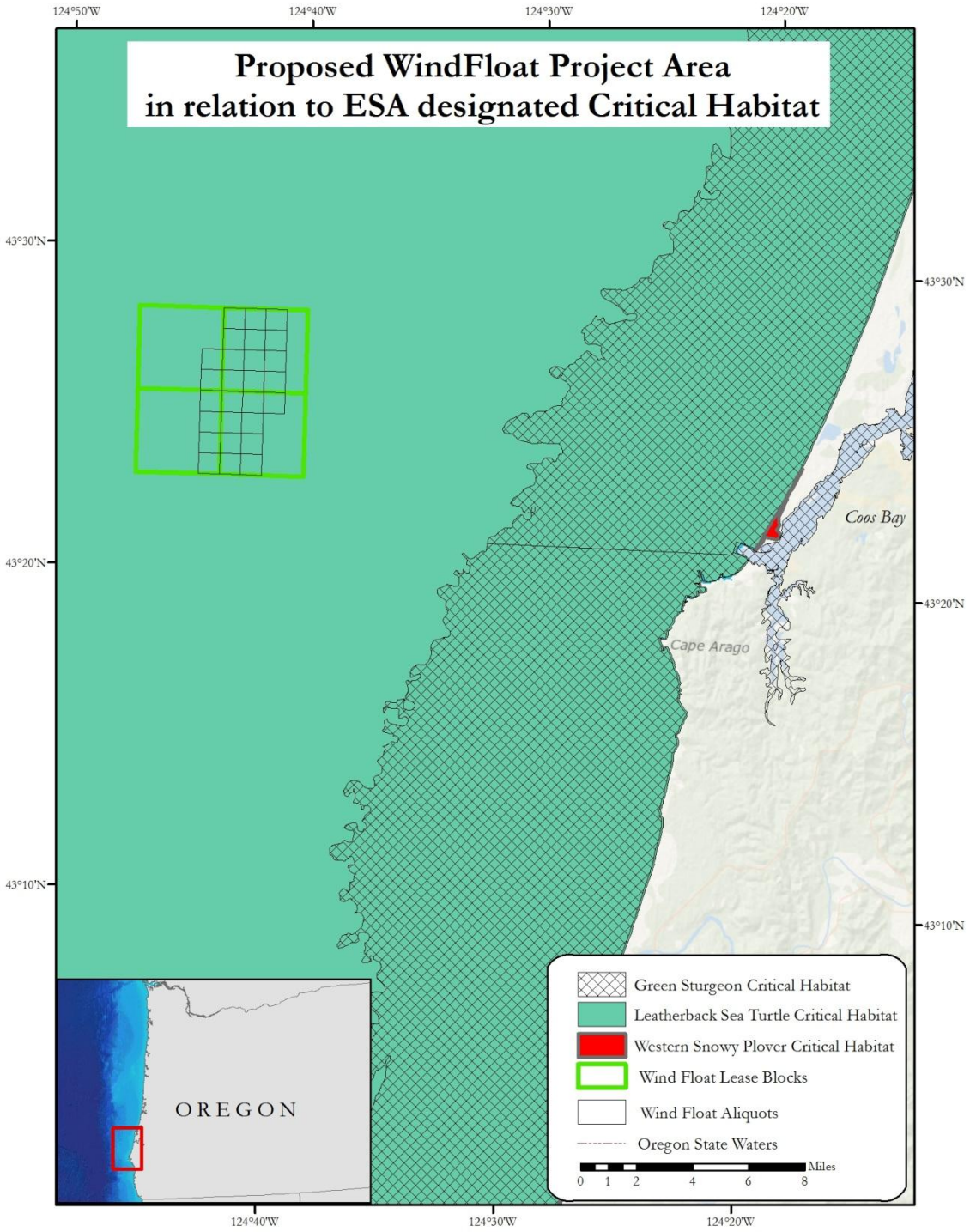


Figure 1. WindFloat project area in relation to critical habitat for leatherback sea turtles, the southern DPS of North American green sturgeon, and western snowy plover (north of the Coos Bay spit).

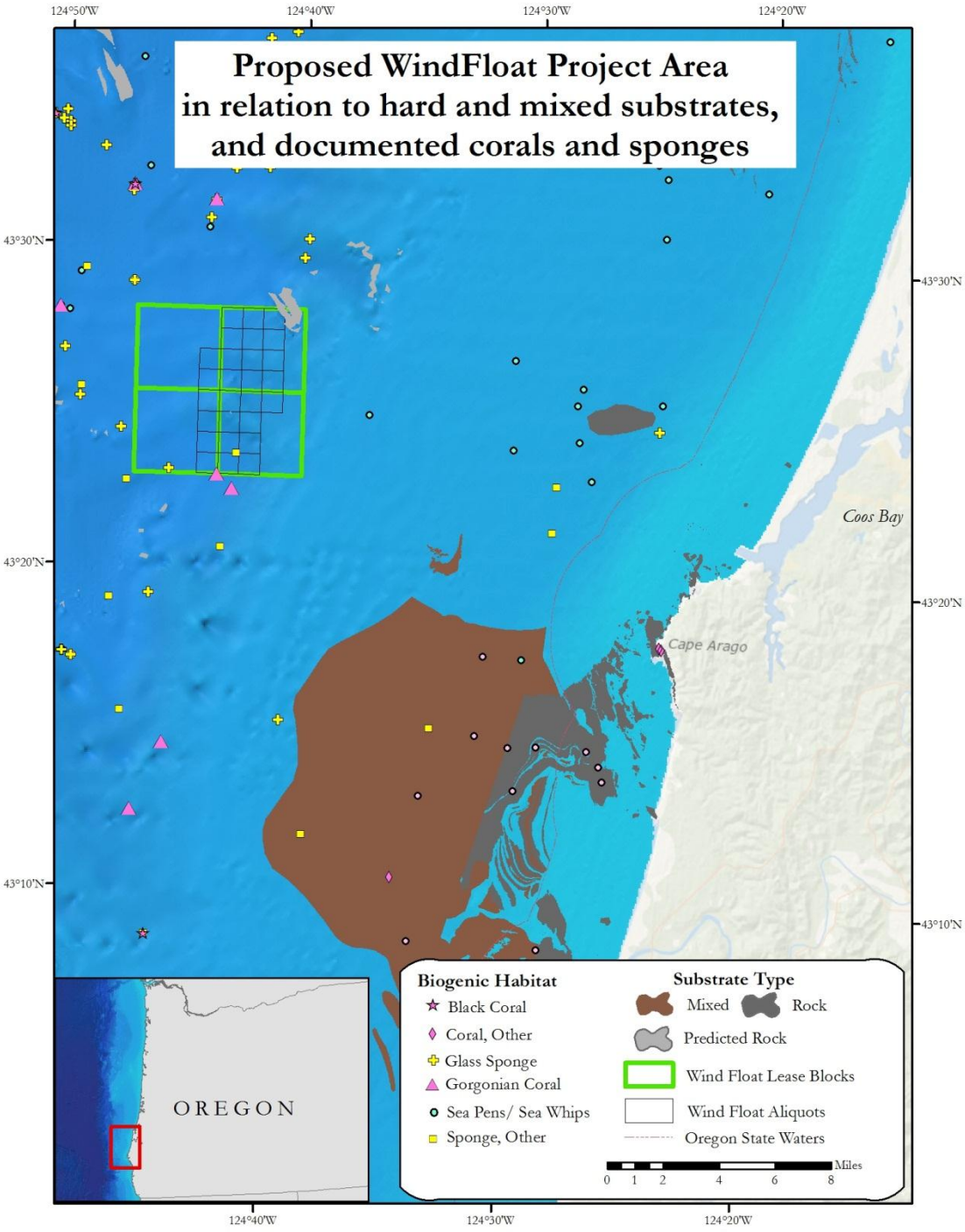


Figure 2. Proposed WindFloat project area in relation to known locations of coral and sponge and rocky reef, mixed reef and 'predicted' rocky reef habitat. Data available at: http://efh-catalog.coas.oregonstate.edu/overview/.

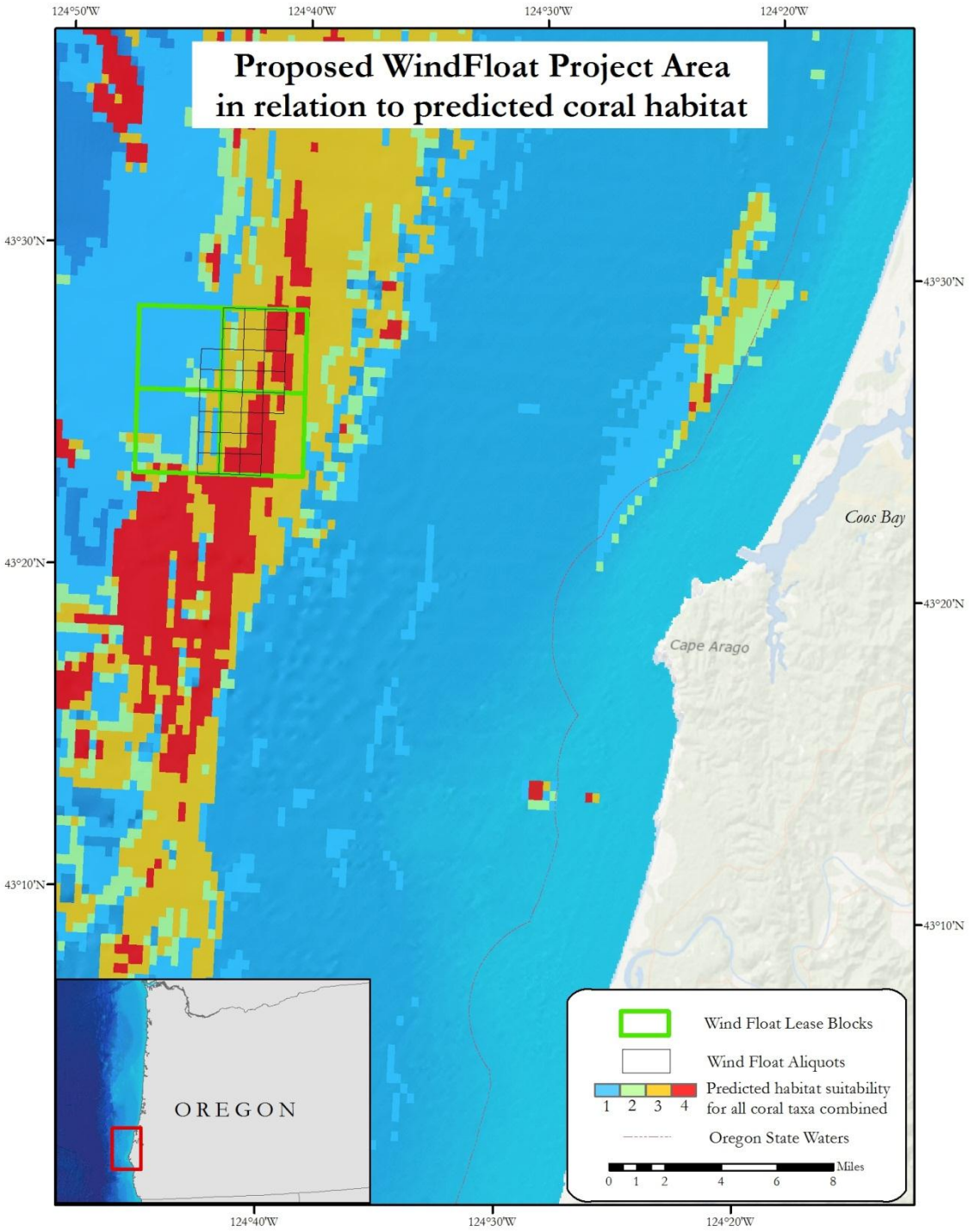


Figure 3. Proposed WindFloat project area in relation to predicted coral habitat. Data from: http://efh-catalog.coas.oregonstate.edu/overview/ See footnote 23, Guinotte and Davies 2014.

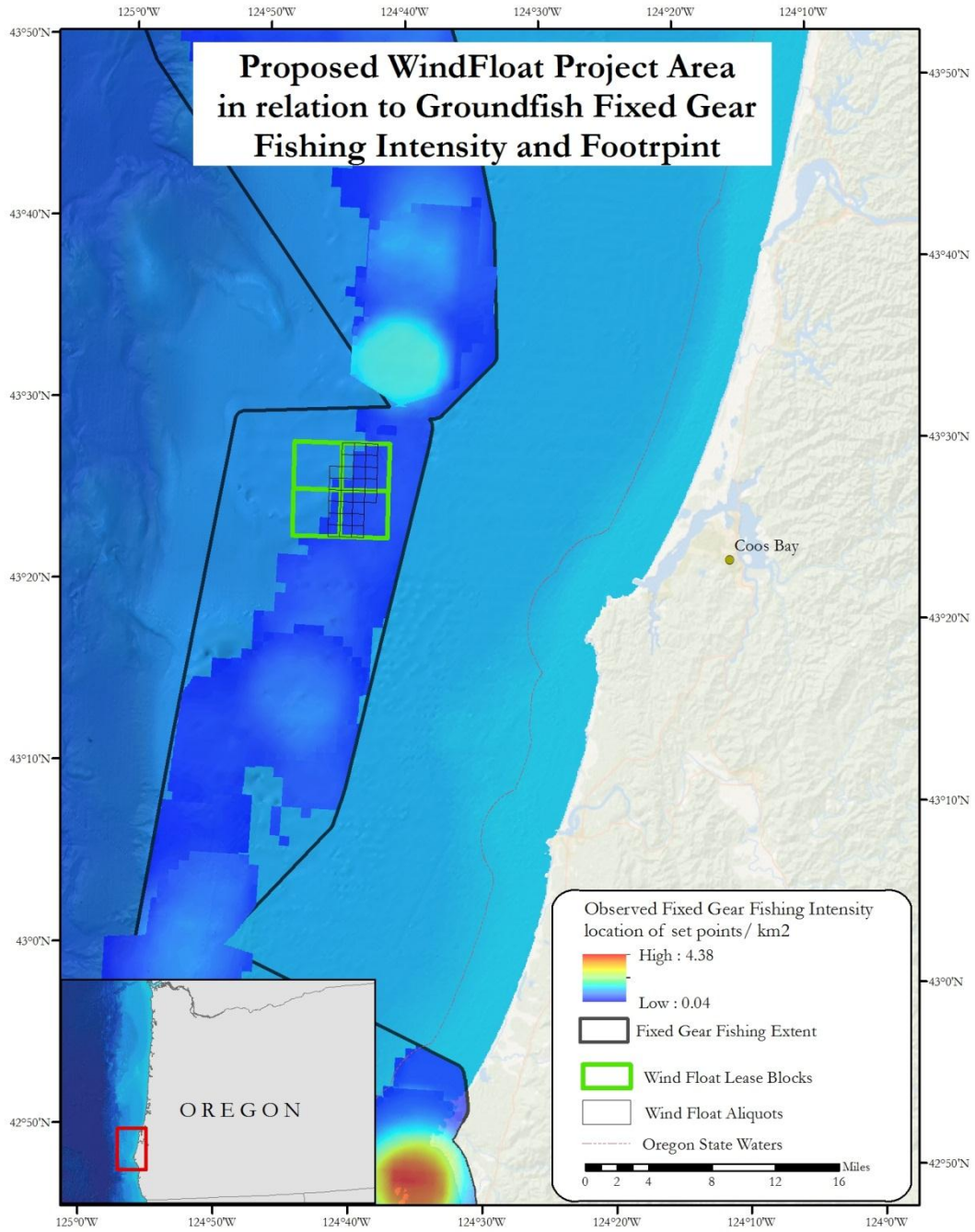


Figure 4. Example map of existing human uses in the proposed project area. Spatial data for groundfish fixed gear fishing effort available at: http://efh-catalog.coas.oregonstate.edu/overview/ Fixed gear fishing effort is buffered and omits confidential effort and the footprint or extent captures the overall groundfish effort distribution. See: Pacific Fishery Management Council. Groundfish Essential Fish Habitat Committee. Pacific Coast Groundfish 5-Year Review of Essential Fish Habitat. Report to the Pacific Fishery Management Council. Phase 1. New Information. Agenda Item H.6.b EFHRC Report 1. September 2012

PUBLIC SUBMISSION

As of: 7/30/14 7:18 PM
Received: July 28, 2014
Status: Posted
Posted: July 30, 2014
Tracking No. 1jy-8dhb-e959
Comments Due: July 28, 2014
Submission Type: Web

Docket: BOEM-2014-0050
Notice of Intent to Prepare an Environmental Assessment for Proposed Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf (OCS) Offshore Oregon and Notice of Public Scoping Meetings

Comment On: BOEM-2014-0050-0001
Environmental Assessments; Availability, etc.: Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf Offshore Oregon; Public Scoping Meetings

Document: BOEM-2014-0050-0030
Comment from Mike Stone, NA

Submitter Information

Name: Mike Stone
Address:
4005 20th Avenue West, Suite 207
Seattle, WA, 98199
Email: furygroup@aol.com
Organization: NA

General Comment

Dear Mr. Sanders:

I object to the Principle Power application for a wind farm. The proposed lease site is right in the middle of historic Pacific whiting fishing grounds of my fishing vessel. Principle Power didn't consider how its application would affect my legitimate commercial interests in the proposed lease area, didn't consult with participants in the Pacific whiting fishery before preparing its application, and selected a poor location to accommodate present dependent marine users. BOEM should conduct a full Environmental Impact Statement to assure that these impacts to my fishing operation are fully analyzed. Thank you.

Regards,

Mike Stone

Fury Group Inc.

MARINE MAMMAL COMMISSION

28 July 2014

Mr. Greg Sanders
Pacific Outer Continental Shelf Region
Bureau of Ocean Energy Management
770 Paseo Camarillo, Second Floor
Camarillo, CA 93010

Dear Mr. Sanders:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the Bureau of Ocean Energy Management's (BOEM) 29 May 2014 notice of intent to prepare an environmental assessment associated with the issuance of a lease and approval of a construction and operation plan proposed by Principle Power, Inc. Principle Power has proposed to install a wind energy demonstration facility comprised of five floating wind turbine units offshore of Coos Bay, Oregon.

The Commission commented previously on BOEM's notice of an unsolicited lease request from Principle Power (see enclosed letter of 30 October 2013). Those comments identified the marine mammal species/stocks known to occur off the Oregon coast, the risks to marine mammals from wind energy development, and information needed to assess the potential effects of the Principle Power project. The Commission made several recommendations in the letter which it believes are still relevant for consideration as BOEM moves forward on preparing an environmental assessment for the project.

In addition, the Commission is concerned that BOEM's environmental analyses for commercial leasing of wind energy areas to date have been limited to analyzing impacts associated with lease issuance and site assessment only, rather than the full life cycle of wind energy development from site assessment through construction, operation, and decommissioning. BOEM (at the time known as the Minerals Management Service) commissioned a synthesis document on the environmental effects of alternative energy development in 2007 (Michel et al. 2007), but that synthesis is no longer current regarding environmental effects, particularly given the information that has become available over the last decade on the environmental effects of construction and operation of numerous wind farms in northern Europe and China[1]. In light of the considerable efforts underway to develop wind energy resources in the Atlantic, and the current interest in developing wind energy off Oregon, an updated synthesis of the current state of knowledge regarding impacts of wind energy development is warranted. This synthesis should consider the full life cycle of development as well as the cumulative impact of wind energy development in the context of other human uses of the marine environment. Such a synthesis could help identify key data gaps and more fully guide future wind energy development, research, mitigation, and monitoring on both coasts.

[1] http://www.gwec.net/global-offshore-current-status-future-prospects/

The Commission understands that the Principle Power project is largely a demonstration project and will likely have minimal impacts as compared to a full-scale commercial wind farm. However, because the project is bypassing the initial site assessment stage and moving directly into construction and operation, a thorough review of the potential impacts of construction and operation should be undertaken. To facilitate that analysis, the Commission recommends that BOEM prepare an updated synthesis regarding the potential effects of the full life cycle of commercial wind energy development activities (leasing, site assessment, construction, operation, and decommissioning) on the U.S. Outer Continental Shelf, incorporating new information on the longer-term and cumulative effects of wind energy development on marine mammals, their habitats, and their prey species. A bibliography of scientific articles and reports published since Michel et al. (2007) is enclosed to help facilitate that analysis.

I trust these comments will be helpful. Please let me know if you or your staff have any questions with regard to this letter.

