



P.O. Box 37158, Honolulu, Hawai`i 96837-0158
Phone: 927-0709 henry.lifeoftheland@gmail.com

June 27, 2016

Ms. Karen Herrera
BOEM, Pacific OCS Region
760 Paseo Camarillo, Suite 102 (CM 102)
Camarillo, California, 93010
Karen.Herrera@boem.gov

Re: BOEM Public Hearings

Aloha Karen Herrera,

Life of the Land is Hawai`i's own energy, environmental and community action group advocating for the people and `aina for 45 years. Our mission is to preserve and protect the life of the land through sound energy and land use policies and to promote open government through research, education, advocacy and, when necessary, litigation.

The Bureau of Ocean Energy Management (BOEM) received unsolicited bids to build off-shore floating wind turbines off Ka`ena Point and off the southern coast between Kalaeloa and Diamond Head.

BOEM identified two areas where floating turbines might be installed: O`ahu North and O`ahu South. BOEM issued two notice in the Federal Registry. The first is a call for information and nominations.¹ The second is a Notice of Intent to prepare an Environmental Assessment.²

O`ahu North is located in the 72-mile wide Ka`ie`iewaho Channel which separates O`ahu and Kaua`i and has a maximum depth of 10,890 feet. People who fish, boat or canoe through, or have spiritual connection to the area may be based out of either island.

Therefore, public hearings should be held on both islands.

The proposed floating wind turbines also represent a unique legal problem.

Hawaiians believe that the land, the sea, the clouds are interconnected. The ocean is the source, *ke kumu*, of life. The ocean is `ohana, ancestor and life-giver. Personal gods, *Aumakua*, including whales, sharks and other marine life, reside within the channel. And *Kanaloa* is revered as the god of the ocean.

Hawaiian ocean practices were not codified in rules and laws. As Williamson Chang noted in "Indigenous Values and the Law of the Sea" (2010), "The nature of indigenous ocean law raises the central problem of how to apply culturally specific principles to a legal framework developed independently of that culture."³

¹ Call for Information and Nominations (Call) re Commercial Leasing for Wind Power on the Outer Continental Shelf Offshore the Island of Oahu, Hawaii (Docket No. BOEM–2016–0036) <https://www.federalregister.gov/articles/2016/06/24/2016-14830/commercial-leasing-for-wind-power-on-the-outer-continental-shelf-offshore-the-island-of-oahu>

² Notice of Intent to prepare an Environmental Assessment re Commercial Wind Leasing and Site Assessment Activities on the Outer Continental Shelf (OCS) Offshore the Island of Oahu, Hawaii (Docket No. BOEM–2016–0049) <https://www.federalregister.gov/articles/2016/06/24/2016-14829/environmental-assessment-for-commercial-wind-leasing-and-site-assessment-activities-on-the-outer>

³ <https://scholarspace.manoa.hawaii.edu/bitstream/10125/34017/1/IndigenousValuesLOS.pdf>

The North Call Area, located in part of the Hawaiian Kingdom, was acquired by the federal government but not subsequently ceded to the State. Hawaii State waters include any point three nautical miles from the shoreline of the State.⁴ Public lands include all submerged lands surrounding each island to one marine league seaward (three miles).⁵ The Outer Continental Shelf (OCS) is an artificially federally defined term denoting the area between three to 200 nautical miles (nm) from shore. The federal definition applies to Hawai`i even though Hawai`i does not have a continental shelf.

The U.S. Government established that a State may claim a territorial sea that extends seaward up to 12 nautical miles from its baselines.⁶ The U.S. defined the Three Nautical Mile Line as the boundary for various federal laws, a contiguous zone (0-24 nm) and the exclusive economic zone (EEZ) (0-200 nm).⁷

The questions and issues surrounding commercialization of federally-controlled ceded lands need to be carefully analyzed within the environmental and cultural review process.

As you heard in the two meetings, our communities depend upon the ocean for sustenance, prayer, recreation, and meditation. Our surrounding ocean gives us life and purpose. What is placed in or on that ocean impacts our cultural practices and our lives. Public hearings are in order.