Sincerely,

Rebecca J. Lent, Ph.D.
Executive Director

Enclosures

cc: Ms. Maureen Bornholdt, BOEM Office of Renewable Energy Programs

Reference

Michel, J., H. Dunagan, C. Boring, E. Healy, W. Evans, J.M. Dean, A. McGillis, and J. Hain. 2007. Worldwide synthesis and analysis of existing information regarding environmental effects of alternative energy uses on the Outer Continental Shelf. U.S. Department of the Interior, Minerals Management Service, Herndon, VA, MMS OCS Report 2007-038. 254 pages.

Bibliography of Scientific Articles and Reports Pertaining to the Effects of Wind Energy on Marine Mammals (and selected other species) - supplementing those considered by Michel et al. 2007

Arvesen, A. and E.G. Hertwich. 2012. Environmental implications of large-scale adoption of wind power: a scenario-based life cycle assessment. Environmental Research Letters, 9 pages. (doi:10.1088/1748-9326/6/4/045102)

Bailey, H. B. Senior, D. Simmons, J. Rusin, G. Picken, and P.M. Thompson. 2010. Assessing underwater noise levels during pile-driving at an offshore windfarm and its potential effects on marine mammals. Marine Pollution Bulletin 60:888-897.

Bergström, L., L. Kautsky, T. Malm, R. Rosenberg, M. Wahlberg, N.A. Capetillo, and D. Wilhelmsson. 2014. Effects of offshore wind farms on marine wildlife−a generalized impact assessment. Environmental Research Letters 9, 12 pages. (doi:10.1088/1748-9326/9/3/034012)

Boehlert, G.W., and A.B. Gill. 2010. Environmental and ecological effects of ocean renewable energy development: A current synthesis. Oceanography 23(2):68-81.

Carstensen, J., O.D. Henriksen, and J. Teilmann. 2006. Impacts of offshore wind farm construction on harbour porpoises: acoustic monitoring of echolocation activity using porpoise detectors (T-PODs). Marine Ecology Progress Series 321:295-308.

Cobo, P., J. Kormann, and C. Ranz. 2007. Underwater noise impact off offshore wind farms during construction and operation phases. Paper presented at 14th International Congress on Sound and Vibration, Cairns, Australia, 8 pages.

Copping, A. C. Smith, L. Hanna, H. Battey, J. Whiting, M. Reed, J. Brown-Saracino, P. Gilman, and M. Massaua. 2013. Tethys: Developing a commons for understanding environmental effects of ocean renewable energy. International Journal of Marine Energy 3-4:41-51.

Dahne, M., A. Gilles, K. Lucke, V. Peschko, S. Adler, K. Krügel, J. Syndermeyer, and U. Siebert. 2013. Effects of pile-driving on harbour porpoises (*Phocoena phocoena*) at the first offshore wind farm in Germany. Environmental Research Letters 8:1-16 (025002).

Dolman, S., and M. Simmonds. 2010. Towards best environmental practice for cetacean conservation in developing Scotland's marine renewable energy. Marine Policy 34:1021-1027.

Evans, P.G.H (ed.). 2008. Proceedings of the workshop on "Offshore wind farms and marine mammals: Impacts and methodologies for assessing impacts" held at the European Cetacean Society's 21st Annual Conference, San Sebastian, Spain, April 2007, 68 pages.

Fayram, A.H., and A. de Risi. 2007. The potential compatibility of offshore wind power and fisheries: An example using bluefin tuna in the Adriatic Sea. Ocean and Coastal Management 50:597-605.

Gilles, A., S. Adler, K. Kaschner, M. Scheidat, and U. Siebert. 2011. Modelling harbour porpoise seasonal density as a function of the German Bight environment: Implications for management. Endangered Species Research 14:157-169.

Hastie, G. 2012. Tracking marine mammals around marine renewable energy devices using active sonar. SMRU Ltd. report URN:12D/328 to the Department of Energy and Climate Change (unpublished). Available at http://tethys-development.pnnl.gov/sites/default/files/publications/SMRU_2012.pdf

Lindeboom, H.J., H.J. Kouwenhoven, M.J.N. Bergman, S. Bouma, S. Brasseur, R. Daan, R.CV. Finn, D. de Haan, S. Dirksen, R. van Hal, R. Hille Ris Lambers, R. ter Hofstede, K.L. Krijgsveld, M. Leopold, and M. Scheidat. 2011. Short-term ecological effects of an offshore

wind farm in the Dutch coastal zone: a compilation. Environmental Research Letter 6:1-13. (doi:10.1088/1748-9326/6/3/035101)
Lurton, X., and S. DeRuiter. 2011. Sound radiation of seafloor-mapping echosounders in the water column, in relation to the risks posed to marine mammals. International Hydrographic Review, November 2011, 7-17.
Mann, J. and J. Teilmann. 2013. Environmental impact of wind energy: synthesis and review. Environmental Research Letters 8:1-3 (035001).
Masden, E.A. A.D. Fox, R.W. Furness, R. Bullmann, and D.T. Haydon. 2009. Cumulative impact assessments and bird/wind farm interactions: Developing a conceptual framework. Environmental Impact Assessment Review 30:1-7.
McCann, J. 2012. Developing Environmental Protocols and Modeling Tools to Support Ocean Renewable Energy and Stewardship. U.S. Dept. of the Interior, Bureau of Ocean Energy Management, Office of Renewable Energy Programs, Herndon, VA., OCS Study BOEM 2012-082, 626 pp.
McIwem, J.A.D. 2006. Likely sensitivity of bottlenose dolphins to pile-driving noise. Water and Environment Journal 20:48–54.
Normandeau Associates Inc., Exponent Inc., T. Tricas, and A. Gill. 2011. Effects of EMFs from Undersea Power Cables on Elasmobranchs and Other Marine Species. U.S. Dept. of the Interior, Bureau of Ocean Energy Management, Regulation, and Enforcement, Pacific OCS Region, Camarillo, CA. OCS Study BOEMRE 2011-09.
Pacific Energy Ventures. 2012. West Coast Environmental Protocols Framework: Baseline and Monitoring Studies. Final Report. OCS Study, BOEM 2012-013.
Portman, M. 2009. Involving the public in the impact assessment of offshore renewable energy facilities. Marine Policy 33(2):332-338.
Russell, D.J.F., S.M.J.M. Brasseur, D. Thompson, G.D. Hastie, V.M. Janik, G. Aarts, B.T. McClintock, J. Matthiopoulos, S.E.W. Moss, and B. McConnell. 2014. Marine mammals trace anthropogenic structures at sea. Current Biology 24(14):R638-R639.
Scheidat, M., J. Tougaard, S. Brasseur, J. Carstensen, T. van Polanen Petel, J. Teilmann, and P. Reijnders. 2011. Harbour porpoises (*Phocoena phocoena*) and wind farms: a case study in the Dutch North Sea. Environmental Research Letters 6:1-10 (025102).
Schick, R.S., P.N. Halpin, A.J. Read, C.K. Slay, S.D. Kraus, B.R. Mate, M.F. Baumgartner, J.J. Roberts, B.D. Best, C.P. Good, S.R. Loarie, and J.S. Clark. 2009. Striking the right balance in right whale conservation. Canadian Journal of Fisheries and Aquatic Sciences 66:1399–1403.
Simmonds, M.P. and V.C. Brown. 2010. Is there a conflict between cetacean conservation and marine renewable-energy developments? Wildlife Research 37:688-694.
Skeate, E.R., M.R. Perrow, and J.J. Gilroy. 2012. Likely effects of construction of Scroby Sands offshore wind farm on a mixed population of harbour *Phoca vitulina* and grey *Halichoerus grypus* seals. Marine Pollution Bulletin 64:872-881.
Teilmann, J., and J. Carstensen. 2012. Negative long term effects on harbour porpoises from a large scale offshore wind farm in the Baltic—evidence of slow recovery. Environmental Research Letters 7:1–10.
Thompson, P.M., G.D. Hastie, J. Nedwell, R. Barham, K.L. Brookes, L.S. Cordes, H. Bailey, and N. McLean. 2013. Framework for assessing impacts of pile-driving noise from offshore wind farm construction on a harbour seal population. Environmental Impact Assessment Review 43:73-85.
Tougaard, J., P.T. Madsen, and M. Wahlberg. 2008. Underwater noise from construction and operation of offshore wind farms. Bioacoustics 17:1-3.

Wilson, B., R.S. Batty, F. Daunt, C. Carter. 2007. Collision risks between marine renewable energy devices and mammals, fish and diving birds. Report to the Scottish Executive. Scottish Association for Marine Science, Oban, Scotland, PA37 1QA. Available at http://nora.nerc.ac.uk/504110/1/N504110CR.pdf

MARINE MAMMAL COMMISSION

30 October 2013

Ms. Jean Thurston
Renewable Energy Program Specialist
Pacific Region Office of Strategic Resources
Bureau of Ocean Energy Management
770 Paseo Camarillo, Second Floor
Camarillo, CA 93010

Dear Ms. Thurston:

The Marine Mammal Commission (MMC), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the Bureau of Ocean Energy Management's (BOEM's) 30 September 2013 notice of an unsolicited lease request from Principle Power, Inc. to acquire a commercial lease for wind energy development off Coos Bay, Oregon (78 Fed. Reg. 59968) and the associated application for a lease from Principle Power. The *Federal Register* notice includes a request for interest from other potential wind energy developers and public comments regarding the potential environmental consequences of wind energy development in the area. The MMC offers the following recommendations in response to that request.

RECOMMENDATIONS

The Marine Mammal Commission recommends that the Bureau of Ocean Energy Management—

- require Principle Power, as appropriate, to obtain authorization from the National Marine Fisheries Service under section 101(a)(5)(A) or (D) of the Marine Mammal Protection Act to take small numbers of marine mammals incidental to site characterization, construction, and maintenance activities; such authorization should stipulate minimum requirements for marine mammal mitigation, monitoring, and reporting;
- direct Principle Power to use the Bureau of Ocean Energy Management's recently issued guidelines for marine mammal biological surveys for the Atlantic Outer Continental Shelf to help guide the design and implementation of site characterization, mitigation, and post-installation monitoring for the WindFloat Pacific Offshore Wind Demonstration project;
- work with Principle Power to ensure information is also collected on marine mammal habitat use and foraging patterns in and adjacent to the proposed lease area and on physiological and behavioral responses of marine mammals to various activities at all stages of wind energy development;
- partner with other state and federal resource agencies, academic institutions, and private researchers, as well as with Principle Power, to support broad-scale, multi-year, seasonal wildlife surveys off the U.S. west coast and in all areas of established or proposed energy development; and
- work with Principle Power, the National Marine Fisheries Service, and marine mammal researchers as appropriate, to deploy an array of fixed passive acoustic recorders coast-wide

to measure the ambient sound field, detect the presence of marine mammals, and monitor changes that may occur as a result of wind energy development in the area.

BACKGROUND

Principle Power, Inc. has submitted an unsolicited request to BOEM for a commercial lease to install five semi-submersible floating wind energy turbines off the coast of Coos Bay, Oregon, as part of the WindFloat Pacific Offshore Wind Demonstration Project (WindFloat). The turbines would be sited in 300-400 m water approximately 24 km offshore. If the lease is granted, Principle Power would conduct some preliminary site characterization studies including sub-bottom profiling and wildlife (marine mammal and bird) surveys prior to submittal of a construction and operations plan (COP) in Fall 2014.

RATIONALE

The MMC supports BOEM's efforts to develop offshore wind energy as part of the Administration's goal of generating 80 percent of the nation's electricity from clean energy sources by 2035. Nevertheless, the development of wind energy sources should proceed in a thoughtful and deliberate manner with regard to its impact on the marine ecosystem, including marine mammals. Efforts to assess and reduce potential effects to marine mammals require a thorough understanding of potential risks associated with each stage of wind energy development; the collection of preliminary baseline information on marine mammal abundance, distribution, habitat use, behavior, and ecology; and monitoring of marine mammals and the marine environment throughout the life cycle of the project. The MMC offers the following rationale to support its recommendations.

Risks to marine mammals

There are 29 species and 31 stocks of marine mammals documented in waters off Oregon which could be found in or near the proposed lease area, nine of which are listed as endangered or threatened under the Endangered Species Act (ESA) (Caretta et al. 2013, Allen and Angliss 2013, see Table 1). The development of wind energy in marine areas may pose risks to some of those species and the ecosystems of which they are a part. Sound and vessel activity associated with site assessment, construction, operations, and decommissioning of wind generators can disturb marine mammals and may interfere with important activities, including foraging, resting, socializing, and migrating. Disturbance of the seafloor associated with mooring the floating turbines could affect benthic habitats and organisms. Support vessel activities pose the risk of collisions between ships and whales and also some risk of spills of fuel oil or other materials. Sound generated from wind turbine operations generally would be continuous, of low intensity, and at low frequencies (below a few kHz) (Tougaard et al. 2008), and would be transmitted directly to the water column from the turbine shaft. Playback experiments involving harbor porpoises and harbor seals prompted a distinct reaction by both species to wind-turbine sounds (Koschinski et al. 2003). Their measures, however, were of short-term effects and the extent to which these risks may reduce long-term reproduction and survival of marine mammal populations in the area has yet to be evaluated scientifically.

Table 1. Marine mammal species/stocks found in U.S. Outer Continental Shelf (OCS) waters off Oregon, and their status under the ESA

Common name	Stock	Species name	ESA Status
Pinnipeds			
California sea lion	U.S.	*Zalophus californianus*	Not listed
Guadalupe fur seal	Mexico to California	*Arctocephalus townsendi*	Threatened
Harbor seal	Oregon/Washington coast	*Phoca vitulina richardsi*	Not listed
Northern elephant seal	California breeding	*Mirounga angustirostris*	Not listed
Northern fur seal	Eastern Pacific	*Callorhinus ursinus*	Not listed
Steller sea lion	Eastern U.S.	*Eumetopias jubatus*	Not listed
Cetaceans			
Baird's beaked whale	California/Oregon/Washington	*Berardius bairdii*	Not listed
Blue whale	Eastern North Pacific	*Balaenoptera musculus*	Endangered
Common bottlenose dolphin	California/Oregon/Washington offshore	*Tursiops truncatus*	Not listed
Common dolphin, short-beaked	California/Oregon/Washington	*Delphinus delphis*	Not listed
Cuvier's beaked whale	California/Oregon/Washington	*Ziphius cavirostris*	Not listed
Dall's porpoise	California/Oregon/Washington	*Phocoenoides dalli*	Not listed
Dwarf sperm whale	California/Oregon/Washington	*Kogia sima*	Not listed
Fin whale	California/Oregon/Washington	*Balaenoptera physalus*	Endangered
Gray whale	Eastern North Pacific	*Eschrichtius robustus*	Not listed
	Western North Pacific		Endangered
Harbor porpoise	Northern California/Southern Oregon	*Phocoena phocoena*	Not listed
	Northern Oregon/Washington Coast		
Humpback whale	California/Oregon/Washington	*Megaptera novaeangliae*	Endangered
Killer whale	Eastern North Pacific Southern resident	*Orcinus orca*	Endangered
Mesoplodont beaked whale	California/Oregon/Washington	*Mesoplodon* spp.	Not listed
Minke whale	California/Oregon/Washington	*Balaenoptera acutorostrata*	Not listed
North Pacific right whale	Eastern North Pacific	*Eubalaena japonica*	Endangered
Northern right whale dolphin	California/Oregon/Washington	*Lissodelphis borealis*	Not listed
Pacific white-sided dolphin	California/Oregon/Washington	*Lagenorhynchus obliquidens*	Not listed
Pilot whale, short-finned	California/Oregon/Washington	*Globicephala macrorhynchus*	Not listed
Pygmy sperm whale	California/Oregon/Washington	*Kogia breviceps*	Not listed
Risso's dolphin	California/Oregon/Washington	*Grampus griseus*	Not listed
Sei whale	Eastern North Pacific	*Balaenoptera borealis*	Endangered
Sperm whale	California/Oregon/Washington	*Physeter macrocephalus*	Endangered
Striped dolphin	California/Oregon/Washington	*Stenella coeruleoalba*	Not listed

The most immediate risk associated with the development of Principle Power's proposed wind energy site is from site assessment activities, which would involve the use of sound-producing technologies to evaluate the sea floor and search for possible hazards. The effects of those technologies are not well understood. Some have been studied to a certain degree but others have received much less attention. For example, the potential effects of sub-bottom profilers used for geophysical surveys and to guide sub-bottom sampling have received little attention despite the fact that they generate sound source levels (201–205 dB re 1µPa at 1 m) and frequencies (0.5–24 kHz) comparable to other sound sources that are considered to pose risks to marine mammal physiology (e.g., hearing) and behavior (e.g., habitat use) (Cox et al. 2006). Scientists have conducted some preliminary modeling exercises and studies with captive animals, which suggest that exposure to sub-

bottom profilers could cause a temporary threshold shift or behavioral response if animals are below the ship (Wood et al. 2012). Other sound sources used in site characterization surveys, such as echosounders, are not expected to result in a loss of hearing or other physiological response in marine mammals (Lurton and DeRuiter 2011); however, their use may result in disturbance and ultimately stranding under certain conditions (Southall et al. 2013).

The use of active sound sources during site assessment activities and increased vessel activities at each stage of wind energy development have the potential to take marine mammals by Level A or Level B harassment, as defined under the Marine Mammal Protection Act (MMPA). Operators conducting those surveys are therefore required to seek authorization under section 101(a)(5)(A) or (D) of the MMPA to take small numbers of marine mammals incidental to those activities. For the taxa in the region of activities (see Table 1), authorization should be sought from the National Marine Fisheries Service (NMFS). Take authorizations for sound-producing activities typically include a suite of mitigation, monitoring and reporting measures with which operators must comply to prevent or reduce the adverse effects of such activities. Such measures may include ramping up the sound source to alert marine mammals that may be in the area, shutting down or powering down the sound source if marine mammals approach the source close enough to be injured, and prohibiting operations during nighttime or low-visibility conditions. To minimize the probability of vessel strikes, take authorizations may also include requirements for vessels to slow down or avoid multiple changes in direction within a certain distance from marine mammals. Activities of particular concern for marine mammals may be prohibited in sensitive areas at sensitive times, as informed by baseline monitoring and available survey information on seasonal movements.

Because activities associated with site characterization, construction, and operation of the proposed wind farm have the potential to take marine mammals by Level A or Level B harassment, the MMC recommends that BOEM require Principle Power, as appropriate, to obtain authorization from NMFS under section 101(a)(5)(A) or (D) of the MMPA to take small numbers of marine mammals incidental to site characterization, construction, and maintenance activities. Such authorization should stipulate minimum requirements for marine mammal mitigation, monitoring, and reporting.

Data needed to assess potential effects of wind energy development

As noted above, the potential long-term effects of site assessment, construction, and operation of wind farms on marine mammal reproduction and survival are not yet well understood. A thorough evaluation of the effects of wind energy development will depend on the availability of biological and environmental information collected prior to leasing activities (i.e., baseline information), during construction and operation, and through decommissioning. Research and information is also needed regarding physiological and behavioral responses of marine mammals and their prey to wind energy development. At a minimum, the information should be sufficient to demonstrate that the proposed activities are not likely to harm or damage natural resources, including marine mammals, ESA-listed species, and ESA-designated critical habitat (30 C.F.R. § 585.801). Ideally, it should be collected at temporal and spatial scales sufficient to characterize the inherent variability in potentially affected ecosystems and to distinguish the effects of energy development from that variability.

Biological information needed to assess status and vulnerability of marine mammals to short- and long-term effects includes stock structure, distribution and seasonal movements, abundance and trends, and vital rates (e.g., survival, reproduction, emigration, immigration). It would also require additional information on marine mammal habitat-use and foraging patterns. The collection of such information requires both a near and long-term commitment of effort and resources to provide the knowledge needed to detect adverse effects associated with energy development and provide a strong foundation for responsible management of marine ecosystems.

Information is also needed regarding the physiological and behavioral responses of marine mammals to wind energy development activities. To date such research has focused primarily on short-term effects of construction activities due to the relatively recent expansion of this emerging technology into offshore waters. Mitigation measures to protect marine mammals from injury and disturbance have been developed and implemented for many projects, but the effectiveness of those measures has yet to be determined. Additional research and monitoring is needed to determine short- and long-term effects of various types of wind energy development activities and the effectiveness of mitigation measures, especially when those activities employ new technologies such as the floating platforms proposed for the WindFloat project.

The responsibility for data collection to assess baseline conditions and the potential effects of renewable energy development projects on marine mammals and the marine environment lies primarily with the regulated industry, with supplementary financial support and technical guidance from BOEM to ensure that the data collected are of sufficient quality, duration, and scale to assess adverse effects. Principle Power has acknowledged its responsibility to conduct baseline wildlife surveys and post-installation monitoring, with a focus on key environmental issues identified in a report by Pacific Energy Ventures (2012) as likely to drive the permitting process for wind energy projects off the U.S. west coast. These include the potential for wind platforms to affect the near-field habitat and sediments, to create a collision risk for marine mammals, and to affect whale migration; also of concern is the potential for vessel interactions with marine mammals during platform installation and maintenance. The MMC supports Principle Power's plan to conduct pre-installation wildlife surveys in order to collect baseline information on marine mammal abundance and distribution and to conduct post-installation monitoring. However, it is important also to collect, or support collection by others, of habitat use and foraging data, and to also collect information on responses of marine mammals to various activities at all stages of development.

BOEM has issued various sets of guidelines specifying information requirements for submittal of site assessment plans (SAPs) and COPs for renewable energy projects.[1] The marine mammal and sea turtle guidelines outline basic data collection requirements and procedures for planning and conducting marine mammal biological surveys.[2] Those guidelines were originally written for renewable energy development on the Atlantic OCS, but are relevant to site characterization surveys on the Pacific OCS, as well as mitigation and post-installation monitoring. As such, the MMC recommends that BOEM direct Principle Power to use BOEM's recently issued guidelines for marine mammal biological surveys for the Atlantic OCS to help guide the design and

[1] http://www.boem.gov/Regulatory-Development-Policy-and-Guidelines/
[2] http://www.boem.gov/uploadedFiles/BOEM/Renewable_Energy_Program/Regulatory_Information/BOEM_Renewable_MMandST_Guidelines.pdf

implementation of site characterization, mitigation, and post-installation monitoring of the WindFloat project.

In addition to collecting data in the specific areas of focus laid out in the 2012 Pacific Energy Ventures report, the MMC recommends that BOEM work with Principle Power to ensure information is also collected on marine mammal habitat use and foraging patterns in and adjacent to the proposed lease area and on physiological and behavioral responses of marine mammals to various activities at all stages of wind energy development.

The MMC recognizes that for small-scale demonstration projects, such as the one proposed by Principle Power, the extent of information required to conduct a thorough evaluation of potential effects may exceed available resources and capabilities, especially for species or populations whose distribution extends beyond the area of potential effects. State and federal resource agencies (such as the Oregon Department of Fish and Wildlife, NMFS, and the Department of Energy) as well as university and private research entities (such as Oregon State University and Cascadia Research Collective) are also collecting or could contribute to the collection of information that would be useful in assessing marine mammal populations off the west coast. To facilitate a thorough collection of information both within the area of potential effect and in adjacent waters, the MMC recommends that BOEM partner with other state and federal resource agencies, academic institutions, and private researchers, as well as with Principle Power, to support broad-scale, multi-year, seasonal wildlife surveys off the U.S. west coast and in all areas of established or proposed energy development.

To complement aerial and ship surveys, BOEM should also consider supporting coast-wide acoustic monitoring of marine mammals and ambient sound levels. Fixed acoustic recorders deployed year-round would supplement data from periodic visual surveys. Fixed passive acoustic recorders can detect vocalizing marine mammals by species in all hours, seasons and sea states, and can be deployed over longer time frames and at lower costs than visual surveys or mobile, towed acoustic arrays (Clark 1995, Mellinger et al. 2007). Acoustic recordings have been used to estimate the abundance and, in some cases, the density of marine mammals (Van Parijs et al. 2002, Marques et al. 2009, Marques et al. 2013). Fixed recorders also can be used to measure underwater ambient sound levels (Roth et al. 2012), which is critical for establishing baseline sound levels prior to the introduction of additional sound sources. For all these reasons, the MMC recommends that BOEM work with Principle Power, NMFS, and marine mammal researchers as appropriate, to deploy an array of fixed passive acoustic recorders coast-wide to measure the ambient sound field, detect the presence of marine mammals, and monitor changes that may occur as a result of wind energy development in the area.

The MMC hopes that you find these recommendations and comments helpful. Please contact me if you have questions or if the MMC can be of assistance as you consider these matters.

Sincerely,

Rebecca J. Lent, Ph.D.
Executive Director

cc: Ms. Donna Wieting, NMFS Office of Protected Resources, Silver Spring, MD
Mr. Chris Yates, NMFS West Coast Regional Office, Long Beach, CA

References

Allen, B.M., and R.P. Angliss. 2013. Alaska marine mammal stock assessments, 2012. NOAA Technical Memorandum NMFS-AFSC-245, 282 pages.

Caretta, J.V., E. Oleson, D.W. Weller, A.R. Lang, K.A. Forney, J. Baker, B. Hanson, K. Martien, M. M. Muto, M.S. Lowry, J. Barlow, D. Lynch, L. Carswell, R.L. Brownell Jr., D.K. Mattila, and M.C. Hill. 2013. U.S. Pacific marine mammal stock assessments: 2012. NOAA Technical Memorandum NMFS-SWFSC-504, 378 pages.

Clark, C.W. 1995. Application of U.S. Navy underwater hydrophone arrays for scientific research on whales. Scientific Report, International Whaling Commission 44:210–213.

Cox, T.M., T.J. Ragen, A.J. Read, E. Vos, R.W. Baird, K. Balcomb, J. Barlow, J. Caldwell, T. Cranford, L. Crum, A. D'Amico, G. D'Spain, A. Fernandez, J. Finneran, R. Gentry, W. Gerth, F. Gulland, J. Hildebrand, D. Houser, T. Hullar, P.D. Jepson, D. Ketten, C.D. MacLeod, P. Miller, S. Moore, D.C. Mountain, D. Palka, P. Ponganis, S. Rommel, T. Rowles, B. Taylor, P. Tyack, D. Wartzok, R. Gisiner, J. Mead, L. Benner. 2006. Understanding the impacts of anthropogenic sound on beaked whales. Journal of Cetacean Research and Management 7(3):177–187.

Koschinski, S., B.M. Culik, O.D. Henriksen, N. Tregenza, G. Ellis, C. Jansen, and G. Kathe. 2003. Behavioural reactions of free-ranging porpoises and seals to the noise of a simulated 2 MW windpower generator. Marine Ecology Progress Series 265:263–273.

Lurton, X., and S. DeRuiter. 2011. Sound radiation of seafloor-mapping echosounders in the water column, in relation to the risks posed to marine mammals. International Hydrographic Review, November 2011, 7-17.

Marques, T., L. Thomas, J. Ward, N. DiMarzio, and P.L. Tyack. 2009. Estimating cetacean population density using fixed passive acoustic sensors: An example with Blainville's beaked whales. Journal of the Acoustical Society of America 125(4):1982–1994.

Marques, T.A., L. Thomas, S.W. Martin, D.K. Mellinger, J.A. Ward, D.J. Moretti, D. Harris, and P.L. Tyack. 2013. Estimating animal population density using passive acoustics. Biological Reviews 88:287-309.

Mellinger, D.K., K.M. Stafford, S.E. Moore, R.P. Dziak, and H. Matsumoto. 2007. An overview of fixed passive acoustic observation methods for cetaceans. Oceanography 20(4):36–45.

Pacific Energy Ventures. 2012. West Coast environmental protocols framework: baseline and monitoring studies. Final Report. BOEM OCS Study 2012-013, 307 pages. Available at http://mhk.pnnl.gov/wiki/images/7/73/PEV_2012.pdf

Roth, E.H., J.A. Hildebrand, S.M. Wiggins, and D. Ross. 2012. Underwater ambient noise on the Chukchi Sea continental slope from 2006–2009. Journal of the Acoustical Society of America 131(1):104–110.

Southall, B.L., Rowles, T., Gulland, F., Baird, R.W., and Jepson, P.D. 2013. Final report of the Independent Scientific Review Panel investigating potential contributing factors to a 2008 mass stranding of melon-headed whales (*Peponocephala electra*) in Antsohihy, Madagascar, 75 pages. Available at http://iwc.int/cache/downloads/4b0mkc030sg0gogkg8kog4o4w/Madagascar%20ISRP%20FINAL%20REPORT.pdf

Tougaard, J., P.T. Madsen, and M. Wahlberg. 2008. Underwater noise from construction and operation of offshore wind farms. Bioacoustics 17:1–3.

Van Parijs, S.M., J. Smith, and P.J. Corkeron. 2002. Using calls to estimate the abundance of inshore dolphins: a case study with Pacific humpback dolphins *Sousa chinensis*. Journal of Applied Ecology 39:853–864.

Wood, J., B.L., Southall, and D.J. Tollit. 2012. PG&E offshore 3-D Seismic Survey Project Environmental Impact Report – Marine Mammal Technical Draft Report. SMRU Ltd, 121 pages. Available at http://www.coastal.ca.gov/energy/seismic/mm-technical-report-EIR.pdf

AOC | Association of Oregon Counties

July 28, 2014

Bureau of Ocean Energy Management (BOEM)
Department of the Interior (DOI)

Sent via www.regulations.gov

RE: Comments in response to the
Notice of Intent to Prepare an Environmental Assessment for Proposed Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf (OCS) Offshore Oregon and Notice of Public Scoping Meetings, BOEM docket BOEM-2014-0050

The process by which wind energy leases on the Outer Continental Shelf (OCS) are granted by BOEM is fundamentally broken. The process leads directly to unnecessary and harmful conflicts. The proposed lease to Principle Power that is the subject of this proceeding proves that point. The federal government needs to fix the process. There are specific actions that can and should be taken by BOEM and Congress.

Principle Power seeks to install a demonstration wind power project on the Pacific OCS. They have been selected for federal subsidy, the only such project in the Pacific OCS. Principle Power opted to locate their project near Coos Bay, Oregon. In order to determine a specific location, Principle Power consulted with a number of groups, including local fishermen. After that consultation, a specific location was chosen by Principle Power, which has become the subject of this proceeding.

Here's the problem: The specific area chosen is a high value area for the Pacific Whiting fishery, which is primarily based out of ports other than Coos Bay. Thus, a huge conflict is now brewing.

Here's the solution: (1) The federal government must do a comprehensive inventory of the current uses and environment within the OCS (like the State of Oregon has already done for the Territorial Sea); and (2) Congress needs to amend federal law to specifically require that BOEM and all developers of wind projects on the OCS first consult with the OCS inventory before any projects are applied for or authorized.

Sincerely,

Rob Bovett
AOC Legal Counsel
rbovett@aocweb.org

ec: United States Senator Ron Wyden, c/o Molly McCarthy Skundrick, Field Representative
United States Senator Jeff Merkley, c/o Dan Whelan, Field Representative

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oregon Fish and Wildlife Office
2600 SE 98th Avenue, Suite 100
Portland, Oregon 97266
Phone: (503) 231-6179 FAX: (503) 231-6195

Reply To: 7931.001
File Name: WindFloat NOI comments
TAILS: 01EOFW00-2014-CPA-0074
TS Number: 14-679
DOC Type: I

JUL 28 2014

Memorandum

To: Greg Sanders, Office of Environment, Bureau of Ocean Energy Management
Camarillo, CA

From: State Supervisor, Oregon Fish and Wildlife Office
FOR Portland, OR

Subject: Comments on Notice of Intent to Prepare an Environmental Assessment for Proposed Wind Energy-Related Development Activities near Coos Bay, Oregon

The Fish and Wildlife Service (Service), including representation from Ecological Services and Migratory Bird programs from Regional, Oregon State, and Roseburg Field offices, have reviewed the Bureau of Ocean Energy Management's (BOEM) Notice of Intent (NOI) to Prepare an Environmental Assessment (EA) in response to a proposal to construct and operate an offshore wind energy-related development, near Coos Bay, Oregon. The offshore wind development (WindFloat Pacific Project, or Project hereafter) was proposed on May 14, 2013 (Proposal), by Principle Power of Seattle, Washington, and would be comprised of five floating wind towers, associated underwater mooring cables, and an underwater electrical transmission cable to deliver Project power to an onshore location. Principle Power further described the proposed Project, and how it would be managed into the future, in their Proposal. The NOI provides no additional information on the EA's Proposed Action, except to indicate it will include the actions described in the Proposal.

The Service supports renewable energy and the economic and environmental benefits that wind energy generation brings to local and worldwide communities. We also recognize wind power development has the potential to impact wildlife and habitat resources. We therefore submit the following comments and recommendations under the authorities of the National Environmental Policy Act (42 U.S.C. § 4321 *et seq.*), the Migratory Bird Treaty Act, as amended, (16 U.S.C. § 703, hereafter MBTA), the Endangered Species Act of 1973, as amended, (16 U.S.C. § 1531 *et seq.*, hereafter ESA), and the Fish and Wildlife Coordination Act (48 Stat. 401), as amended, (16 U.S.C. § 661 *et seq.*).

Federal departments and agencies have been directed to take certain actions to further implement the MBTA (Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds). The Minerals Management Service (the precursor to BOEM) entered into an EO 13186 Memorandum of Understanding (MOU) with the Service. This MOU, signed by our agencies in June 2009, obligated our agencies to strengthen migratory bird conservation through enhanced collaboration and to work together to reduce negative impacts of resource development projects, such as the proposed offshore wind project, on migratory birds. Per our MOU, impacts to migratory birds should be considered during all phases of the project including during siting evaluation, project planning, construction, operation, and decommissioning of an offshore energy facility[1].

Our comments and recommendations are presented below, by NOI section.

Section 2. Purpose and Need

Neither the Proposal nor the NOI clearly discuss the Project's plans of operation. Please expand this section to describe BOEM's authority and regulations to ensure implementation of the final construction and operation plans, including jurisdiction over any necessary adaptive management actions, for the life of Project operations and through any changes in Project ownership.

Section 3. Proposed Action and Scope of Analysis

The Service is concerned with potential for Project operational impacts to offshore migratory birds, especially due to collisions, false attraction, and displacement. To assist BOEM and the Project applicant in development of a research, monitoring, and adaptive management program, the Service has developed a document which describes these concerns and recommends approaches (Attachment).

From the Service's extensive onshore wind experience, a wind project's ability to address unexpected, future migratory bird and ESA species impacts is limited during the operational phase. This is especially problematic where project-related research and monitoring programs have not been established or are not designed in context of an adaptive management program. Further complications arise where a pre-NEPA or pre-permit power purchase agreement (PPA) restricts potential future adaptive responses to operational impacts (e.g., due to restrictions in the PPA, curtailment of wind project operations during high impact mortality events is not allowed), or changes in project ownership result in different operation or management approaches.

We believe the NOI's Proposed Action does not clearly describe how the Project and/or BOEM will retain discretion during long-term Project operations, or be responsible for implementing a

[1] The June 2009 MOU between MMS and Service indicated that MMS (BOEM) shall (***emphasis added below***): Integrate migratory bird conservation principles, as well as reasonable and feasible conservation measures and management practices into MMS approvals, procedures and practices consistent with the Council on Environmental Quality's (CEQ) regulations, and Departmental and Bureau guidelines and procedures. Prior to issuing authorizations, the MMS will consult guidelines that exist at that time and consider conservation measures that are relevant, appropriate and feasible for proposed projects during siting, construction, and operations. ***Examples could include modifications*** to lighting on structures or ***periods of turbine operations. These measures would be designed to decrease the likelihood of bird collisions*** and would be consistent with such best management practices as exist at that time. Other measures could include conducting aerial surveys to determine areas of high bird concentrations during all seasons of the year and avoiding disturbance of nesting beaches during nesting season.

Research, Monitoring, and Adaptive Management program, regardless of a pre-existing PPA or changes in Project ownership in the future. The NOI seems to infer that a research, monitoring, and adaptive management program is part of the "floating wind energy demonstration facility", however, the Proposal is unclear as to how the Proposed Action would integrate research and monitoring into Project design, construction, and operation. The Proposal also appears to indicate a potential inability to implement certain adaptive management program actions (e.g., curtailment of operations in response to mortality events) when it states (Introduction, page 1, *emphasis added*) that Principle Power intends to sign a PPA "*with a term and price sufficient that would meet the economic needs of the Windfloat Pacific Project*". Additional uncertainty as to future implementation of an effective adaptive management program is presented in the Proposal (Financial Capability, page 38) when describing how future ownership and management of the Project may change: "... *Principle Power is not, and does not intend to be, a project owner, an outside developer/project owner will meet the balance of the project's budget.*"

During numerous meetings between the Service, BOEM, and the applicant, the Service has clearly stated the need, for MBTA and ESA purposes, to include the research, monitoring, and adaptive management program, as well as description of BOEM's discretion to implement a long-term, effective adaptive management program, as part of the Project's proposed action. If these key components are not part of BOEM's proposed action in the Biological Assessment for ESA consultation, the Service will likely find the BA insufficient for initiation of ESA consultation[2]. These uncertainties regarding the research, monitoring, and adaptive management program, as well as BOEM's long-term discretion over the Project to ensure the effective implementation of this research, monitoring, and adaptive management program, regardless of future Project ownership, should be addressed and clarified via development of a new "Floating Wind Energy Demonstration Facility Alternative" in the EA. This new alternative should clearly describe the Project's and BOEM's commitments to undertake research, monitoring, and effective adaptive management actions (including operational modifications if necessary) as part of the overall NEPA Project action. Alternatively, the NOI's Proposed Action could be expanded in the EA to fully incorporate all research, monitoring, and effective adaptive management commitments (including operational modifications).

5. Cooperating Agencies

Because of the Service's authorities as well as special expertise, the Service requests Cooperating Agency status in preparation of the Project's NEPA documentation. The Service anticipates strong reliance on the expertise of the Oregon Department of Fish and Wildlife as well as National Marine Fisheries Service during the Service's participation as a Cooperating Agency. The Oregon Fish and Wildlife Office, Portland, will be the Service's lead contact for issues associated with cooperating agency status.

[2] The NOI states in part 4, Other Environmental Review and Consultation Processes, that "The analyses contained within the EA also will support compliance with other environmental statutes...". If BOEM anticipates the EA will also serve as the Biological Assessment for initiating ESA consultation, it becomes imperative that the EA fully describes the research, monitoring, and adaptive management program, as well as BOEM's long-term jurisdiction to implement adaptive management actions, including (if necessary) curtailment of operations, during the Project's long-term operations.

Conclusion

The Service is supportive of renewable energy projects and looks forward to collaborating with BOEM, Project sponsors, and other stakeholders in designing and implementing a "floating wind energy demonstration facility" near Coos Bay, Oregon. As our knowledge evolves regarding the Project and its effects on wildlife, we anticipate and appreciate the opportunity to provide additional input and recommendations. As provided above, our comments reflect the underlying uncertainty of who will own and operate the Project in the future, what the research, monitoring, and adaptive management program will be, and how BOEM will retain discretion over the Project's operational management decisions to ensure future adaptive management will be adequate and effective. We therefore recommend either the identification of a new "Floating Wind Energy Demonstration Facility" alternative in the Environmental Assessment that fully incorporates Project and BOEM commitments to undertake research, monitoring, and adaptive management actions, or revision of the Proposed Action to fully incorporate research, monitoring, and adaptive management commitments.

If you have any questions, please contact Doug Young (503-231-6179), Roberta Swift (503-213-2105), Jim Thrailkill (541-957-3474) or Stefanie Stavrakis (503-231-2262).

Attachment

cc:
Principle Power, Seattle, WA (K. Banister)
FWS, Portland, OR (R. Swift; S. Stavrakis)
FWS, Roseburg, OR (J. Thrailkill)
NOAA Fisheries, Portland, OR (K. Hatfield)
ODFW, Newport, OR (D. Kelley)

Attachment

U.S. Fish and Wildlife Service recommendations for a migratory bird research, monitoring, and adaptive management program: WindFloat Project

Introduction:

The U.S. Fish and Wildlife Service (Service) has the statutory authority and responsibility for enforcing the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-711) and is the lead Federal agency for managing and conserving migratory birds in the U.S. and its territories. Through this responsibility we have the conservation obligation to evaluate potential local, regional, and cumulative impacts to Species of Concern that may be adversely affected by various development activities. Other Federal departments and agencies have been directed to take certain actions to further implement the MBTA (Executive Order 13186) and in fact, USFWS entered into a Memo of Understanding (MOU) with the Minerals Management Service, the precursor to Bureau of Ocean Energy Management (BOEM) developed in accordance with EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds. This MOU, signed in June 2009, obligated the two agencies to strengthen migratory bird conservation through enhanced collaboration and to work together to reduce negative impacts of resource development projects on migratory birds. It obligated MMS (BOEM) to integrate migratory bird conservation principles, as well as reasonable and feasible conservation measures and management practices into MMS approvals, procedures and practices consistent with the Council on Environmental Quality's (CEQ) regulations, and Departmental and Bureau guidelines and procedures. These MOU's have five-year life spans to allow them to remain up to date on current issues, thus we are in the process of working with BOEM to update this MOU. Impacts to migratory birds should be considered during all phases of the project including during siting evaluation, project planning, construction, operation, and decommissioning of an offshore energy facility.