Mahalo

Henry Curtis
Executive Director

⁴ http://www.capitol.hawaii.gov/hrscurrent/Vol06_Ch0321-0344/HRS0342D/HRS_0342D-0101.htm

⁵ Bishop v. Mahiko, 35 Haw. 608, 642-45 (1940) <http://law.justia.com/cases/federal/district-courts/FSupp/987/1288/1804478/>

⁶ http://www.gc.noaa.gov/gcil_maritime.html

⁷ http://www.gc.noaa.gov/gcil_maritime.html#3m



ALA MOANA/KAKA'AKO NEIGHBORHOOD BOARD NO. 11

c/o NEIGHBORHOOD COMMISSION • 530 SOUTH KING STREET ROOM 406 • HONOLULU, HAWAII, 96813
PHONE (808) 768-3710 • FAX (808) 768-3711 • INTERNET <http://www.honolulu.gov/nco>

**RESOLUTION PROVIDING COMMENTS TO THE
BUREAU OF OCEAN ENERGY MANAGEMENT RELATING TO
POTENTIAL OFFSHORE WIND ENERGY DEVELOPMENT NEAR OAHU**

WHEREAS, the Bureau of Ocean Energy Management (BOEM) has requested, via the Federal Register, comments from the public regarding the issuance of commercial wind energy leases (Docket No. BOEM-2016-0036); and

WHEREAS, the BOEM could issue a lease, either through a competitive or noncompetitive process, that would give the lessee the exclusive right to see BOEM approval for the development of wind energy; and

WHEREAS, effective and successful community engagement is important for both the public and project proponents alike; and now therefore,

BE IT RESOLVED, the Ala Moana–Kaka'ako Neighborhood Board No. 11 urges the BOEM to maximize effective public and community stakeholder input and relationship building throughout the development of offshore wind energy infrastructure; and

BE IT FINALLY RESOLVED, that copies of this resolution be transmitted to the BOEM and all Neighborhood Board Chairs.

ADOPTED by the Ala Moana-Kakaako Neighborhood Board No. 11 at its regular meeting on Tuesday, July 26, 2016, by a vote of 7-0-0.



RYAN TAM
Chair



September 5, 2016

Bureau of Ocean Energy Management
Pacific OCS Region
760 Paseo Camarillo, Suite 102
Camarillo, California 93010

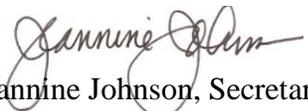
Re: Environmental Assessment for Commercial Wind Leasing and Site Assessment Activities
on the Outer Continental Shelf (OCS) Offshore the Island of O‘ahu, Hawai‘i

Aloha mai kākou,

Aloha ‘Āina ‘O Kamilo Nui is a non-profit community organization dedicated to the protection and preservation of the land, natural and cultural resources of Kamilo Nui Valley and the East Honolulu area which includes the South Shore of O‘ahu. Aloha ‘Āina ‘O Kamilo Nui embraces the Hawaiian values of “aloha ‘āina” and “mālama ‘āina” (love and care for the land) and strives to protect and perpetuate the ‘āina, kai (ocean) and its cultural resources for the benefit of future generations.

Aloha ‘Āina ‘O Kamilo Nui strongly opposes the proposal for Commercial Wind Leasing and Site Assessment Activities on the Outer Continental Shelf Offshore the Island of O‘ahu. Marine mammals, birds, fish, and coral will all be significantly impacted by wind energy development offshore O‘ahu. It is also culturally inappropriate to place windfarms in the ocean which is the sacred realm of the Hawaiian akua (god) Kanaloa. Finally, it is essential, and indeed in the higher public interest, to sustain the attractiveness of our island for our residents, tourists and future generations to enjoy and the proposed project would destroy the beauty of our island home.

‘O au nō me ka ‘oia‘i‘o,


Jeannine Johnson, Secretary

Aloha ‘Āina ‘O Kamilo Nui
Box: 25304, Honolulu, Hawaii 96825
Ph: 396-7011 ☒ Fax: 396-5399



August 8, 2016

Regional Director
Bureau of Ocean Energy Management, Pacific OCS Region
760 Paseo Camarillo, Suite 102
Camarillo, California 93010

Re: Commercial Leasing for Wind Power and Site Assessment Activities on the Outer Continental Shelf Offshore the Island of Oahu
- **Comments on Call for Information and Nominations**
- **Comments on Notice of Intent to Prepare Environmental Assessment**
81 Fed. Reg. 41,334, 41,335 (June 24, 2016)¹
Docket Nos. BOEM-2016-0049 and BOEM-2016-0036

Aloha,

As you know, the U.S. Department of Energy estimates that Hawai'i has the greatest potential for deep offshore wind in the U.S.² With a deep dependence on oil for power generation, and the highest retail electricity rates in the country, the potential for offshore wind in Hawai'i is a huge opportunity for the public interest. These potential benefits span a range of environmental, technical, economic, and community issues. The potential for clean, reliable, affordable energy benefits also spreads to other entities, such as the U.S. military.