The MOU cited above, required that MMS (BOEM) consult guidelines that exist at the time and consider conservation measures that are relevant, appropriate, and feasible for proposed projects during siting, construction and operations prior to issuing authorizations. The Service is currently developing offshore energy guidelines to assist project proponents in planning offshore energy developments to avoid and minimize impacts to birds and bats. Until these guidelines are finalized, we offer the following general recommendations for the risk assessment, reduction, and monitoring and adaptive management for migratory birds by wind power development, with special considerations for the WindFloat Project (Project) planned off Coos Bay, Oregon. The process through which Project proponents should navigate to consider effects on migratory birds is a step-wise approach using stressor management to identify Project-related impacts and solutions that will avoid, minimize, and reduce impacts over time.

We recognize that climate change has potentially devastating impacts upon migratory birds and the resources upon which they depend. The development of alternative energy sources that do

not emit carbon dioxide or other greenhouse gases could benefit migratory birds by reducing the magnitude or effects of global climate change. Therefore we are committed to working collaboratively with BOEM under the MOU to consider and reduce impacts of the design, construction, operations and maintenance phases of the Project on migratory birds.

We are concerned that the proposed action may impact migratory birds, seabirds, shorebirds, and sea ducks, which are protected under the MBTA. Migratory bird species of concern that may occur in the Windfloat project area are listed at the end of this document. This list is not all-inclusive; other species of birds do occur in the Project area and even common birds should be considered when assessing risk and risk reduction measures. Several endangered species also occur in the Project area. In addition, the ocean is a dynamic environment, and new species may use the area at any time, while others depart. Collaboration in an adaptive management approach, which includes BOEM's ability to implement corrective operational and mitigative actions, as necessary, will help address this constantly changing landscape.

Minimizing impacts to migratory birds should be done using a stepwise process which includes actions taken before and after construction of the project. During planning, the Project proponent should identify stressors to birds by "deconstructing" the Project components and activities, identifying conservation measures, conducting Project-scale pre-construction assessments, and conducting risk analysis for each stressor and species that may be affected. After construction and during operation, the Project proponent should conduct Project-scale post-construction assessments and use adaptive management approach to ensure that measures taken reduce impacts.

Analyzing Impacts from Offshore Development

Direct and indirect impacts from offshore energy can be influenced by several factors, including:

- The type of hazard created by the construction, operation, and maintenance of the various types of offshore energy development;
- The vulnerability of birds to the hazards;
    - Spatial and temporal distribution of species
    - The variation in ocean dynamics that "attract" species (e.g., seasonal and daily changes)
    - Behavioral traits that create risk from a hazard (e.g., light height, foraging style, migration patterns, etc.)
- Exposure risk of species present (i.e., the interaction between project-related hazards and birds or the resources upon which they depend);
- Geographical differences (e.g., Great Lakes vs. Gulf of Mexico vs. N. Atlantic vs. S. Atlantic vs. Pacific coasts vs. Pacific Islands, etc.); and
- Influence of weather patterns and climate change on exposure risk (e.g., prevalence of fog, storm patterns and intensities, ocean acidity, warming waters, etc.).

Stressor Management Approach

To develop low impact offshore energy facilities, project proponents should focus on managing impacts during siting, construction, operation, and maintenance activities. To manage impacts, project proponents should link cause and effect relationships between project activities and species of concern resource needs using a Stressor Management approach. Stressor management is a proactive approach for identifying project-related stressors and pre-development conservation measures to address impacts, as opposed to managing the consequences (i.e., effects) after they occur. This approach should be conducted in coordination with federal and state agencies to ensure all appropriate information is considered and proposed in permitting and compliance documents prior to project construction and operations.

The first step in the stressor management approach is to identify project-related impacts. This is accomplished by "deconstructing" the project down into all of the activities and components required to complete and operate the project. The next step is to predict the impacts associated with each step of the development and operation of the facility, and then implement measures to avoid or minimize any predicted adverse impacts. Sequential evaluation of impacts should allow for a more efficient mitigation process and promote an adaptive management approach to reducing impacts. Proponents should work with federal and state agencies when "deconstructing" and assessing the project. Conservation Measures (CMs) addressing stressors found to likely have an effect on species of concern can be developed and targeted to reduce or eliminate impacts.

Stressors are defined as any *alteration of* or *addition to* the environment that has an impact on species of concern or their resources. Understanding how species of concern and the resources that they depend upon are exposed and respond to stressors allows the proponent to identify the effects of the action. If an activity does not produce any stressors then there would be no impact from that activity. In addition, if a species of concern does not respond in any manner to a stressor when it or its resources are exposed to it, then the action has no effect. Conservation Measures addressing stressors found to likely have an effect on species of concern can be developed and targeted to reduce or eliminate impacts. CMs are any action undertaken to address project related stressors/impacts. CMs can also be referred to as best management practices or mitigation measures. CMs can be focused on ecological/habitat impacts or direct bird mortality. The goal of CMs is to avoid the impact all together, minimize the impact, reduce the impact over time, rectify the impact, or compensate for the impact.

Step-wise Approach to Offshore Energy Development

The USFWS recommends a step-wise approach to offshore energy development which includes Preliminary Project Siting/site assessments, Project Scale Pre-construction Assessment, Stressor Identification through project deconstruction, and Risk analysis. Before construction, CMs should be developed, and then implemented during project operation. Project-scale, post-

construction assessments will help us understand how offshore energy development actually impacts species of concern or their resources.

Preliminary Project Siting/Site Assessments

Project siting should be a rigorous process, where the agency identifying project concentration areas, or project proponents selecting specific project sites gather and synthesize all existing information to help inform early siting decisions. Appropriate data to gather may include:

1. Existing bird distribution and abundance data
2. Existing information on oceanographic features that may congregate birds in an area
3. Known migration corridors and terrestrial features that may funnel birds through specific areas
4. Designated areas for protection (both on land and offshore) or conservation investment
5. Current regional spatial plans (including current offshore use and development)

Pre-construction assessments

Regional Scale Assessments

In order to understand bird-specific considerations, we must first have knowledge of which birds occur in the project area. Pre-construction avian monitoring as well as surveys and research conducted prior to project construction can provide this body of knowledge. Below is a list of documents and publications that include information about bird distributions off the coast of Oregon and should be used to inform this process.

The first and best opportunity to avoid effects of offshore wind developments is during the siting stage. Siting of offshore energy projects that avoid areas of high resource value is currently the most effective conservation strategy for avoiding project-related impacts. Large scale regional spatial planning efforts can collect baseline information and identify avian "hot spots" to be avoided for development in order to reduce impacts to birds.

Regional spatial planning efforts should establish a migratory bird baseline and provide a biological context for species distribution and abundance patterns observed across a wide area, and identify "hot spots" to be avoided by wind power developments. In general to identify important use areas for birds, regional scale assessments should answer the following questions:

- Where are the birds?
- What species are present?
- What is the conservation status of the species present?
- How many birds are in the area (i.e., individuals, small flocks, or large concentrations)?

- When they are there (part or all of life-cycle, seasonally, annually, year-round, intermittently)?
- How are they using the area (e.g., foraging, commuting, migrating, wintering, breeding, etc.)?
- Why are they there (habitat features, migration funnel, food resources, proximity to breeding colonies, other attraction features)?
- Where are foraging/commuting pathways, migratory corridors, crossover areas, preferred rafting/roosting areas?
- What is the behavior of a hot spot – turnover, peak seasonal use, attraction features?
- Typical weather patterns for these areas (e.g., fog, marine layer, etc.)
- Regional assessments should consider oceanographic features, weather patterns, adjacent land features, species conservation status, and the relative importance that a project area holds for the national population of a species.

Assessment Methods

Due to the natural annual variation, regional-scale surveys should cover all seasons to collect data that informs current bird abundance and distribution during the breeding, winter, and migration periods over several years. These assessments, if done consistently, may help identify variation in distribution, abundance, and behaviors influenced by season and weather conditions. Long-term regional assessments that develop a data set can be used for biological context of project-specific pre- and post-construction assessments.

Methods should include the best available technologies to accurately identify and understand how "hotspots" change over time. Methods may include (but are not limited to) boat surveys, aerial surveys with observers, aerial surveys using video, radar, thermal imagery, LIDAR, acoustic, or other Best Available Technologies (BATs), and interpretation of historical or other available data. Boat-based surveys are a common method used to assess seabird occurrence and behavior at sea but multiple techniques should be used and can include aerial and boat-based surveys, and tagging with satellite tags, nano-tag technology to describe avian habitat use in the project area, among others. Radar and acoustic technologies are likely to provide reliable data for nocturnal migrants.

In the case of the Windfloat Project, the chosen lease blocks are on the slope of the continental shelf. Though fairly far offshore (16—18 miles), and therefore out of range of many nearshore bird species, pelagic species such as albatrosses and shearwaters frequent this site of upwelling and productivity. In addition, aspects of the project, such as horizontal direction drilling, could affect nearshore and coastal areas. Since there has been no integrated large scale spatial planning effort for offshore wind power off siting off Oregon, we have missed the opportunity for large scale planning prior to this project. But opportunities could still exist to minimize impacts to birds by siting the projects within its lease block, or selecting cable routes with lower impacts.

Project-scale Pre-construction Avian Assessments

Site specific seabird monitoring for at least three years prior to project construction is recommended. Ideally, monitoring should use a combination of survey techniques including boat-based and aerial surveys. Many of the same techniques can be used that were utilized for regional scale assessment. Monitoring should occur in all times of the year in order to determine occurrence of birds during breeding, migration, and wintering periods, and to reflect their changing needs throughout the year. If prior information at the project site has been collected, some pre-construction monitoring data can be gleaned. However, focused surveys should be conducted to fill any gaps in pre-exiting data, especially to represent changing conditions and seabird occurrence and behavior seasonally. The frequency of surveys depends on the methods used.

Project-specific assessments are used for understanding potential impacts and effects of offshore energy development. The broad goals of project-specific assessments are to:

- Correlate regional-scale assumptions about the distribution, abundance, and use of an area
- Serve as baseline data for comparison to post-construction assessments to determine actual project impacts.
- In addition to determining the numbers and types of birds present within the survey area (i.e., the actual development footprint and associated buffer area), it is important to collect behavioral data in an attempt to understand and analyze potential exposure risk to project-related stressors. The various types of birds using the offshore environment all have different traits and breeding, feeding, and sheltering needs that affect its vulnerability to the construction, operation, maintenance, and decommissioning of offshore energy projects. Important bird behaviors to consider include:

    - **Temporal Use of Habitat** – Surveys must be conducted to determine the daily, seasonal, and annual variation in species occurrence, abundance, and distribution.
    - **Type of Habitat Use**– In addition to understanding when birds may be using the project area, in order to properly evaluate exposure risk, it is important to understand how birds use the project area. Are the birds simply transiting across or through the area? Are they using the area for staging, roosting, molting, or foraging?
    - **Foraging Style** - Do they plunge into the ocean, pluck prey off the surface, and are they active at night?
    - **Flight Height** – How far above the surface of the water do they fly, and in what conditions?
    - **Migration Behavior:** Seasonal timing, daily timing, peak use, and correlation with weather events
    - **Avoidance Behaviors**
    - **Response to Disturbance**

In order to evaluate changes in species abundance, distribution, and behavior between pre- and post-construction activities, proponents should use a *before-after-control-impact* (BACI) design and analysis. Data needs for assessing project-related impacts to species of concern in the offshore environment include (but are not limited to) identifying or understanding:

- Bird distributions – What species are present, where are they located, and when are they in the project area (including time of day);
- Numbers – how many are there; individuals vs. small flocks vs. large concentrations;
- How are birds meeting their breeding, feeding, and sheltering needs in these areas – are they using the area for rafting, staging, feeding, molting, roosting, breeding, commuting, migrating?;
- Proximity to nesting colonies, eagle nest sites, or protected areas (e.g., national wildlife refuges, important bird areas, national parks, marine protection areas, etc.);
- Environmental factors that might attract species of concern – why are species present (e.g., oceanographic or other features that cause birds to use an area); and
- Behavior

Pre-construction Assessment General Methods

Project-scale methods will be similar to those used at the regional scale and be tailored to the specific project-scale questions being answered. An important consideration that must be included in any assessment design is time of year, buffer size, and the survey methods being used.

The completion of at least 3 years of project-specific pre-construction assessments for offshore energy projects is recommended where risk is uncertain, hot spot dynamics are changing, and uncertainty is predominant. Assessments must include data on variable weather conditions, seasons, changing offshore dynamics, and effects from climate change. The number of survey years/effort required may vary based upon the location of the project, the type of project, what is known about an area (i.e., existing data, etc.), and/or the species of concern present; with risk to resource impacts as the driver. Specific project/location assessment design should be coordinated with federal and state agencies.

Survey design should include methods using the best science and technology available to answer the questions being asked and about the taxa of interest. It is critical during the process of survey design that proponents work with qualified biologists most familiar with the best survey methods available for offshore development and coordinate with appropriate regulatory agencies. Survey areas must include the project site and a buffer area. Data collected in a buffer can help assess pre-construction exposure risk and aid in siting decisions (e.g., few birds inside the project area but larger concentrations within the buffer may indicate a higher potential risk than few birds in

the survey and buffer). Buffer areas will vary based upon what is known about an area (large scale data context), the questions being addressed, and species present. Proponents should coordinate with federal and state agencies regarding appropriate buffer sizes.

The most important question to answer with pre- and post- construction monitoring is whether the number of species and individuals occurring at the project site increase or decrease in attendance or change their behavior at the project site. This could be assessed by measuring the number of species and individuals that occur at the study site before and after construction. In addition, pre-construction monitoring can help assess the relative risk posed by the variable to measure in this case would be flight heights and speeds, and to characterize their use of the site by recording behavior.

In addition to general bird occurrence and habitat use data collected during boat based surveys, it would be beneficial to conduct pre-construction radar surveys to document bird flight height in the area and timing of migration. The ability to do this is limited because one requires a stable platform on which to place the radar unit. We encourage the project proponent to conduct these surveys as soon as such a platform is available.

An avian survey plan is currently under development by a small working group which includes avian biologists with USFWS, USGS, BOEM, and OSU which will meet regularly to discuss and determine the science needs for the Windfloat project. The goal of this group is to devise an avian survey plan for the Windfloat project, which will include surveys before, during and after project construction. This group will devise a survey plan which will include location, timing, and frequency of seabird surveys in the project area, as well as envision transects of the project area as well as specific surveys to assess the anticipated effects including attraction, displacement, barrier, and strike. A complete synthesis of data previously collected at the project site would assist with decisions related to survey and study needs (See list below of reports and publications that include data on seabird occurrence off Oregon).

Until such syntheses and decisions have been made, we suggest continuing systematic pre-construction boat-based surveys. As mentioned above, the Division of Migratory Birds generally recommends three years of monitoring prior to project construction for wind energy projects. If this is going to be accomplished before turbine placement in 2017, pre-construction monitoring must begin immediately. Pending the finalization of an avian survey plan we suggest that regular boat based seabird surveys to the project area be initiated immediately. As discussed during prior communications with PNNL and Principle Power, opportunistic at-sea surveys are planned but we suggest augmenting these with surveys to the project site in all seasons to ensure regular year round sampling. The exact frequency of surveys must be determined by the project proponent, based on economics of the project and feasibility but one can look at similar projects to determine frequency. For instance, Oregon State University is currently conducting seabird surveys at the PMEC – SETS wave energy test site off Newport, Oregon. The frequency

selected should provide year round data, while giving surveyors the flexibility to schedule surveys outside of extreme winter weather events and should represent the seasonal nature of seabird use of the project area, as well as providing an adequate sample size in order to conduct robust comparisons of bird occurrence and behavior before and after construction. Boat based surveys should be conducted according to standardized protocols which can be used to compare changes in behavior or occurrence post construction (Tasker et al., 1984). Using available software programs, observers can record variables for each observation including: species, number, flight height, and behavior. Using these data variables, changes in occurrence and behavior before and after construction could be tracked. Surveys should be conducted by trained observers with proven seabird identification skills

Deconstruct the Project – Stressor Identification

Project proponents should work with federal and state agencies to identify how the proposed project might impact species of concern and their resources identified during pre-construction assessments. To accurately deconstruct a project requires knowledge of all activities and the permanent and temporary infrastructure required to complete construction and operation of the project, including how the activities occur in time and space. It is equally important to consider how each activity is conducted as different methods may produce different stressors. It may be helpful to deconstruct the project sequentially in the order the activities occur. The following steps are taken to deconstruct the project:

1. Coordinate early with relevant federal and state agencies
2. Identify all project activities required to complete and operate the project
3. Identify any activity-produced stressor
4. Determine if species of concern or their resources will be exposed to or respond to the stressor (i.e., causing an adverse effect)

Examples of avian stressors include but are not limited to: collisions with offshore structures, structural additions to the landscape, avoidance, noise, habitat alteration or degradation, physical exposure to chemical contamination.

- **Structural addition to the landscape**: New structures offshore may pose a collision risk to movement and migration of birds. Additionally, due to the lack of structural diversity in the offshore environment, some birds may be attracted to any structure that creates a potential perching or roosting location, especially during inclement weather. Collision and mortality will be challenging to document the rate of collisions at offshore developments given that carcass retrieval is not likely. Birds can also be attracted to boat activity: a recent study shows gannets can be attracted to boats from over 7 miles away.
- **Avoidance** could result in a perceived barrier or loss of foraging locations or transiting

routes.

- **Artificial Light** can cause birds to be attracted to or avoid structures, increasing potential of collision.
- **Noise** could cause avoidance, or disruption of breeding if near breeding islands, loss of loafing and sheltering areas.
- **Habitat alteration or degradation** through creation of artificial reefs reduction in prey abundance and distribution, including prey congregation. Artificial odors could interfere with birds to locate resources. Introduction of invasive species could affect terrestrial breeding or marine habitat.
- **Physical exposure to chemical contamination** can include contamination of food and water, and direct oiling of birds.

For the Windfloat project, the stressors with which we have the most concern are addressed below. This list is not all inclusive and could change with more information gained through this process, as we learn more about bird distributions at the Project site and about the impacts of offshore energy.

- **Structural addition to the landscape:**
  Above-water structures that protrude above the surface of the ocean, including the static and spinning components of a wind turbine, could present a collision hazard for birds that fly near to the surface of the ocean such as sea ducks, phalaropes, pelicans, alcids (murres, murrelets and auklets), cormorants, storm-petrels, and dynamic soaring seabirds such as petrels, shearwaters, and albatrosses. Collision risk might increase during migration and during foul weather and foggy periods, and when maintenance craft (which attract birds) are in the Project area. Bright-colored or contrasting paints, markers, or reflectors could increase visibility of these devices to birds and enable them to avoid collision. Sea ducks and geese are generally restricted to nearshore areas which may reduce their susceptibility to this stressor in the case of this project. Cormorants are also nearshore species, but may expand their range due to the perching attraction created by above-water devices. Above water devices could attract birds that like to perch, including cormorants and gulls. Providing novel perching opportunities could have the effect of expanding the normal range of a bird species not normally found in the project area. For instance, cormorants are mainly nearshore species but could be attracted out to the project site if it affords perching opportunities. Availability of perches is likely to have a beneficial impact on the bird species by expanding their foraging opportunities. However, attracting them to the project site could make them susceptible to chemical release, entrapment, and collision with devices and cables, among other hazards.

  Below-water structures including cables and wires could present collision and entrapment hazards for diving seabirds. Guy wires on towers have been shown to present collision

hazards to birds, and a similar effect could be expected underwater. Any device with moving parts underwater, especially where parts shear past each other, could especially present hazard for pursuit divers such as murres, murrelets, tufted puffins, auklets and cormorants which could come in contact with moving devices in the pursuit of prey. Pigeon guillemots also dive to great depths searching for invertebrate prey and could be affected.