However, realizing this potential for the benefit of Hawai'i will require BOEM's careful stewardship of the evaluation and development process; the public interest of communities in Hawai'i must be protected. And the process must be efficient and effective. Hawai'i is on the path to 100% renewable energy, and simply cannot wait for stops and starts in the process of evaluating appropriate energy resources.

For that reason, we write specifically to request your careful attention to the process that will be used to select and lease an appropriate site for offshore wind. In this process, the "highest bidder" will obtain an exclusive right to develop its offshore wind plans and seek BOEM approval of those plans. This "highest bidder" approach may be suitable in some contexts, such as oil and gas leasing. **But for offshore wind in Hawai'i, the "highest bidder" approach hides a deep flaw.** One hundred percent of the leasing costs incurred by the highest bidder will eventually be paid by Hawai'i electricity ratepayers (probably via a power purchase agreement "PPA" with a Hawai'i electric utility). Thus, the "highest bidder" process may induce competition

¹ See also 81 Fed. Reg. 51,462 (Aug. 4, 2016) (extending comment deadline for comments on EA notice to September 7, 2016).

² See U.S. Dept. Energy, Wind & Water Power Program, *National Offshore Wind Strategy*, table 1 (Feb. 7, 2011) ("National Offshore Wind Strategy"), available at http://energy.gov/sites/prod/files/2013/12/f5/national_offshore_wind_strategy.pdf

and benefit the U.S. as the recipient of the lease funds, but it will be at the expense of a single constrained group of citizens (Hawai'i ratepayers). **This is markedly distinct from oil and gas leasing, where the lessee's costs are borne and determined in the entire national or global market for fossil fuels. It may even be distinct from offshore wind in other regions, where power can be sold into regional markets, rather than to specific utilities with a limited customer base.**

To protect the public interest in Hawai'i, the "highest bidder" concept should be re-evaluated. Given the careful stakeholder process that will be required to appropriately develop offshore wind in Hawai'i, and the potential for enormous benefits, **the optimal lease recipient will be associated with the lease proposal that is most likely to be successfully developed within the context of Hawai'i's community interests.** This is not the same as the highest bidder. Indeed, a high bid will increase the PPA costs, lowering the likelihood of successfully contracting with the utility, and lowering the likelihood of approval by Hawai'i's Public Utilities Commission.

Moreover, tailoring the lease process in Hawai'i to optimize the likelihood of success can also confer broader benefits on the national market for offshore wind. The U.S. Department of Energy has recognized that factors such as public acceptance – which will be crucial for developing offshore wind in Hawaii – will have this broader impact on the potential for offshore wind:

Public acceptance of offshore wind will also be crucial to both the deployment of specific projects and *the long-term success of the industry*. The development of offshore wind could pose risks to competing uses of the ocean space, such as fishing, navigation, tourism, and military operations. Affected communities, tribes, and organizations will also have concerns that will need to be addressed. *Many of these issues will be site-specific, but many will have common themes that can be addressed collectively.*³

In other words, successful offshore wind in Hawai'i can help mean successful offshore wind across the U.S. That success will start with the leasing process.

The fundamental flaw in the competitive leasing for Hawai'i is solvable. **The evaluation of proposals should focus on characteristics other than lease price.** These characteristics would seek to identify the highest likelihood of project competition, with factors tailored specifically for the barriers to developing offshore wind in Hawai'i.

BOEM is empowered with the discretion to use such tailored factors. For example, 30 C.F.R. §

³ See *id.* at 28 (emphasis added).

585.211(a)(2) designates a wide range of appropriate considerations with respect to the call and the competitive leasing process, including “multiple uses of the proposed leasing area” and “other socioeconomic, biological, and environmental” considerations. 43 U.S.C. § 1337(a) calls for oil and gas leases to go to the “highest responsible authorized bidder.” In contrast, 43 U.S.C. § 1337(p)(4), governing activities that “produce or support production, transportation, or transmission of energy from sources other than oil and gas,” simply requires “a fair return to the United States for any lease, easement, or right-of-way under this subsection.” A “fair return” does not equate to the “highest bidder.” Indeed, a tailored process as proposed in this letter is best suited to satisfying the list of requirements in 43 U.S.C. § 1337(p)(4) (e.g. protection of the environment, conservation of resources, etc.).