- **Light attraction and disorientation:**
  Certain bird species can be attracted to light and disoriented so that they don't return to feed nestlings, become stranded by exhaustion, or collide with objects near the source of the light (boats, buoys). Birds attracted to lights include storm-petrels and some murrelets and auklets. Even brown pelicans can be attracted and disoriented by lights. Best management practices can reduce or eliminate the effects of lighting on birds. Research on communication towers and oil platforms has established that flashing and certain colors of lights (ex: green) can reduce bird attraction to lights. The effects of boat lighting should also be considered if horizontal directional drilling (HDD) requires work at night, especially near coastal nesting colonies. Best management practices (BMP's), such as directing light downward, can reduce the effects of boat lighting. Western snowy plovers, a coastal species, could be affected by increased activities at the shoreline, if activities occur near nesting or winter flocking areas. Additional BMP's for reducing the effects of lights on birds can be provided.

- **Noise and vibration** during installation activities, operation, and maintenance could have negative effects on birds at breeding colonies and at sea. Noise and vibration from the devices themselves, or from increased boat traffic near bird breeding areas during HDD activities could cause nesting seabirds to abandon nests. Avoiding work near offshore islets (common murre and cormorant colonies) and exposed rocky reef (nesting black oystercatchers) during the nesting season would reduce the possibility of nest failure. Pigeon guillemots nest in the sandy coastal bluffs along the stretch of beach where the cable would cross and loud noise or vibration from HDD could disrupt their nesting activities. These effects could be reduced by selecting sites with lower guillemot nest density, or by monitoring individual nests. It is unknown what effects noise generated from offshore energy generating devices will have on birds, but one result could be avoidance of the area.

- **Chemical release:**
  The release of chemicals from the project could potentially impact all birds that forage, migrate or transit near the project area, as well as those breeding on lands and islets on coastlines adjacent to the project. Effects would depend on the specific chemical released. Oils released by the project that form a slick on the surface of the water could

adhere to feathers and would destroy birds' waterproofing, potentially causing them to die from exposure or abandon nests. Breeding birds might also carry oils back to their nests and transfer the oil to eggs and nestlings, causing failure of the nest. Chemicals that end up along shorelines could affect all species breeding or foraging along the coast (ex: shorebirds, especially black oystercatcher and snowy plover). Each of the chemicals that could potentially be release as a result of the construction and maintenance of this project should be identified and assessed.

6. Risk Analysis

Once pre-construction data have been collected, the project has been properly "deconstructed", and project-related stressors have been identified, proponents should qualitatively assign a level of risk. Risk can be defined as the probability of a loss, which depends on the hazard, species vulnerability, and exposure. During project deconstruction, the hazards are identified (i.e., the stressors). Pre-construction assessments provide the species vulnerability to the stressors by considering the species conservation status and all behavioral traits that make species vulnerable to the identified stressors. Behaviors that create a higher risk of exposure to project-related stressors are based on the energy technology being developed and location of development. Each project must determine what a high risk behavior is based on stressors produced by the specific project. For example, flight and foraging behaviors that increase likelihood of a collision would be considered a high risk behavior for any project where collision mortality is possible. Exposure is the interaction of the stressor and the species or the resources upon which they depend and is driven by the presence of species of concern (both spatially and temporally) and any environmental factors that may influence the distribution and abundance of species of concern within or adjacent to the project footprint (i.e., environmental attractants).

When there are information gaps surrounding the production of stressors, species vulnerability, exposure risk, or uncertainty of the level of potential project impacts, proponents should use the precautionary principle when assigning risk. Generally, the risk for species of concern to project-related impacts may be qualified as Low, Moderate, or High per the following:

- ***Lower risk***: an area with no or few species of concern present; does not have environmental features (e.g., shoals, consistent food resources, upwellings, etc.) that would regularly attract species to the area; and where species present do not exhibit behaviors that would increase the exposure or impact of the project-related stressor.
- ***Moderate risk***: an area with some species of concern consistently present but not in large concentrations at one time; may or may not have environmental features that would regularly attract species to the area; and is an area where the species present may exhibit behaviors that would increase the exposure or impact of the project-related stressor. Moderate risk sites can border on higher risk if the proportion of species exhibiting high risk behaviors increases.

- ***Higher risk***: an area with a large number of species of concern consistently present either year-round or seasonally, areas with seasonally large concentrations of birds (e.g., migration cross-overs, rafting, roosting, adjacent breeding, staging areas, or foraging flocks), or areas that at some time may support a large percentage of a population of a species of concern; may or may not have environmental features that would regularly attract species to the area; and is an area where the higher proportion of species present exhibit behaviors that would increase the exposure or impact of the project-related stressor.

Once risk is assigned based on the systematic review and analysis of all risk factors, the proponent should determine if there are actions that can be taken to reduce project risk. The Service recommends that higher risk sites be avoided. It is important to recognize that while pre-construction risk may be low, activities that occur during project construction and operation may change the exposure risk by attracting species of concern. In response to the environmental attractants, the numbers of birds and species composition may change over time. In addition, if a project creates an environmental attractant (e.g., birds following maintenance boats, an artificial reef that creates new food resources, shallow water habitats, structures to perch on, etc.), species that were not previously considered to be at risk may become at risk due to the increase in exposure after construction and during operation.

Therefore, it is important to compare pre-construction and post-construction assessments to determine whether exposure risk has changed over time. We recommend close coordination between project proponents, the Service and State biologists to align studies and site monitoring conducted during pre-construction to better reflect what is anticipated or modeled to be low risk during post-construction development. This alignment has been a major shortcoming in developing land-based commercial wind energy.

7. Identify Conservation Measures

Once project-related stressors have been identified and project impact risk has been qualitatively assigned, the next step is to develop CMs that target the specific project-related stressors, ultimately reducing project effects. Stressors may impact species of concern resources (e.g., indirect or direct habitat effects) or directly on the individual(s) (e.g., collision mortality). Thus, CMs can be used to target either habitat/resource impacts or mortality impacts. When identifying CMs, the project proponent should take the following steps:

- First implement CMs that **avoid** the impact all together,
- If complete avoidance cannot be achieved, the proponent should identify CMs that **minimize** the production of the stressor or species exposure to the stressor,
- For unavoidable or chronic impacts (i.e., impacts occurring repeatedly or over a long period of time), proponents should identify measures that **reduce** the impact over time,

- In circumstances where impacts remain despite CM implementation or when there are no proven CMs for the stressor identified, the proponent should **compensate** for these impacts (see below), and
- Where CMs will not significantly reduce impacts at hot spots, mitigation is inadequate or inappropriate, and risk remains high, proposed sites should be abandoned for less-risky locations.

8. Construction

All CMs targeted at the construction-related stressors will be implemented by the project proponent during the project development phase. Measures should avoid the production of a stressor or minimize the exposure of species of concern to the stressor. Project proponents are also responsible for monitoring the effectiveness of the CMs and determine if unanticipated stressors are produced during any of the construction activities. If a CM does not appear to be effective at avoiding or minimizing the impact, the proponent should work with federal and state agencies to identify and implement an alternate CM, based on the severity of the impact.

9. Operation

The operation of land-based energy facilities (e.g., wind, solar, etc.) has been linked to bird impacts. If a proponent, in coordination with federal and state agencies, has done their "due diligence" during the project siting, project stressor analysis, and CM development, a project should generally fall into a lower risk project; however, this is not always the case. The Service advocates proponents to follow an adaptive management approach during all phases of development, operation, and maintenance. Through continuous monitoring of the efficacy of CMs, proponents can ensure that pre-operation assumptions have been met. When impacts are higher than expected, new CMs or operating conditions should be discussed with federal and state agencies. As part of the project's long-term adaptive management program, discretion over operational actions (e.g., curtailment of operations during high mortality events) should be retained by BOEM, regardless of future ownership, and made part of any Power Purchase Agreement or other contract that might otherwise limit BOEM's ability to implement an effective, comprehensive adaptive management program.

10. Project-Scale Post-construction Assessments

Post-construction assessments are essential for understanding how offshore energy development actually impacts species of concern or their resources. All projects should complete some level of post-construction monitoring to be coordinated with appropriate federal and state agencies. In this section, a consistent approach to post-construction monitoring that strives to meet three primary goals is recommended:

- ***Document biological changes that occur after development and determine if these changes are short-term, long-term, or permanent.*** In order to compare the results of

pre- and post- construction monitoring efforts, similar survey methods must be utilized during both phases of the project. If rigorously conducted, proponents should be able to evaluate changes in bird distribution and/or abundance compared to pre-construction. Changes in behavior should be noted (e.g., flight height, foraging behaviors, presence in rotor swept areas, etc.) and any temporal or spatial responses by species recorded. If breeding seabirds are likely to be affected by the development, colony-based survival and recruitment studies may be required to determine demographic impacts of the development. Project-scale data should also be compared to the larger regional scale assessments to determine if any changes in bird distribution and abundance are explained by oceanographic changes (e.g., food availability, current changes, warming waters, rising sea levels, ocean acidity, etc.).

- ***Measure CM effectiveness***. Proponents should use an adaptive management approach to ensure that all CMs used during construction, operation, and maintenance phases are effective in reducing project-related impacts. When a CM is shown *not* to reduce impacts as anticipated, the adaptive management approach would allow the implementation of alternate CMs to meet project obligations.

- ***Verify Risk Assessment***. Based on the effectiveness of CMs at reducing project impacts, and comparing observed changes between pre- and post-construction, proponents can verify whether pre-construction risk assessments were accurate and the hypotheses reached were valid. If impacts were higher than predicted, proponents should work with federal and state agencies to discuss how to reduce impacts of the project.

Finding carcasses and crippled wildlife in the marine environment is challenging and may be nearly impossible in many cases due to many factors. Research on new technologies that might allow for detecting mortality is on-going and therefore, as methods for monitoring mortality become available, project proponents should consider the feasibility for future use, especially for projects with high levels of uncertainty regarding potential direct impacts.

Post-construction Assessment General Methods

As discussed above, an inter-agency working group is currently designing an avian study plan for the Project. Aside from the specifications recommended by this team, general guidelines dictate that surveys conducted before construction should be conducted similarly after the construction in order to detect any changes in bird occurrence, behavior, or habitat use. For instance, boat-based surveys or aerial surveys should be repeated over the same areas, using the same standardized techniques as were used pre-construction. In addition, additional technologies that were not employed pre-construction should be employed to monitor effects on birds. For instance, radar could be employed post-construction, or as soon as a stable platform is in place at the project site to monitor bird movements through the project area and flight heights, especially

during migrations. The frequency of these surveys will be dictated by logistics: radar units that continuously record data could record more frequent data than units that must be accompanied by a human operator. Radar could also provide some data on the bird mortality, though its utility for this purpose is limited. In some cases, radar has recorded bird strike at wind power facilities but the current technology is not currently capable of this. The project proponent should start looking into these technologies now, as some may not have been used previously in this country or on the West Coast. In addition, radar can provide information on changes in use patterns around wind facilities - a reduction in the number of targets passing through the area after development as compared to pre-construction would indicate avoidance of the area and effective habitat loss. Infrared cameras or other technologies could be used to monitor direct mortality.

Survey methods should be developed based the questions being asked and the best technology available to collect the data. For birds, survey methods may include use of boats, aerial observers, aerial video, radar, thermal imagery, or acoustic techniques (see bird- specific recommendations below). All projects should use consistent approaches with a similar degree of rigor, to the extent practical, so that cross-project/regional/etc. comparisons can be made. These comparisons will allow better assessments of the variation of project impacts across species and locations and allow for agencies to evaluate cumulative effects of offshore energy development.

Given the rapidly changing dynamics in the offshore environments, the uncertainty regarding species response to additions to or alteration of the environment, a staggered interval approach to post-construction monitoring is recommended to assess how impacts from offshore development change over time. This is unlike any land-based project recommendation, but we feel it is a necessary strategy to fully understand the short- and long-term effects on birds (e.g., birds may immediately avoid the area, returning some time later if they become more accustomed to the facility or new food resources are available – creation of artificial reefs). The post-construction surveys are recommended over the following intervals:

- The first 3 years post-construction (immediate response to development)
- During years 6-9 post-construction (short-term effects)
- During years 12-15 post-construction (long-term effects)

Exact survey design and duration should be coordinated with federal and state agencies and can vary based on type of energy technology, predicted risk of the project, location, species of concern potentially affected, and current state of knowledge of the location. Using the adaptive management approach (see below), post-construction surveys can be modified at any time based on results of the assessments (i.e., increase or decrease in frequency and duration of assessments). Aerial surveys have also been used to survey birds offshore of Oregon (Adams et al. 2014) and repeating identical surveys in the project area could allow a post-construction comparison.

Assessing mortality due to collision with turbines in the ocean is not possible with current technologies because carcasses sink and cannot be collected at the surface as at land-based developments. However, technology is under development that can provide information about collisions with turbines. A sensory array for remote monitoring of avian and interactions with wind turbines is currently under development by Oregon State University. This sensory array will include multiple sensors which will simultaneously detect and record collisions by birds from wind turbines. Eventually this array will be tested for use in marine environments and, if successful, we encourage its deployment on the Project. The contact for this technology is Rob Suryan at Oregon State University. In addition, systems are already available that can detect approaching birds using artificial vision technologies, which could become useful in marine environments. Autonomous, independent systems exist that are capable of emitting warning and dissuasion signals, or automatically stopping turbines as birds approach, and providing data for scientific studies of wind energy impacts on birds. In time, these systems could be used in the offshore environment. Where platforms are available, remote acoustic and camera monitoring systems, currently under development, could be deployed. Infrared cameras may also be used to monitor mortalities. We encourage the development, improvement, and use of technologies which will allow accurate assessment of the effects of offshore wind energy on migratory birds.

Adaptive management

We recommend using adaptive management to gain a better understanding of wildlife movements and behaviors and to test conservation measures for effectiveness. The types of events that could trigger adaptive management need to be developed.. Events that could trigger adaptive management might include a documented mortality of an endangered species, or a number of birds killed during a migration or mass movement. Though the technology to detect these events may not be currently available, techniques are currently under development and would include those listed for post-construction assessments, above. Adaptive management strategies should include a list of Conservation Measures that might reduce effects on birds. As data is collected through time, using radar or other methods, information on bird use and movements, such as concentrated migration movement periods, could inform conservation measures.

Examples of the types of conservation measures that could be used to reduce and minimize the Project's operational effects might include seasonal or temporal turbine curtailments. Agreements with the developer and ultimate owner of the Project that will allow for operational modifications should be developed early in the design phase, before any Power Purchase Agreement is finalized that might not allow for operational flexibility. Operational modifications could be adaptively employed, depending on when mortalities occur, or when mortalities are predicted to occur (such as a certain season that has been identified as the most active time for migration or other movements). A multi-agency working group should be created to determine impact thresholds and establish adaptive management responses if a threshold is reached.

Birds potentially affected by the Oregon Windfloat Project

When considering effects to bird species, Birds of Conservation Concern (BCC's) as well as state and federally endangered species are of high concern (https://www.fws.gov/migratorybirds/NewReportsPublications/SpecialTopics/BCC2008/BCC2008.pdf). It is likely that efforts to reduce impacts to these species will benefit other migratory birds in the project area. Following is a list of BCC and listed birds that occur near the project, from coast to the offshore environment, and could therefore be affected by this project. At 16-18 miles from shore, we would be most concerned about the pelagic species such as albatrosses and shearwaters. In fact, both species were noted on the August 2013 survey conducted by Rob Suryan to the project area (Suryan 2013). This list could change with new information gained from pre-construction studies.

BCC's for Bird Conservation Region 5 that could be potentially affected by the project:

Yellow-billed Loon (nb)
Western Grebe (nb)
Laysan Albatross (nb)
Black-footed Albatross (nb)
Pink-footed Shearwater (nb)
Pelagic Cormorant
Black Oystercatcher
Lesser Yellowlegs (nb)
Whimbrel (nb)
Long-billed Curlew (nb)
Hudsonian Godwit (nb)
Marbled Godwit (nb)
Red Knot (*roselaari* ssp.) (nb)
Short-billed Dowitcher (nb)
Caspian Tern
Arctic Tern
Marbled Murrelet (c)

(a) ESA candidate, (b) ESA delisted, (c) non-listed subspecies or population of Threatened or Endangered species, (d) MBTA protection uncertain or lacking, (nb) non-breeding in this BCR

Federally listed species:

Marbled Murrelet (Endangered)
Western Snowy Plover (Threatened)
Short-tailed Albatross (Endangered)

State listed species:

Brown Pelican (Endangered)

Prior surveys conducted in the project area, indicate that some of the most common species in the project area are BCC's. Rob Suryan reported seeing 969 pink-footed shearwaters in the

project site, as well as black-footed albatross (Suryan 2013). Though the large number of these two species seen in the project area may have been present partly because they were attracted to the survey vessel, this should be considered whenever boats are deployed to the site for installation, maintenance, and any other purpose. Short-tailed albatross, an endangered species, have also been documented at the site during satellite tracking studies (Deguchi et al. 2014, Suryan et al. 2007).

In addition to the BCC species listed above, some common species were seen in the project area such as common murres, phalaropes, and Cassin's auklets. Though these birds are common, effects on individuals and populations should still be considered. Oregon's population of common murres, for example, represents a large percentage of the overall population and is therefore very important to the species.

References, including resources that contain information about seabird occurrence and resource use off the Coast of Oregon:

Adams, J., J. Felis, J. W. Mason, and J. Y. Takekawa. 2014. Pacific Continental Shelf Environmental Assessment (PaCSEA): aerial seabird and marine mammal surveys off northern California, Oregon, and Washington, 2011-2012. U.S. Dept. of the Interior, Bureau of Ocean Energy Management, Pacific OCS Region, Camarillo, CA. OCS Study BOEM 2014-003.

Adams, J., C. MacLeod, R.M. Suryan, K.D. Hyrenback, and J.T. Harvey. 2012, Summer-time use of west coast U.S. National Marine Sanctuaries by migrating sooty shearwaters. Biological Conservation **156**:105-116.

Ainley, D.G., K.D. Dugger, R.G. Ford, S.D. Pierce, D.C. Reese, R.D. Brodeur, C.T. Tynan, and J.A. Barth. 2009. Association of predators and prey at frontal features in the California Current. Marine Ecology Press Series **389**: 271-2009.

Ainley, D.G., L.B. Spear, C.T. Tynan, J.A. Barth, S.D. Pierce, R.G. Ford and T.J. Cowles. 2005. Physical and biological variable affecting seabird distributions during the upwelling season of the northern California Current. Deep-Sea Research II **52**: 123-143.

Deguchi, T., R. M. Suryan, K. Ozaki, J. F. Jacobs, F. Sato, N. Nakamura, and G. R. Balogh. 2014. Translocation and hand-rearing of the short-tailed albatross Phoebastria albatrus: early indicators of success for species conservation and island restoration. **Oryx** 48:195-203.

Falxa, G., J. Baldwin, D. Lynch, S.L. Miller, S.K. Nelson, S.F. Pearson, M.G. Raphael, C. Strong, T. Bloxton, B. Galleher, B. Hogoboom, M. Lance, and R. Young. 2011. Marbled murrelet effectiveness monitoring, Northwest Forest Plan: 2009 and 2010 summary report. 26 p.

Ford,R.G., G.K. Himes Boor, and J.C. Ward. 2001. Seabird Mortality resulting from the M/V New Carissa Oil spill incident February and March 1999. Final Report, Prepared for USFWS Oregon Fish and Wildlife Office.

Guy T.J., S.L. Jennings, R.M. Suryan, E.F. Melvin, M.A. Bellman, L.T. Balance, B.A. Blackie, D.A. Croll, T. Deguchi, T.O. Geernaert, R.W. Henry, M. Hester, K.D. Hyrenbach, J. Jahncke, M. A. Kappes, K. Ozaki, J. Roletto, F. Sato, W.J. Sydeman and J.E. Zamon. 2013. Overlap of North Pacific albatrosses with the U.S. west coast groundfish and shrimp fisheries. Fisheries Research **147**: 222-234.

Humphries, G.R., F. Huettmann, G.A. Nevitt, C. Deal, and D. Atkinson. 2012. Species distribution modeling of storm-petrels (*Oceanodroma furcata and O. Leurcorhoa)* in the North Pacific and the role of dimethyl sulfide. Polar Biology.

Nadur, N. J. Jahncke, M.P. Herzog, J. Howar, K.D. Hyrenbach, J.E. Zamon, D.G. Ainley, JA. Wiens, K. Morgan. L.T. Balance and D. Stralberg. 2011. Where the wild things are: predicting hotspots of seabird aggregations in the California Current System. Ecological Applications **21**: 2241-2257.