Key factors tailored for offshore wind in Hawai‘i might include:

- **Community engagement.** Has the developer invested in engaging with communities in a collaborative, consultative, and analytical manner, sufficient to identify barriers, priorities, and solutions? Does the developer have a demonstrated ability and commitment to continue engaging communities through the development process? Has the developer identified site-specific strategies for identifying and solving community concerns?
- **Technical sufficiency.**⁴ Has the developer identified defensible technical solutions with respect to issues such as developing wind in deep water (>60m)?
- **Utility and permitting engagement.**⁵ Has the developer engaged with the appropriate utility and regulating agencies in a manner sufficient to identify barriers, priorities and solutions? In conjunction with the lease proposal, has the developer sufficiently considered interconnection issues, utility contracting issues, and regulatory approval issues? Has the developer sufficiently developed an initial plan for permitting issues?
- **Financial sufficiency.**⁶ Has the developer adequately analyzed the development steps and barriers, and identified a financial plan sufficient to complete those steps and resolve barriers? Does the developer have a demonstrated ability and commitment to implement

⁴ See *id.* at 10 (“Significant challenges to offshore wind power deployment related to resource characterization, grid interconnection and operation, and infrastructure will need to be overcome.”).

⁵ The need for utility engagement and a strategy for successful contracting is illustrated by recent Hawaii PUC decisions rejecting proposed PPAs. See, e.g., Hawai‘i Public Utilities Commission Docket No. 2014-0358. The need for a developer that can demonstrate its ability to navigate complex permitting issues is almost self-evident; “[p]lanning an offshore project requires consideration of hundreds of important environmental and conflicting-use factors, as well as compliance with a multitude of regulations enforced by agencies with varying levels of jurisdictional authority.” National Offshore Wind Strategy at 28. See also *id.* at 10 (“As a nascent industry in the United States, offshore wind projects face new and untested permitting processes, which contribute to the uncertainty and risk faced by potential project developers and financiers, in turn potentially impacting investment in both offshore wind power projects and development of the supply chain and other supporting infrastructure.”).

⁶ See National Offshore Wind Strategy at 8 (noting the higher capital costs for offshore wind in comparison to land-based installations, one-time costs to develop infrastructure such as port upgrades, and the need for innovation to develop resources in deep water).

solutions for lowering capital costs,⁷ and obtaining necessary capital to execute this financial plan?

In essence, these factors explore whether a developer has appropriately participated in the pre-lease process parallel to BOEM's "Planning and Analysis" phase of the leasing process – thus maximizing the likelihood of a successful project.⁸ Luckily, factors such as these have already been identified and characterized in the National Offshore Wind Strategy. To adequately apply the leasing process to Hawai'i, and to protect the public interest, these factors should simply be re-prioritized to become a focal point of the leasing process, in place of a focus on price bidding.

Thank you for your work in support of clean energy for Hawai'i.

Respectfully,



Richard Wallsgrove
Policy Director

richard@blueplanetfoundation.org

cc:

BOEM-Hawaii Intergovernmental Renewable Energy Task Force

⁷ *Cf. id.* at 9 (noting that "The cost of energy can be lowered by reducing the capital costs, financing costs, or operations and maintenance costs of a project, or by increasing the amount of energy generated by the project over its operational life").

⁸ See BOEM Fact Sheet, Wind Energy Commercial Leasing Process (Sep. 15, 2015) at 2, *available at* <http://www.boem.gov/Commercial-Leasing-Process-Fact-Sheet/>.



Comments submitted via regulations.gov

August 3, 2016

Bureau of Ocean Energy Management
Pacific OCS Region
760 Paseo Camarillo, Suite 102
Camarillo, California 93010

Re: Scoping Comments, Environmental Assessment for Commercial Wind Leasing and Site Assessment Activities on the Outer Continental Shelf (OCS) Offshore the Island of Oahu, Hawaii

To Whom it May Concern:

The Center for Biological Diversity (the “Center”) submits the following scoping comments on the environmental assessment (“EA”) for Commercial Wind Leasing and Site Assessment Activities on the Outer Continental Shelf (OCS) Offshore the Island of Oahu, Hawaii (the “Proposed Action”). 81 Fed. Reg. 41,334 (June 24, 2016). The Center is a non-profit public interest conservation organization with more than one million members and online activists dedicated to protecting imperiled species and their habitats, including efforts to protect the environment from the risks of offshore energy development.