OWET Avian Radar Baseline Study: Final Survey Report for the Proposed Reedsport Ocean Power Technologies Wave Park, April 2011.

Strong, C.S. 2009. Seabird abundance and distribution during summer off the Oregon and southern Washington coast. Final Report to USFWS and NFWF. Feb. 2009.

Strong, C.S. 1999. Marbled Murrelet Monitoring research 1998: studies on distribution and productivity of marbled murrelets at sea in Oregon.Final Report to ODFW. April 1999.

Suryan, R.M. 2013. Preliminary Results of Marine Bird Surveys at the Proposed Wind Float Pacific site, Oregon, 27-28 August 2013. Unpublished Summary Cruise Report to the Pacific Northwest National Laboratory. January 2014.

Suryan, R. M., E. M. Phillips, K. J. So, J. E. Zamon, R. W. Lowe, and S. W. Stephensen. 2012. Marine bird colony and at-sea distributions along the Oregon coast: Implications for marine spatial planning and information gap analysis. Northwest National Marine Renewable Energy Center Report no. 2. Corvallis: NNMREC. 26 pp.

Suryan, R. M., J. A. Santora, and W. J. Sydeman. 2012. New approach for using remotely sensed chlorophyll a to identify seabird hotspots. Marine Ecology Progress Series **451**:213-225.

Suryan, R. M. and K. N. Fischer. 2010. Stable isotope analysis and satellite tracking reveal interspecific resource partitioning of nonbreeding albatrosses off Alaska. Canadian Journal of Zoology **88**:299-305.

Suryan, R. M., K. S. Dietrich, E. F. Melvin, G. R. Balogh, F. Sato, and K. Ozaki. 2007. Migratory routes of short-tailed albatrosses: Use of exclusive economic zones of North Pacific Rim countries and spatial overlap with commercial fisheries in Alaska. Biological Conservation **137**:450-460.

Tasker, M.L., P.H. Jones, T.Dixon and B.F. Blake. 1984. Counting Seabirds at Sea from Ships: a Review of Methods Employed and a Suggestion for a Standardized Approach. The Auk **101**: 567-577.

Zamon, J.E. 2008, OWET Baseline Seabird Assessment, West Coast Marine Bird Surveys-quantitative shipboard surveys of species distribution and abundance on the continental shelf during April 2008 and July-August 2008. Data report to OWET. Aug. 2008.

Attachment

U.S. Fish and Wildlife Service recommendations for a migratory bird research, monitoring, and adaptive management program: WindFloat Project

Introduction:

The U.S. Fish and Wildlife Service (Service) has the statutory authority and responsibility for enforcing the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-711) and is the lead Federal agency for managing and conserving migratory birds in the U.S. and its territories. Through this responsibility we have the conservation obligation to evaluate potential local, regional, and cumulative impacts to Species of Concern that may be adversely affected by various development activities. Other Federal departments and agencies have been directed to take certain actions to further implement the MBTA (Executive Order 13186) and in fact, USFWS entered into a Memo of Understanding (MOU) with the Minerals Management Service, the precursor to Bureau of Ocean Energy Management (BOEM) developed in accordance with EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds. This MOU, signed in June 2009, obligated the two agencies to strengthen migratory bird conservation through enhanced collaboration and to work together to reduce negative impacts of resource development projects on migratory birds. It obligated MMS (BOEM) to integrate migratory bird conservation principles, as well as reasonable and feasible conservation measures and management practices into MMS approvals, procedures and practices consistent with the Council on Environmental Quality's (CEQ) regulations, and Departmental and Bureau guidelines and procedures. These MOU's have five-year life spans to allow them to remain up to date on current issues, thus we are in the process of working with BOEM to update this MOU. Impacts to migratory birds should be considered during all phases of the project including during siting evaluation, project planning, construction, operation, and decommissioning of an offshore energy facility.

The MOU cited above, required that MMS (BOEM) consult guidelines that exist at the time and consider conservation measures that are relevant, appropriate, and feasible for proposed projects during siting, construction and operations prior to issuing authorizations. The Service is currently developing offshore energy guidelines to assist project proponents in planning offshore energy developments to avoid and minimize impacts to birds and bats. Until these guidelines are finalized, we offer the following general recommendations for the risk assessment, reduction, and monitoring and adaptive management for migratory birds by wind power development, with special considerations for the WindFloat Project (Project) planned off Coos Bay, Oregon. The process through which Project proponents should navigate to consider effects on migratory birds is a step-wise approach using stressor management to identify Project-related impacts and solutions that will avoid, minimize, and reduce impacts over time.

We recognize that climate change has potentially devastating impacts upon migratory birds and the resources upon which they depend. The development of alternative energy sources that do

not emit carbon dioxide or other greenhouse gases could benefit migratory birds by reducing the magnitude or effects of global climate change. Therefore we are committed to working collaboratively with BOEM under the MOU to consider and reduce impacts of the design, construction, operations and maintenance phases of the Project on migratory birds.

We are concerned that the proposed action may impact migratory birds, seabirds, shorebirds, and sea ducks, which are protected under the MBTA. Migratory bird species of concern that may occur in the Windfloat project area are listed at the end of this document. This list is not all-inclusive; other species of birds do occur in the Project area and even common birds should be considered when assessing risk and risk reduction measures. Several endangered species also occur in the Project area. In addition, the ocean is a dynamic environment, and new species may use the area at any time, while others depart. Collaboration in an adaptive management approach, which includes BOEM's ability to implement corrective operational and mitigative actions, as necessary, will help address this constantly changing landscape.

Minimizing impacts to migratory birds should be done using a stepwise process which includes actions taken before and after construction of the project. During planning, the Project proponent should identify stressors to birds by "deconstructing" the Project components and activities, identifying conservation measures, conducting Project-scale pre-construction assessments, and conducting risk analysis for each stressor and species that may be affected. After construction and during operation, the Project proponent should conduct Project-scale post-construction assessments and use adaptive management approach to ensure that measures taken reduce impacts.

Analyzing Impacts from Offshore Development

Direct and indirect impacts from offshore energy can be influenced by several factors, including:

- The type of hazard created by the construction, operation, and maintenance of the various types of offshore energy development;
- The vulnerability of birds to the hazards;
    - Spatial and temporal distribution of species
    - The variation in ocean dynamics that "attract" species (e.g., seasonal and daily changes)
    - Behavioral traits that create risk from a hazard (e.g., light height, foraging style, migration patterns, etc.)
- Exposure risk of species present (i.e., the interaction between project-related hazards and birds or the resources upon which they depend);
- Geographical differences (e.g., Great Lakes vs. Gulf of Mexico vs. N. Atlantic vs. S. Atlantic vs. Pacific coasts vs. Pacific Islands, etc.); and
- Influence of weather patterns and climate change on exposure risk (e.g., prevalence of fog, storm patterns and intensities, ocean acidity, warming waters, etc.).

Stressor Management Approach

To develop low impact offshore energy facilities, project proponents should focus on managing impacts during siting, construction, operation, and maintenance activities. To manage impacts, project proponents should link cause and effect relationships between project activities and species of concern resource needs using a Stressor Management approach. Stressor management is a proactive approach for identifying project-related stressors and pre-development conservation measures to address impacts, as opposed to managing the consequences (i.e., effects) after they occur. This approach should be conducted in coordination with federal and state agencies to ensure all appropriate information is considered and proposed in permitting and compliance documents prior to project construction and operations.

The first step in the stressor management approach is to identify project-related impacts. This is accomplished by "deconstructing" the project down into all of the activities and components required to complete and operate the project. The next step is to predict the impacts associated with each step of the development and operation of the facility, and then implement measures to avoid or minimize any predicted adverse impacts. Sequential evaluation of impacts should allow for a more efficient mitigation process and promote an adaptive management approach to reducing impacts. Proponents should work with federal and state agencies when "deconstructing" and assessing the project. Conservation Measures (CMs) addressing stressors found to likely have an effect on species of concern can be developed and targeted to reduce or eliminate impacts.

Stressors are defined as any *alteration of* or *addition to* the environment that has an impact on species of concern or their resources. Understanding how species of concern and the resources that they depend upon are exposed and respond to stressors allows the proponent to identify the effects of the action. If an activity does not produce any stressors then there would be no impact from that activity. In addition, if a species of concern does not respond in any manner to a stressor when it or its resources are exposed to it, then the action has no effect. Conservation Measures addressing stressors found to likely have an effect on species of concern can be developed and targeted to reduce or eliminate impacts. CMs are any action undertaken to address project related stressors/impacts. CMs can also be referred to as best management practices or mitigation measures. CMs can be focused on ecological/habitat impacts or direct bird mortality. The goal of CMs is to avoid the impact all together, minimize the impact, reduce the impact over time, rectify the impact, or compensate for the impact.

Step-wise Approach to Offshore Energy Development

The USFWS recommends a step-wise approach to offshore energy development which includes Preliminary Project Siting/site assessments, Project Scale Pre-construction Assessment, Stressor Identification through project deconstruction, and Risk analysis. Before construction, CMs should be developed, and then implemented during project operation. Project-scale, post-

construction assessments will help us understand how offshore energy development actually impacts species of concern or their resources.

Preliminary Project Siting/Site Assessments

Project siting should be a rigorous process, where the agency identifying project concentration areas, or project proponents selecting specific project sites gather and synthesize all existing information to help inform early siting decisions. Appropriate data to gather may include:

1. Existing bird distribution and abundance data
2. Existing information on oceanographic features that may congregate birds in an area
3. Known migration corridors and terrestrial features that may funnel birds through specific areas
4. Designated areas for protection (both on land and offshore) or conservation investment
5. Current regional spatial plans (including current offshore use and development)

Pre-construction assessments

Regional Scale Assessments

In order to understand bird-specific considerations, we must first have knowledge of which birds occur in the project area. Pre-construction avian monitoring as well as surveys and research conducted prior to project construction can provide this body of knowledge. Below is a list of documents and publications that include information about bird distributions off the coast of Oregon and should be used to inform this process.

The first and best opportunity to avoid effects of offshore wind developments is during the siting stage. Siting of offshore energy projects that avoid areas of high resource value is currently the most effective conservation strategy for avoiding project-related impacts. Large scale regional spatial planning efforts can collect baseline information and identify avian "hot spots" to be avoided for development in order to reduce impacts to birds.

Regional spatial planning efforts should establish a migratory bird baseline and provide a biological context for species distribution and abundance patterns observed across a wide area, and identify "hot spots" to be avoided by wind power developments. In general to identify important use areas for birds, regional scale assessments should answer the following questions:

- Where are the birds?
- What species are present?
- What is the conservation status of the species present?
- How many birds are in the area (i.e., individuals, small flocks, or large concentrations)?

- When they are there (part or all of life-cycle, seasonally, annually, year-round, intermittently)?
- How are they using the area (e.g., foraging, commuting, migrating, wintering, breeding, etc.)?
- Why are they there (habitat features, migration funnel, food resources, proximity to breeding colonies, other attraction features)?
- Where are foraging/commuting pathways, migratory corridors, crossover areas, preferred rafting/roosting areas?
- What is the behavior of a hot spot – turnover, peak seasonal use, attraction features?
- Typical weather patterns for these areas (e.g., fog, marine layer, etc.)
- Regional assessments should consider oceanographic features, weather patterns, adjacent land features, species conservation status, and the relative importance that a project area holds for the national population of a species.

Assessment Methods

Due to the natural annual variation, regional-scale surveys should cover all seasons to collect data that informs current bird abundance and distribution during the breeding, winter, and migration periods over several years. These assessments, if done consistently, may help identify variation in distribution, abundance, and behaviors influenced by season and weather conditions. Long-term regional assessments that develop a data set can be used for biological context of project-specific pre- and post-construction assessments.

Methods should include the best available technologies to accurately identify and understand how "hotspots" change over time. Methods may include (but are not limited to) boat surveys, aerial surveys with observers, aerial surveys using video, radar, thermal imagery, LIDAR, acoustic, or other Best Available Technologies (BATs), and interpretation of historical or other available data. Boat-based surveys are a common method used to assess seabird occurrence and behavior at sea but multiple techniques should be used and can include aerial and boat-based surveys, and tagging with satellite tags, nano-tag technology to describe avian habitat use in the project area, among others. Radar and acoustic technologies are likely to provide reliable data for nocturnal migrants.

In the case of the Windfloat Project, the chosen lease blocks are on the slope of the continental shelf. Though fairly far offshore (16—18 miles), and therefore out of range of many nearshore bird species, pelagic species such as albatrosses and shearwaters frequent this site of upwelling and productivity. In addition, aspects of the project, such as horizontal direction drilling, could affect nearshore and coastal areas. Since there has been no integrated large scale spatial planning effort for offshore wind power off siting off Oregon, we have missed the opportunity for large scale planning prior to this project. But opportunities could still exist to minimize impacts to birds by siting the projects within its lease block, or selecting cable routes with lower impacts.

Project-scale Pre-construction Avian Assessments

Site specific seabird monitoring for at least three years prior to project construction is recommended. Ideally, monitoring should use a combination of survey techniques including boat-based and aerial surveys. Many of the same techniques can be used that were utilized for regional scale assessment. Monitoring should occur in all times of the year in order to determine occurrence of birds during breeding, migration, and wintering periods, and to reflect their changing needs throughout the year. If prior information at the project site has been collected, some pre-construction monitoring data can be gleaned. However, focused surveys should be conducted to fill any gaps in pre-exiting data, especially to represent changing conditions and seabird occurrence and behavior seasonally. The frequency of surveys depends on the methods used.

Project-specific assessments are used for understanding potential impacts and effects of offshore energy development. The broad goals of project-specific assessments are to:

- Correlate regional-scale assumptions about the distribution, abundance, and use of an area
- Serve as baseline data for comparison to post-construction assessments to determine actual project impacts.
- In addition to determining the numbers and types of birds present within the survey area (i.e., the actual development footprint and associated buffer area), it is important to collect behavioral data in an attempt to understand and analyze potential exposure risk to project-related stressors. The various types of birds using the offshore environment all have different traits and breeding, feeding, and sheltering needs that affect its vulnerability to the construction, operation, maintenance, and decommissioning of offshore energy projects. Important bird behaviors to consider include:

    - **Temporal Use of Habitat** – Surveys must be conducted to determine the daily, seasonal, and annual variation in species occurrence, abundance, and distribution.
    - **Type of Habitat Use–** In addition to understanding when birds may be using the project area, in order to properly evaluate exposure risk, it is important to understand how birds use the project area. Are the birds simply transiting across or through the area? Are they using the area for staging, roosting, molting, or foraging?
    - **Foraging Style -** Do they plunge into the ocean, pluck prey off the surface, and are they active at night?
    - **Flight Height –** How far above the surface of the water do they fly, and in what conditions?
    - **Migration Behavior:** Seasonal timing, daily timing, peak use, and correlation with weather events
    - **Avoidance Behaviors**
    - **Response to Disturbance**

In order to evaluate changes in species abundance, distribution, and behavior between pre- and post-construction activities, proponents should use a *before-after-control-impact* (BACI) design and analysis. Data needs for assessing project-related impacts to species of concern in the offshore environment include (but are not limited to) identifying or understanding:

- Bird distributions – What species are present, where are they located, and when are they in the project area (including time of day);
- Numbers – how many are there; individuals vs. small flocks vs. large concentrations;
- How are birds meeting their breeding, feeding, and sheltering needs in these areas – are they using the area for rafting, staging, feeding, molting, roosting, breeding, commuting, migrating?;
- Proximity to nesting colonies, eagle nest sites, or protected areas (e.g., national wildlife refuges, important bird areas, national parks, marine protection areas, etc.);
- Environmental factors that might attract species of concern – why are species present (e.g., oceanographic or other features that cause birds to use an area); and
- Behavior

Pre-construction Assessment General Methods

Project-scale methods will be similar to those used at the regional scale and be tailored to the specific project-scale questions being answered. An important consideration that must be included in any assessment design is time of year, buffer size, and the survey methods being used.

The completion of at least 3 years of project-specific pre-construction assessments for offshore energy projects is recommended where risk is uncertain, hot spot dynamics are changing, and uncertainty is predominant. Assessments must include data on variable weather conditions, seasons, changing offshore dynamics, and effects from climate change. The number of survey years/effort required may vary based upon the location of the project, the type of project, what is known about an area (i.e., existing data, etc.), and/or the species of concern present; with risk to resource impacts as the driver. Specific project/location assessment design should be coordinated with federal and state agencies.

Survey design should include methods using the best science and technology available to answer the questions being asked and about the taxa of interest. It is critical during the process of survey design that proponents work with qualified biologists most familiar with the best survey methods available for offshore development and coordinate with appropriate regulatory agencies. Survey areas must include the project site and a buffer area. Data collected in a buffer can help assess pre-construction exposure risk and aid in siting decisions (e.g., few birds inside the project area but larger concentrations within the buffer may indicate a higher potential risk than few birds in

the survey and buffer). Buffer areas will vary based upon what is known about an area (large scale data context), the questions being addressed, and species present. Proponents should coordinate with federal and state agencies regarding appropriate buffer sizes.

The most important question to answer with pre- and post- construction monitoring is whether the number of species and individuals occurring at the project site increase or decrease in attendance or change their behavior at the project site. This could be assessed by measuring the number of species and individuals that occur at the study site before and after construction. In addition, pre-construction monitoring can help assess the relative risk posed by the variable to measure in this case would be flight heights and speeds, and to characterize their use of the site by recording behavior.

In addition to general bird occurrence and habitat use data collected during boat based surveys, it would be beneficial to conduct pre-construction radar surveys to document bird flight height in the area and timing of migration. The ability to do this is limited because one requires a stable platform on which to place the radar unit. We encourage the project proponent to conduct these surveys as soon as such a platform is available.

An avian survey plan is currently under development by a small working group which includes avian biologists with USFWS, USGS, BOEM, and OSU which will meet regularly to discuss and determine the science needs for the Windfloat project. The goal of this group is to devise an avian survey plan for the Windfloat project, which will include surveys before, during and after project construction. This group will devise a survey plan which will include location, timing, and frequency of seabird surveys in the project area, as well as envision transects of the project area as well as specific surveys to assess the anticipated effects including attraction, displacement, barrier, and strike. A complete synthesis of data previously collected at the project site would assist with decisions related to survey and study needs (See list below of reports and publications that include data on seabird occurrence off Oregon).

Until such syntheses and decisions have been made, we suggest continuing systematic pre-construction boat-based surveys. As mentioned above, the Division of Migratory Birds generally recommends three years of monitoring prior to project construction for wind energy projects. If this is going to be accomplished before turbine placement in 2017, pre-construction monitoring must begin immediately. Pending the finalization of an avian survey plan we suggest that regular boat based seabird surveys to the project area be initiated immediately. As discussed during prior communications with PNNL and Principle Power, opportunistic at-sea surveys are planned but we suggest augmenting these with surveys to the project site in all seasons to ensure regular year round sampling. The exact frequency of surveys must be determined by the project proponent, based on economics of the project and feasibility but one can look at similar projects to determine frequency. For instance, Oregon State University is currently conducting seabird surveys at the PMEC – SETS wave energy test site off Newport, Oregon. The frequency

selected should provide year round data, while giving surveyors the flexibility to schedule surveys outside of extreme winter weather events and should represent the seasonal nature of seabird use of the project area, as well as providing an adequate sample size in order to conduct robust comparisons of bird occurrence and behavior before and after construction. Boat based surveys should be conducted according to standardized protocols which can be used to compare changes in behavior or occurrence post construction (Tasker et al., 1984). Using available software programs, observers can record variables for each observation including: species, number, flight height, and behavior. Using these data variables, changes in occurrence and behavior before and after construction could be tracked. Surveys should be conducted by trained observers with proven seabird identification skills

Deconstruct the Project – Stressor Identification

Project proponents should work with federal and state agencies to identify how the proposed project might impact species of concern and their resources identified during pre-construction assessments. To accurately deconstruct a project requires knowledge of all activities and the permanent and temporary infrastructure required to complete construction and operation of the project, including how the activities occur in time and space. It is equally important to consider how each activity is conducted as different methods may produce different stressors. It may be helpful to deconstruct the project sequentially in the order the activities occur. The following steps are taken to deconstruct the project:

1. Coordinate early with relevant federal and state agencies
2. Identify all project activities required to complete and operate the project
3. Identify any activity-produced stressor
4. Determine if species of concern or their resources will be exposed to or respond to the stressor (i.e., causing an adverse effect)

Examples of avian stressors include but are not limited to: collisions with offshore structures, structural additions to the landscape, avoidance, noise, habitat alteration or degradation, physical exposure to chemical contamination.