While the Center supports the development of renewable energy, including wind sources, the Bureau of Ocean Energy Management (“BOEM”) must adequately analyze the impacts of any commercial leases on the marine environment and the marine mammals, seabirds, and fish off the coast of Oahu. These areas contain biologically important ecosystems for many animals, including the endangered Hawaiian monk seal, as well as providing migration corridors for migratory seabirds. BOEM must complete a full Environmental Impact Statement (“EIS”) to ensure that its leasing program adequately analyzes the impacts of wind energy facilities on the marine environment.

1. BOEM Must Conduct an Environmental Impact Statement

As a threshold matter, BOEM must prepare a full EIS. The EIS must include an analysis of not only the impacts of “the issuance of a wind energy lease or leases,” and “the approval or site assessment activities,”¹ but downstream impacts from the leases themselves, including the construction, installation, operation, and decommissioning of wind energy projects.

The National Environmental Policy Act (“NEPA”), America’s “basic national charter for protection of the environment,”² requires federal agencies to take a “hard look” at the environmental consequences of their actions before taking action.³ In this way, NEPA ensures that federal agencies “will have available, and will carefully consider, detailed information concerning significant environmental impacts” and that such

¹ 81 Fed. Reg. 41,334.

² 40 C.F.R. § 1500.1(a).

³ *Kleppe v. Sierra Club*, 427 U.S. 390, 410, n. 21 (1976); 40 C.F.R. § 1500.1(a).

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information “will be made available to the larger [public] audience that may play a role in both the decision-making process and the implementation of the decision.”⁴

NEPA requires that all federal agencies prepare an EIS for all “major Federal actions significantly affecting the quality of the human environment.” In determining whether an action may have “significant” impacts on the environment, an agency must consider the “context” and “intensity” of the action.⁵ “Context” means that the significance of the project “must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interest, and the locality.”⁶

The intensity of the action is determined by considering the ten factors enumerated in the regulations. These include: (1) impacts that may be both beneficial and adverse; (2) the degree to which the proposed action affect public health or safety; (3) unique characteristics of the geographic area such as proximity to ecologically critical areas; (4) the degree to which the effects on the human environment are likely to be highly controversial; (5) the degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks; (6) the degree to which the action may establish a precedent for future actions with significant effects; (7) whether the action is related to other actions with individually but cumulatively significant impacts; (8) the degree to which the action may cause loss or destruction of significant scientific, cultural, or historical resources; (9) the degree to which the action may adversely affect a species listed under the Endangered Species Act (“ESA”) or its critical habitat; and (10) whether the action threatens a violation of federal, state or local environmental laws.⁷

The presence of even just “one of these factors may be sufficient to require preparation of an EIS in appropriate circumstances.”⁸ If “substantial questions as to whether a project . . . may cause significant degradation of some human environmental factor,” an EIS must be prepared.⁹

NEPA regulations dictate that “[i]t is only when the proposed action ‘will not have a significant effect on the human environment,’ that an EIS is not required.”¹⁰ Wherever a question exists as to whether an EIS is required, an agency must ordinarily at least prepare an EA, which is used to determine whether the environmental effects of the action are “significant” and therefore require the preparation of an EIS.¹¹ An EA is “a concise public document that briefly provides evidence and analysis for determining whether to prepare an EIS or a finding of no significant impact.”¹²

BOEM has stated that it will conduct an EA, and not an EIS, for the Proposed Action, and only analyze the impact of the “issuance of wind energy lease or leases” and “the approval of site assessment activities.”¹³ This is inadequate under the requirements of NEPA; the Proposed Action meets nearly every significance factor, clearly triggering BOEM’s duty to prepare an EIS and examine the full scope of activities authorized by the leases themselves, namely, the construction and operation of wind energy facilities.

⁴ *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989).

⁵ 40 C.F.R. § 1508.27.

⁶ *Id.* at § 1508.27(a).

⁷ *Id.* at § 1508.27(b)(1)-(10).

⁸ *Ocean Advocates v. U.S. Army Corps of Eng’rs*, 402 F.3d 846, 865 (9th Cir. 2005).

⁹ *Idaho Sporting Congress v. Thomas*, 137 F.3d 1146, 1149 (9th Cir. 1998).

¹⁰ *National Audubon Soc. v. Hoffman*, 132 F.3d 7, 13 (2nd Cir. 1997) (citing 40 C.F.R. § 1508.13, emphasis by court).

¹¹ 40 C.F.R. § 1501.4.

¹² *Id.* at § 1508.9.

¹³ 81 Fed. Reg. 41,334.