- **Structural addition to the landscape**: New structures offshore may pose a collision risk to movement and migration of birds. Additionally, due to the lack of structural diversity in the offshore environment, some birds may be attracted to any structure that creates a potential perching or roosting location, especially during inclement weather. Collision and mortality will be challenging to document the rate of collisions at offshore developments given that carcass retrieval is not likely. Birds can also be attracted to boat activity: a recent study shows gannets can be attracted to boats from over 7 miles away.
- **Avoidance** could result in a perceived barrier or loss of foraging locations or transiting

routes.

- **Artificial Light** can cause birds to be attracted to or avoid structures, increasing potential of collision.
- **Noise** could cause avoidance, or disruption of breeding if near breeding islands, loss of loafing and sheltering areas.
- **Habitat alteration or degradation** through creation of artificial reefs reduction in prey abundance and distribution, including prey congregation. Artificial odors could interfere with birds to locate resources. Introduction of invasive species could affect terrestrial breeding or marine habitat.
- **Physical exposure to chemical contamination** can include contamination of food and water, and direct oiling of birds.

For the Windfloat project, the stressors with which we have the most concern are addressed below. This list is not all inclusive and could change with more information gained through this process, as we learn more about bird distributions at the Project site and about the impacts of offshore energy.

- **Structural addition to the landscape:**
  Above-water structures that protrude above the surface of the ocean, including the static and spinning components of a wind turbine, could present a collision hazard for birds that fly near to the surface of the ocean such as sea ducks, phalaropes, pelicans, alcids (murres, murrelets and auklets), cormorants, storm-petrels, and dynamic soaring seabirds such as petrels, shearwaters, and albatrosses. Collision risk might increase during migration and during foul weather and foggy periods, and when maintenance craft (which attract birds) are in the Project area. Bright-colored or contrasting paints, markers, or reflectors could increase visibility of these devices to birds and enable them to avoid collision. Sea ducks and geese are generally restricted to nearshore areas which may reduce their susceptibility to this stressor in the case of this project. Cormorants are also nearshore species, but may expand their range due to the perching attraction created by above-water devices. Above water devices could attract birds that like to perch, including cormorants and gulls. Providing novel perching opportunities could have the effect of expanding the normal range of a bird species not normally found in the project area. For instance, cormorants are mainly nearshore species but could be attracted out to the project site if it affords perching opportunities. Availability of perches is likely to have a beneficial impact on the bird species by expanding their foraging opportunities. However, attracting them to the project site could make them susceptible to chemical release, entrapment, and collision with devices and cables, among other hazards.

  Below-water structures including cables and wires could present collision and entrapment hazards for diving seabirds. Guy wires on towers have been shown to present collision

hazards to birds, and a similar effect could be expected underwater. Any device with moving parts underwater, especially where parts shear past each other, could especially present hazard for pursuit divers such as murres, murrelets, tufted puffins, auklets and cormorants which could come in contact with moving devices in the pursuit of prey. Pigeon guillemots also dive to great depths searching for invertebrate prey and could be affected.

- **Light attraction and disorientation:**
  Certain bird species can be attracted to light and disoriented so that they don't return to feed nestlings, become stranded by exhaustion, or collide with objects near the source of the light (boats, buoys). Birds attracted to lights include storm-petrels and some murrelets and auklets. Even brown pelicans can be attracted and disoriented by lights. Best management practices can reduce or eliminate the effects of lighting on birds. Research on communication towers and oil platforms has established that flashing and certain colors of lights (ex: green) can reduce bird attraction to lights. The effects of boat lighting should also be considered if horizontal directional drilling (HDD) requires work at night, especially near coastal nesting colonies. Best management practices (BMP's), such as directing light downward, can reduce the effects of boat lighting. Western snowy plovers, a coastal species, could be affected by increased activities at the shoreline, if activities occur near nesting or winter flocking areas. Additional BMP's for reducing the effects of lights on birds can be provided.

- **Noise and vibration** during installation activities, operation, and maintenance could have negative effects on birds at breeding colonies and at sea. Noise and vibration from the devices themselves, or from increased boat traffic near bird breeding areas during HDD activities could cause nesting seabirds to abandon nests. Avoiding work near offshore islets (common murre and cormorant colonies) and exposed rocky reef (nesting black oystercatchers) during the nesting season would reduce the possibility of nest failure. Pigeon guillemots nest in the sandy coastal bluffs along the stretch of beach where the cable would cross and loud noise or vibration from HDD could disrupt their nesting activities. These effects could be reduced by selecting sites with lower guillemot nest density, or by monitoring individual nests. It is unknown what effects noise generated from offshore energy generating devices will have on birds, but one result could be avoidance of the area.

- **Chemical release:**
  The release of chemicals from the project could potentially impact all birds that forage, migrate or transit near the project area, as well as those breeding on lands and islets on coastlines adjacent to the project. Effects would depend on the specific chemical released. Oils released by the project that form a slick on the surface of the water could

adhere to feathers and would destroy birds' waterproofing, potentially causing them to die from exposure or abandon nests. Breeding birds might also carry oils back to their nests and transfer the oil to eggs and nestlings, causing failure of the nest. Chemicals that end up along shorelines could affect all species breeding or foraging along the coast (ex: shorebirds, especially black oystercatcher and snowy plover). Each of the chemicals that could potentially be release as a result of the construction and maintenance of this project should be identified and assessed.

6. Risk Analysis

Once pre-construction data have been collected, the project has been properly "deconstructed", and project-related stressors have been identified, proponents should qualitatively assign a level of risk. Risk can be defined as the probability of a loss, which depends on the hazard, species vulnerability, and exposure. During project deconstruction, the hazards are identified (i.e., the stressors). Pre-construction assessments provide the species vulnerability to the stressors by considering the species conservation status and all behavioral traits that make species vulnerable to the identified stressors. Behaviors that create a higher risk of exposure to project-related stressors are based on the energy technology being developed and location of development. Each project must determine what a high risk behavior is based on stressors produced by the specific project. For example, flight and foraging behaviors that increase likelihood of a collision would be considered a high risk behavior for any project where collision mortality is possible. Exposure is the interaction of the stressor and the species or the resources upon which they depend and is driven by the presence of species of concern (both spatially and temporally) and any environmental factors that may influence the distribution and abundance of species of concern within or adjacent to the project footprint (i.e., environmental attractants).

When there are information gaps surrounding the production of stressors, species vulnerability, exposure risk, or uncertainty of the level of potential project impacts, proponents should use the precautionary principle when assigning risk. Generally, the risk for species of concern to project-related impacts may be qualified as Low, Moderate, or High per the following:

- ***Lower risk***: an area with no or few species of concern present; does not have environmental features (e.g., shoals, consistent food resources, upwellings, etc.) that would regularly attract species to the area; and where species present do not exhibit behaviors that would increase the exposure or impact of the project-related stressor.
- ***Moderate risk***: an area with some species of concern consistently present but not in large concentrations at one time; may or may not have environmental features that would regularly attract species to the area; and is an area where the species present may exhibit behaviors that would increase the exposure or impact of the project-related stressor. Moderate risk sites can border on higher risk if the proportion of species exhibiting high risk behaviors increases.

- ***Higher risk***: an area with a large number of species of concern consistently present either year-round or seasonally, areas with seasonally large concentrations of birds (e.g., migration cross-overs, rafting, roosting, adjacent breeding, staging areas, or foraging flocks), or areas that at some time may support a large percentage of a population of a species of concern; may or may not have environmental features that would regularly attract species to the area; and is an area where the higher proportion of species present exhibit behaviors that would increase the exposure or impact of the project-related stressor.

Once risk is assigned based on the systematic review and analysis of all risk factors, the proponent should determine if there are actions that can be taken to reduce project risk. The Service recommends that higher risk sites be avoided. It is important to recognize that while pre-construction risk may be low, activities that occur during project construction and operation may change the exposure risk by attracting species of concern. In response to the environmental attractants, the numbers of birds and species composition may change over time. In addition, if a project creates an environmental attractant (e.g., birds following maintenance boats, an artificial reef that creates new food resources, shallow water habitats, structures to perch on, etc.), species that were not previously considered to be at risk may become at risk due to the increase in exposure after construction and during operation.

Therefore, it is important to compare pre-construction and post-construction assessments to determine whether exposure risk has changed over time. We recommend close coordination between project proponents, the Service and State biologists to align studies and site monitoring conducted during pre-construction to better reflect what is anticipated or modeled to be low risk during post-construction development. This alignment has been a major shortcoming in developing land-based commercial wind energy.

7. Identify Conservation Measures

Once project-related stressors have been identified and project impact risk has been qualitatively assigned, the next step is to develop CMs that target the specific project-related stressors, ultimately reducing project effects. Stressors may impact species of concern resources (e.g., indirect or direct habitat effects) or directly on the individual(s) (e.g., collision mortality). Thus, CMs can be used to target either habitat/resource impacts or mortality impacts. When identifying CMs, the project proponent should take the following steps:

- First implement CMs that **avoid** the impact all together,
- If complete avoidance cannot be achieved, the proponent should identify CMs that **minimize** the production of the stressor or species exposure to the stressor,
- For unavoidable or chronic impacts (i.e., impacts occurring repeatedly or over a long period of time), proponents should identify measures that **reduce** the impact over time,

- In circumstances where impacts remain despite CM implementation or when there are no proven CMs for the stressor identified, the proponent should **compensate** for these impacts (see below), and
- Where CMs will not significantly reduce impacts at hot spots, mitigation is inadequate or inappropriate, and risk remains high, proposed sites should be abandoned for less-risky locations.

8. Construction

All CMs targeted at the construction-related stressors will be implemented by the project proponent during the project development phase. Measures should avoid the production of a stressor or minimize the exposure of species of concern to the stressor. Project proponents are also responsible for monitoring the effectiveness of the CMs and determine if unanticipated stressors are produced during any of the construction activities. If a CM does not appear to be effective at avoiding or minimizing the impact, the proponent should work with federal and state agencies to identify and implement an alternate CM, based on the severity of the impact.

9. Operation

The operation of land-based energy facilities (e.g., wind, solar, etc.) has been linked to bird impacts. If a proponent, in coordination with federal and state agencies, has done their "due diligence" during the project siting, project stressor analysis, and CM development, a project should generally fall into a lower risk project; however, this is not always the case. The Service advocates proponents to follow an adaptive management approach during all phases of development, operation, and maintenance. Through continuous monitoring of the efficacy of CMs, proponents can ensure that pre-operation assumptions have been met. When impacts are higher than expected, new CMs or operating conditions should be discussed with federal and state agencies. As part of the project's long-term adaptive management program, discretion over operational actions (e.g., curtailment of operations during high mortality events) should be retained by BOEM, regardless of future ownership, and made part of any Power Purchase Agreement or other contract that might otherwise limit BOEM's ability to implement an effective, comprehensive adaptive management program.

10. Project-Scale Post-construction Assessments

Post-construction assessments are essential for understanding how offshore energy development actually impacts species of concern or their resources. All projects should complete some level of post-construction monitoring to be coordinated with appropriate federal and state agencies. In this section, a consistent approach to post-construction monitoring that strives to meet three primary goals is recommended:

- ***Document biological changes that occur after development and determine if these changes are short-term, long-term, or permanent***. In order to compare the results of

pre- and post- construction monitoring efforts, similar survey methods must be utilized during both phases of the project. If rigorously conducted, proponents should be able to evaluate changes in bird distribution and/or abundance compared to pre-construction. Changes in behavior should be noted (e.g., flight height, foraging behaviors, presence in rotor swept areas, etc.) and any temporal or spatial responses by species recorded. If breeding seabirds are likely to be affected by the development, colony-based survival and recruitment studies may be required to determine demographic impacts of the development. Project-scale data should also be compared to the larger regional scale assessments to determine if any changes in bird distribution and abundance are explained by oceanographic changes (e.g., food availability, current changes, warming waters, rising sea levels, ocean acidity, etc.).

- ***Measure CM effectiveness***. Proponents should use an adaptive management approach to ensure that all CMs used during construction, operation, and maintenance phases are effective in reducing project-related impacts. When a CM is shown *not* to reduce impacts as anticipated, the adaptive management approach would allow the implementation of alternate CMs to meet project obligations.

- ***Verify Risk Assessment***. Based on the effectiveness of CMs at reducing project impacts, and comparing observed changes between pre- and post-construction, proponents can verify whether pre-construction risk assessments were accurate and the hypotheses reached were valid. If impacts were higher than predicted, proponents should work with federal and state agencies to discuss how to reduce impacts of the project.

Finding carcasses and crippled wildlife in the marine environment is challenging and may be nearly impossible in many cases due to many factors. Research on new technologies that might allow for detecting mortality is on-going and therefore, as methods for monitoring mortality become available, project proponents should consider the feasibility for future use, especially for projects with high levels of uncertainty regarding potential direct impacts.

Post-construction Assessment General Methods

As discussed above, an inter-agency working group is currently designing an avian study plan for the Project. Aside from the specifications recommended by this team, general guidelines dictate that surveys conducted before construction should be conducted similarly after the construction in order to detect any changes in bird occurrence, behavior, or habitat use. For instance, boat-based surveys or aerial surveys should be repeated over the same areas, using the same standardized techniques as were used pre-construction. In addition, additional technologies that were not employed pre-construction should be employed to monitor effects on birds. For instance, radar could be employed post-construction, or as soon as a stable platform is in place at the project site to monitor bird movements through the project area and flight heights, especially

during migrations. The frequency of these surveys will be dictated by logistics: radar units that continuously record data could record more frequent data than units that must be accompanied by a human operator. Radar could also provide some data on the bird mortality, though its utility for this purpose is limited. In some cases, radar has recorded bird strike at wind power facilities but the current technology is not currently capable of this. The project proponent should start looking into these technologies now, as some may not have been used previously in this country or on the West Coast. In addition, radar can provide information on changes in use patterns around wind facilities - a reduction in the number of targets passing through the area after development as compared to pre-construction would indicate avoidance of the area and effective habitat loss. Infrared cameras or other technologies could be used to monitor direct mortality.

Survey methods should be developed based the questions being asked and the best technology available to collect the data. For birds, survey methods may include use of boats, aerial observers, aerial video, radar, thermal imagery, or acoustic techniques (see bird- specific recommendations below). All projects should use consistent approaches with a similar degree of rigor, to the extent practical, so that cross-project/regional/etc. comparisons can be made. These comparisons will allow better assessments of the variation of project impacts across species and locations and allow for agencies to evaluate cumulative effects of offshore energy development.

Given the rapidly changing dynamics in the offshore environments, the uncertainty regarding species response to additions to or alteration of the environment, a staggered interval approach to post-construction monitoring is recommended to assess how impacts from offshore development change over time. This is unlike any land-based project recommendation, but we feel it is a necessary strategy to fully understand the short- and long-term effects on birds (e.g., birds may immediately avoid the area, returning some time later if they become more accustomed to the facility or new food resources are available – creation of artificial reefs). The post-construction surveys are recommended over the following intervals:

- The first 3 years post-construction (immediate response to development)
- During years 6-9 post-construction (short-term effects)
- During years 12-15 post-construction (long-term effects)

Exact survey design and duration should be coordinated with federal and state agencies and can vary based on type of energy technology, predicted risk of the project, location, species of concern potentially affected, and current state of knowledge of the location. Using the adaptive management approach (see below), post-construction surveys can be modified at any time based on results of the assessments (i.e., increase or decrease in frequency and duration of assessments). Aerial surveys have also been used to survey birds offshore of Oregon (Adams et al. 2014) and repeating identical surveys in the project area could allow a post-construction comparison.

Assessing mortality due to collision with turbines in the ocean is not possible with current technologies because carcasses sink and cannot be collected at the surface as at land-based developments. However, technology is under development that can provide information about collisions with turbines. A sensory array for remote monitoring of avian and interactions with wind turbines is currently under development by Oregon State University. This sensory array will include multiple sensors which will simultaneously detect and record collisions by birds from wind turbines. Eventually this array will be tested for use in marine environments and, if successful, we encourage its deployment on the Project. The contact for this technology is Rob Suryan at Oregon State University. In addition, systems are already available that can detect approaching birds using artificial vision technologies, which could become useful in marine environments. Autonomous, independent systems exist that are capable of emitting warning and dissuasion signals, or automatically stopping turbines as birds approach, and providing data for scientific studies of wind energy impacts on birds. In time, these systems could be used in the offshore environment. Where platforms are available, remote acoustic and camera monitoring systems, currently under development, could be deployed. Infrared cameras may also be used to monitor mortalities. We encourage the development, improvement, and use of technologies which will allow accurate assessment of the effects of offshore wind energy on migratory birds.

Adaptive management

We recommend using adaptive management to gain a better understanding of wildlife movements and behaviors and to test conservation measures for effectiveness. The types of events that could trigger adaptive management need to be developed.. Events that could trigger adaptive management might include a documented mortality of an endangered species, or a number of birds killed during a migration or mass movement. Though the technology to detect these events may not be currently available, techniques are currently under development and would include those listed for post-construction assessments, above. Adaptive management strategies should include a list of Conservation Measures that might reduce effects on birds. As data is collected through time, using radar or other methods, information on bird use and movements, such as concentrated migration movement periods, could inform conservation measures.

Examples of the types of conservation measures that could be used to reduce and minimize the Project's operational effects might include seasonal or temporal turbine curtailments. Agreements with the developer and ultimate owner of the Project that will allow for operational modifications should be developed early in the design phase, before any Power Purchase Agreement is finalized that might not allow for operational flexibility. Operational modifications could be adaptively employed, depending on when mortalities occur, or when mortalities are predicted to occur (such as a certain season that has been identified as the most active time for migration or other movements). A multi-agency working group should be created to determine impact thresholds and establish adaptive management responses if a threshold is reached.

Birds potentially affected by the Oregon Windfloat Project

When considering effects to bird species, Birds of Conservation Concern (BCC's) as well as state and federally endangered species are of high concern (https://www.fws.gov/migratorybirds/NewReportsPublications/SpecialTopics/BCC2008/BCC2008.pdf). It is likely that efforts to reduce impacts to these species will benefit other migratory birds in the project area. Following is a list of BCC and listed birds that occur near the project, from coast to the offshore environment, and could therefore be affected by this project. At 16-18 miles from shore, we would be most concerned about the pelagic species such as albatrosses and shearwaters. In fact, both species were noted on the August 2013 survey conducted by Rob Suryan to the project area (Suryan 2013). This list could change with new information gained from pre-construction studies.

BCC's for Bird Conservation Region 5 that could be potentially affected by the project:

Yellow-billed Loon (nb)
Western Grebe (nb)
Laysan Albatross (nb)
Black-footed Albatross (nb)
Pink-footed Shearwater (nb)
Pelagic Cormorant
Black Oystercatcher
Lesser Yellowlegs (nb)
Whimbrel (nb)
Long-billed Curlew (nb)
Hudsonian Godwit (nb)
Marbled Godwit (nb)
Red Knot (*roselaari* ssp.) (nb)
Short-billed Dowitcher (nb)
Caspian Tern
Arctic Tern
Marbled Murrelet (c)

(a) ESA candidate, (b) ESA delisted, (c) non-listed subspecies or population of Threatened or Endangered species, (d) MBTA protection uncertain or lacking, (nb) non-breeding in this BCR

Federally listed species:

Marbled Murrelet (Endangered)
Western Snowy Plover (Threatened)
Short-tailed Albatross (Endangered)

State listed species:

Brown Pelican (Endangered)

Prior surveys conducted in the project area, indicate that some of the most common species in the project area are BCC's. Rob Suryan reported seeing 969 pink-footed shearwaters in the

project site, as well as black-footed albatross (Suryan 2013). Though the large number of these two species seen in the project area may have been present partly because they were attracted to the survey vessel, this should be considered whenever boats are deployed to the site for installation, maintenance, and any other purpose. Short-tailed albatross, an endangered species, have also been documented at the site during satellite tracking studies (Deguchi et al. 2014, Suryan et al. 2007).

In addition to the BCC species listed above, some common species were seen in the project area such as common murres, phalaropes, and Cassin's auklets. Though these birds are common, effects on individuals and populations should still be considered. Oregon's population of common murres, for example, represents a large percentage of the overall population and is therefore very important to the species.

References, including resources that contain information about seabird occurrence and resource use off the Coast of Oregon:

Adams, J., J. Felis, J. W. Mason, and J. Y. Takekawa. 2014. Pacific Continental Shelf Environmental Assessment (PaCSEA): aerial seabird and marine mammal surveys off northern California, Oregon, and Washington, 2011-2012. U.S. Dept. of the Interior, Bureau of Ocean Energy Management, Pacific OCS Region, Camarillo, CA. OCS Study BOEM 2014-003.

Adams, J., C. MacLeod, R.M. Suryan, K.D. Hyrenback, and J.T. Harvey. 2012, Summer-time use of west coast U.S. National Marine Sanctuaries by migrating sooty shearwaters. Biological Conservation **156**:105-116.

Ainley, D.G., K.D. Dugger, R.G. Ford, S.D. Pierce, D.C. Reese, R.D. Brodeur, C.T. Tynan, and J.A. Barth. 2009. Association of predators and prey at frontal features in the California Current. Marine Ecology Press Series **389**: 271-2009.

Ainley, D.G., L.B. Spear, C.T. Tynan, J.A. Barth, S.D. Pierce, R.G. Ford and T.J. Cowles. 2005. Physical and biological variable affecting seabird distributions during the upwelling season of the northern California Current. Deep-Sea Research II **52**: 123-143.

Deguchi, T., R. M. Suryan, K. Ozaki, J. F. Jacobs, F. Sato, N. Nakamura, and G. R. Balogh. 2014. Translocation and hand-rearing of the short-tailed albatross Phoebastria albatrus: early indicators of success for species conservation and island restoration. **Oryx** 48:195-203.

Falxa, G., J. Baldwin, D. Lynch, S.L. Miller, S.K. Nelson, S.F. Pearson, M.G. Raphael, C. Strong, T. Bloxton, B. Galleher, B. Hogoboom, M. Lance, and R. Young. 2011. Marbled murrelet effectiveness monitoring, Northwest Forest Plan: 2009 and 2010 summary report. 26 p.

Ford,R.G., G.K. Himes Boor, and J.C. Ward. 2001. Seabird Mortality resulting from the M/V New Carissa Oil spill incident February and March 1999. Final Report, Prepared for USFWS Oregon Fish and Wildlife Office.

Guy T.J., S.L. Jennings, R.M. Suryan, E.F. Melvin, M.A. Bellman, L.T. Balance, B.A. Blackie, D.A. Croll, T. Deguchi, T.O. Geernaert, R.W. Henry, M. Hester, K.D. Hyrenbach, J. Jahncke, M. A. Kappes, K. Ozaki, J. Roletto, F. Sato, W.J. Sydeman and J.E. Zamon. 2013. Overlap of North Pacific albatrosses with the U.S. west coast groundfish and shrimp fisheries. Fisheries Research **147**: 222-234.

Humphries, G.R., F. Huettmann, G.A. Nevitt, C. Deal, and D. Atkinson. 2012. Species distribution modeling of storm-petrels (*Oceanodroma furcata and O. Leurcorhoa)* in the North Pacific and the role of dimethyl sulfide. Polar Biology.

Nadur, N. J. Jahncke, M.P. Herzog, J. Howar, K.D. Hyrenbach, J.E. Zamon, D.G. Ainley, JA. Wiens, K. Morgan. L.T. Balance and D. Stralberg. 2011. Where the wild things are: predicting hotspots of seabird aggregations in the California Current System. Ecological Applications **21**: 2241-2257.

OWET Avian Radar Baseline Study: Final Survey Report for the Proposed Reedsport Ocean Power Technologies Wave Park, April 2011.

Strong, C.S. 2009. Seabird abundance and distribution during summer off the Oregon and southern Washington coast. Final Report to USFWS and NFWF. Feb. 2009.

Strong, C.S. 1999. Marbled Murrelet Monitoring research 1998: studies on distribution and productivity of marbled murrelets at sea in Oregon.Final Report to ODFW. April 1999.

Suryan, R.M. 2013. Preliminary Results of Marine Bird Surveys at the Proposed Wind Float Pacific site, Oregon, 27-28 August 2013. Unpublished Summary Cruise Report to the Pacific Northwest National Laboratory. January 2014.

Suryan, R. M., E. M. Phillips, K. J. So, J. E. Zamon, R. W. Lowe, and S. W. Stephensen. 2012. Marine bird colony and at-sea distributions along the Oregon coast: Implications for marine spatial planning and information gap analysis. Northwest National Marine Renewable Energy Center Report no. 2. Corvallis: NNMREC. 26 pp.

Suryan, R. M., J. A. Santora, and W. J. Sydeman. 2012. New approach for using remotely sensed chlorophyll a to identify seabird hotspots. Marine Ecology Progress Series **451**:213-225.

Suryan, R. M. and K. N. Fischer. 2010. Stable isotope analysis and satellite tracking reveal interspecific resource partitioning of nonbreeding albatrosses off Alaska. Canadian Journal of Zoology **88**:299-305.

Suryan, R. M., K. S. Dietrich, E. F. Melvin, G. R. Balogh, F. Sato, and K. Ozaki. 2007. Migratory routes of short-tailed albatrosses: Use of exclusive economic zones of North Pacific Rim countries and spatial overlap with commercial fisheries in Alaska. Biological Conservation **137**:450-460.

Tasker, M.L., P.H. Jones, T.Dixon and B.F. Blake. 1984. Counting Seabirds at Sea from Ships: a Review of Methods Employed and a Suggestion for a Standardized Approach. The Auk **101**: 567-577.

Zamon, J.E. 2008, OWET Baseline Seabird Assessment, West Coast Marine Bird Surveys-quantitative shipboard surveys of species distribution and abundance on the continental shelf during April 2008 and July-August 2008. Data report to OWET. Aug. 2008.

PUBLIC SUBMISSION

As of: 7/30/14 7:14 PM
Received: July 28, 2014
Status: Posted
Posted: July 30, 2014
Tracking No. 1jy-8dh7-ebd1
Comments Due: July 28, 2014
Submission Type: Web

Docket: BOEM-2014-0050
Notice of Intent to Prepare an Environmental Assessment for Proposed Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf (OCS) Offshore Oregon and Notice of Public Scoping Meetings

Comment On: BOEM-2014-0050-0001
Environmental Assessments; Availability, etc.: Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf Offshore Oregon; Public Scoping Meetings

Document: BOEM-2014-0050-0023
Comment from Steven Olsen, NA

Submitter Information

Name: Steven Olsen
Address:
15409 NE 153rd Street
Woodinville, WA, 98072
Email: Beringsea@comcast.net
Phone: 2066609643
Fax: 4254868321
Organization: NA

General Comment

Dear Mr. Sanders:

I object to the applicant's proposed lease location. The proposed site conflicts with my traditional Pacific whiting fishing grounds. The applicant failed to consider how my legitimate commercial interests in the proposed lease area would be affected, and never attempted to find a more suitable location. BOEM should conduct a full Environmental Impact Statement to be sure that impacts to all fishing operations are fully analyzed. Thank you for considering these comments.

Regards,

Steve Olsen
Owner/Operator, F/V Western Dawn

Board of Commissioners

Courthouse, Room 110
225 W. Olive Street
Newport, Oregon 97365
(541) 265-4100
FAX (541) 265-4176

July 28, 2014

Bureau of Ocean Energy Management
Pacific OCS Region
Attention: Greg Sanders, Office of Environment
770 Paseo Camarillo, Second Floor
Camarillo, California 93010

RE: DOCKET No. BOEM-2014-0050; MMAA 104000 (WINDFLOAT PACIFIC)

On May 29, 2014 the Bureau of Ocean Energy Management (BOEM) published in the Federal Register (Vol. 79, No. 103/Thursday, May 29. 2014/Notices) a Notice of Intent to Prepare an Environmental Assessment for Proposed Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf (OCS) Offshore Oregon and Notice of Public Scoping Meetings.

The Notice of Intent (NOI) is in response to an "unsolicited request" from Principle Power for a commercial wind energy lease on the Outer Continental Shelf (OCS) off Coos Bay, Oregon submitted to BOEM on May 15, 2013. The total lease area being considered in the Environmental Assessment (EA) encompasses 15 square miles (located approximately 16 nautical miles west of Coos Bay). According to information provided by Kevin Bannister from Principle Power at a BOEM meeting with fishing industry stakeholders held in Charleston on June 18, 2014, the actual footprint of their WindFloat Pacific Project (five 6-MW floating WindFloat units) would encompass 10 square miles of ocean space.

We urge the Secretary of Interior to deny Principle Power's unsolicited request for a lease. The WindFloat Pacific Project, at that location, would have substantial impacts on several Oregon fisheries. The economic fallout from the conflicts posed by that project with the Pacific Whiting fisheries would be felt acutely here in Lincoln County and several other communities in Oregon and Washington. Under the Outer Continental Shelf Lands Act (OCSLA) the Secretary of Interior must "consider" the impacts BOEM's OCS leasing program for renewable energy development would have on the fisheries.

BACKGROUND INFORMATION

After BOEM published a Request for Interest (RFI) on September 30, 2013 written testimony about the unsolicited request was submitted to BOEM by impacted commercial fishing industry interest groups. The full record of written submissions to BOEM can be found at http://www.regulations.gov/#!docketBrowser;rpp=25;po=0;D=BOEM-2013-0050.

The following fishing industry representatives submitted testimony: Oregon Trawl Commission (OTC), The West Coast Seafood Processors Association (WCSPA), The United Catcher Boats (UCBA), the Pacific Whiting Conservation Cooperative (PWCC), John B. Jones, III (Captain-F/V Pacific Prince). The testimony provides ample documentation that the area proposed for the WindFloat Pacific Project constitutes highly productive fishing grounds for the Pacific Whiting Fisheries. This testimony, and testimony from other parties, also expressed concerns about: (1) impacts to the marine environment (including avian species), and (2) the dedication of adequate resources to monitor the impacts the project would have on the marine environment.

On June 18, 2014, BOEM held an informal meeting with fishing industry stakeholders in Charleston, Oregon. Two members of the Pacific Whiting Fisheries (who homeport at the Port of Newport in Lincoln County) attended that meeting in Coos County. These two fishermen noted that the proposed WindFloat Pacific Project is located in one of the most significant Pacific Whiting fishing grounds on the West Coast. Why is that the case? There are bathymetric features at that area which influence the ocean currents which in turn influence the food sources for Pacific Whiting. As a result, Pacific Whiting tend to concentrate at that location. This concentration of the Pacific Whiting resource allows the fishermen to harvest the resource in an economically sustainable manner (with a lower carbon footprint).

Moreover, just as important, the Pacific Whiting Fisheries is constrained in terms of where they can fish off the West Coast. Working closely with fishery managers, the Pacific Whiting Fisheries has learned to minimize bycatch of other sensitive fish species (e.g., species of salmon and species of rockfish subject to recovery programs under federal law) by avoiding places in the ocean where these other species are present.

The site that Principle Power is seeking to lease is a place in the ocean where the Pacific Whiting fleet can fish selectively (and reduce bycatch). As such, the Pacific Whiting fishery has become a sustainable and highly profitable industry that benefits communities in Oregon and Washington. This information is important to share because BOEM needs to understand that it is unrealistic to ask the Pacific Whiting fishery to relinquish some of their most productive fishing grounds especially when, by working together, we can identify alternative places for the WindFloat Pacific Project that pose far fewer impacts to Pacific Whiting and other fisheries.

For all of these reasons, many of us believe the issuance of a lease for renewable energy development to Principle Power for this site, given the well-documented negative impacts on the Pacific Whiting Fisheries, would be a violation of the letter and the spirit of the OCSLA.

In addition, Principle Power's project will impact considerably more Pacific Whiting fishing grounds than 10 square miles. At the BOEM-State of Oregon OCS Task Force meeting in Portland, Oregon (June 26, 2014), I, as a Lincoln County Commissioner and experienced commercial fisherman, explained the logistics of the Pacific Whiting fishery in detail. In addition, representatives of the Pacific Whiting Fisheries underscored these same points when offered an opportunity to comment during the informal meeting that followed the formal Task Force meeting.

The Pacific Whiting fleet utilizes long-large mid-water trawl nets. These fishing boats can't make sharp turns. As captains of these fishing vessels approach the project area they will need to haul back their nets or veer away from the project area at least a mile and maybe as far as five miles in advance of the project area. They will be forced to do that to ensure their fishing gear does not get entangled in the mooring lines of the WindFloat Pacific units. As such, the scale of lost Pacific Whiting fishing grounds may amount to 15 to 20 square miles of ocean space (certainly greater than ten square miles).

The Pacific Whiting fishery is not the only fishery that would be impacted by the WindFloat Pacific Project. During the June 18, 2014 fishermen stakeholders meeting in Charleston, two individuals, fishing vessel captains/owners (deepwater trawlers) from Charleston, explained how the WindFloat Pacific Project would impact their fishery. Approximately 10 years ago the U.S. Department of Commerce implemented measures to rebuild rockfish species on the OCS known as the Rockfish Conservation Area (the RCA). The deepwater trawlers based in Charleston, with the RCA, have been pushed out (west) beyond the RCA to a relatively narrow portion of the continental shelf. The proposed WindFloat Pacific Project encroaches upon their fishing grounds and would create economic hardship for the Charleston-based deepwater trawlers.

In summary, there is now compelling evidence on the record that at least two major commercial fisheries on the West Coast would be substantially damaged, economically, by the issuance of a lease for the WindFloat Pacific Project.

A DEEPLY FLAWED PROCESS

The question arises, how could BOEM and Principle Power get this far along in the process and only now learn of the profound economic impacts that the project would have on two important fisheries (impacting communities/businesses in both Oregon and Washington State)?

The U.S Department of Interior has not done their homework. Inventories of ocean uses and the marine environment needed to facilitate responsible offshore renewable energy development on the OCS have not been prepared. Community leaders and the Marine Resources Program Manager at the Oregon Department of Fish & Wildlife (ODFW) have been vocal about the shortcomings of BOEM's Pacific Regional Ocean Users Atlas (PROUA). Moreover, BOEM seems content to receive "unsolicited requests" for ocean space from ocean energy companies without a larger framework of information to assess, up front, what the impacts could be on existing ocean uses and the marine environment.

Principle Power, to their credit, engaged a respected stakeholder group (led by leaders in the local fishing industry) known as the Southern Oregon Ocean Resources Coalition (SOORC), before submitting their unsolicited request to BOEM. The stakeholders that participate in SOORC asked Principle Power to take the project beyond 250 fathoms. Principle Power followed SOORC's advice and took their project out beyond 250 fathoms.

SOORC, though, is a group of volunteers. And, not all of the fisheries on the South Oregon Coast and certainly not the rest of the fisheries from the Oregon Coast or from Washington State are represented by SOORC. In retrospect, Principle Power should have consulted with the Oregon Department of Fish and Wildlife (ODFW) and the staff of the Pacific Fisheries Management Council (PFMC) as they searched for a development site to submit to BOEM. Had those logical steps been taken the conflicts with these important fisheries would have been disclosed much earlier. Had those logical steps been taken Principle Power could have identified a site on the OCS that enjoys community support.

The difficult situation we now find ourselves in with WindFloat Pacific Project reinforces what leaders from the Oregon Coast have been stating publically for over a year. BOEM's leasing process is deeply flawed. The ad hoc approach to leasing is anachronistic (e.g, the reliance on unsolicited requests from energy developers with the data gathering process about ocean uses and the marine environment pushed to the back end of the leasing process). BOEM's piecemeal ad hoc approach to leasing runs directly counter to the central themes of Executive Order 13547 (the National Ocean Policy (NOP)) executed by President Obama during 2010. The NOP instructed federal agencies to achieve greater levels of coordination.

WHERE DO WE GO FROM HERE?

First, let us learn from our mistakes. Federal, tribal, state and local leaders must work together to develop a thorough database of key features of the marine environment and of ocean uses. We must develop effective protocols for the engagement with stakeholders. Those discussions need to be informed by objective/thorough inventories that are in hand (not created after-the-fact). Once these common sense tasks are completed we can anticipate most, if not all, parties that need to be included in the process will be engaged.

Second, the site selection process for the WindFloat Pacific Project needs to be restarted. By working together we can strive to find a site for Principle Power that is consistent with statutory criteria under the OCSLA. The fact that Principle Power has a timing issue with a $47 million grant awarded by the U.S. Department of Energy (USDOE) cannot serve as a valid justification to violate the OCSLA.

The flawed OCS leasing process does not advance the cause of renewable energy technology development. Investors in offshore renewable energy projects, like investors in energy projects on land, want to know a project has been properly vetted. Indeed, the financial community and the utility community both want to advance projects that are relatively free of controversy and that attract community support. The high costs of operating renewable energy facilities in the Pacific Ocean may already be prohibitive. Developers should not also have to run the gauntlet of stiff local opposition to their projects because the U.S Department of Interior did not lay the proper groundwork for responsible offshore development.

Sincerely,

Terry N. Thompson, Chair

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
US Integrated Ocean Observing System (IOOS®)
1100 Wayne Ave., Suite 1225
Silver Spring, Maryland 20910

July 28, 2014

Dr. Andrew Krueger
Project Coordinator
Bureau of Ocean Energy Management
Office of Renewable Energy Programs
381 Elden Street, HM 1328
Herndon, VA 20170-4817

RE: Notice of Intent to Prepare an Environmental Assessment for Proposed Wind Energy-Related Development Activities on the Pacific Outer Continental Shelf (OCS) Offshore Oregon and Notice of Public Scoping –(Docket BOEM-2014-0050)

Dear Dr. Krueger:

> The National Ocean Service (NOS) has reviewed the Federal Register notice (79 FR 30876) published on May 29, 2014, requesting submissions of information and nominations (Call) for commercial leases for wind energy development on the Outer Continental Shelf (OCS) offshore New York, including comments on environmental issues and potential alternatives. In addition, you are requesting comments on your Notice of Intent (NOI) to prepare an Environmental Assessment for potential commercial wind lease issuance and site assessment activities.

NOS appreciates the efforts of the Bureau of Ocean Energy Management (BOEM) to engage programs across the National Oceanic and Atmospheric Administration (NOAA). As such, we understand that BOEM is already familiar with NOS products and services as they relate to energy (for example, nautical charting, coastal management, ocean observations, coastal science). NOS is available to discuss any of our priorities, programs, and projects as needed (http://oceanservice.noaa.gov/about/).

In regards to the above mentioned Federal Register Notice, I am submitting the following comments on behalf of NOS. We are highlighting for BOEM's awareness, the location of high frequency radars supporting through the U.S. Integrated Ocean Observing System (IOOS).

There are four (4) high frequency (HF) radars in Oregon that will be negatively impacted by wind turbines situated offshore Coos Bay. This will result in a loss of coastal monitoring for approximately 200 miles of the Oregon and California coasts. HF radars are used operationally by US Coast Guard for search and rescue and by NOAA for oil spill response. Both these applications require 24/7/365 operations unimpeded by external interference to the HF radar signal. More information on the radars is available at www.ioos.noaa.gov/hfradar.

Two recent simulations of offshore wind turbine interaction with HF coastal radar operation (Teague, 2012, http://www.oceans12mtsieeehamptonroads.org/index.cfm; Naqvi and Ling, DOE Study DEEE0005380) indicate that rotating turbine blades will cause some degree of interference with HF radar data and that this interference will require mitigation techniques. The signature and impact of turbine blade rotation on HF radar data processing are not currently characterized from real-world situations, and simulation data only recently exist. Simulations of turbine impacts must be refined to include details of actual turbine construction materials and operating parameters. These simulations and real-world data will inform regulators of the extent to which mitigation techniques will be required for unimpeded HF radar operation.

NOS and the U.S. IOOS Program would like to work with BOEM to seek to minimize and if possible eliminate impacts to HF radar operations.

Should you have any questions on the HF radar, please contact Dr. Jack Harlan, Project Manager, HF Radar Ocean Remote Sensing in the U.S. IOOS Program Office at 240-478-9942 or jack.harlan@noaa.gov. Other questions on NOS programs can be directed to Glenn Boledovich, Chief of the NOS Policy, Planning, and Analysis Division (301-713-3070 or Glenn.Boledovich@noaa.gov.

Thank you for the opportunity to provide comments on the NOI for Commercial Leasing for Wind Power on the OCS Offshore Oregon. We look forward to continuing to coordinate with you in the future.

Sincerely,

Zdenka S. Willis
Director, U.S. IOOS Program Office

cc: Glenn Boledovich, Chief, NOS Policy Planning and Analysis Division
Jack Harlan, U.S. IOOS Program Office
Betsy Nicolson, NOAA CMSP Regional Lead
Susan Holmes, NOAA Energy Team co-lead