2. The Proposed Action Would Have Cumulatively Significant Impacts

CEQ regulations require the preparation of an EIS if the proposed action “is related to other actions with individually insignificant but cumulatively significant impacts.”¹⁴ “Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment.”¹⁵ A cumulative impact is defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency. . . or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”¹⁶ BOEM’s proposed lease sale clearly has significant cumulative impact triggering their duty to prepare an EIS.

The Proposed Action is described in the Federal Register, in part, as the “issuance or one or more commercial wind energy leases.”¹⁷ However, BOEM has stated that the EA will not analyze the construction, operation, or decommissioning impacts of any wind energy facilities, but instead will limit the analyses to the effects of lease issuance resulting from site characterization (i.e., surveys of the lease areas and potential cable routes) and site assessment activities (installation and operation of meteorological buoys).¹⁸ A separate, project specific NEPA analysis will be required for the construction and operation of any wind energy facility, according to BOEM.¹⁹ However, this segmentation of the environmental analysis is improper under NEPA and violates one of the statute’s central tenets. NEPA was designed to give policy makers and the public a “hard look” at the environmental impacts of federal actions, including those impacts that are reasonably foreseeable.

Here, once leases are granted in the Call Area, it is reasonably foreseeable that those areas will be developed for wind energy. Indeed, BOEM recognizes this in the context of offshore oil and gas development, analyzing the environmental impacts of offshore drilling operations at the lease sale stage.²⁰ Because BOEM may not limit its analysis to site assessment activities, and must look at the reasonably foreseeable impacts of a wind energy lease in the Call area, the rest of these comments will focus on potential impacts stemming from the construction and operation of wind energy in the Call Areas.

3. The Proposed Action Has Adverse Impacts and Affects Public Health and Safety

BOEM must prepare an EIS because the Proposed Action will have adverse effects on the marine environment. Marine mammals, birds, fish, and coral communities will all be impacted by wind energy development offshore Oahu.

a. Impacts to Marine Mammals

There are many species of marine mammals documented in waters off Oahu which could be found in or near the proposed lease area. See Table 1, below. The development of wind energy in marine areas may pose

¹⁴ 40 C.F.R. § 1508.27(b)(7).

¹⁵ *Id.*

¹⁶ 40 C.F.R. § 1508.7.

¹⁷ 81 Fed. Reg. 41334.

¹⁸ <http://www.boem.gov/Call-for-Nominations-EA-Task-Force/>

¹⁹ *Id.*

²⁰ E.g., Gulf of Mexico Oil and Gas Lease Sales: 2017-2022, Draft EIS, Volume 1, available at <http://www.boem.gov/BOEM-2016-018-v1/> (“This Multisale EIS’s analysis focuses on identifying the baseline conditions and potential environmental impacts of oil and natural gas *leasing, exploration, development, and production* in the GOM.”).

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. Marine mammals will experience several types of impact from the leasing, construction and operation of wind energy facilities in the Call Areas.

<u>Common Name</u>	<u>Scientific Name</u>
Blainville's Beaked Whale	<i>Mesoplodon densirostris</i>
Blue Whale	<i>Balaenoptera musculus</i>
Bottlenose Dolphin	<i>Tursiops truncatus</i>
Cuvier's Beaked Whale	<i>Ziphius cavirostris</i>
Dwarf Sperm Whale	<i>Kogia sima</i>
False Killer Whale	<i>Pseudorca crassidens</i>
Fin Whale	<i>Balaenoptera physalus</i>
Grampus, Risso's Dolphin	<i>Grampus griseus</i>
Humpback Whale	<i>Megaptera novaeangliae</i>
Killer Whale	<i>Orcinus orca</i>
Melon headed Whale	<i>Peponocephala electra</i>
North Atlantic Right Whale	<i>Eubalaena glacialis</i>
Pantropical Spotted Dolphin	<i>Stenella attenuata</i>
Pygmy Killer Whale	<i>Feresa attenuata</i>
Pygmy Sperm Whale	<i>Kogia breviceps</i>
Rough toothed Dolphin	<i>Steno bredanensis</i>
Short finned Pilot Whale	<i>Globicephala macrorhynchus</i>
Sperm Whale	<i>Physeter macrocephalus</i>
Spinner Dolphin	<i>Stenella longirostris</i>
Striped Dolphin	<i>Stenella coeruleoalba</i>
Hawaiian Monk Seal	<i>Monachus schauinslandi</i>

Table 1: Marine mammals found offshore Oahu

First, leasing in the Call Areas, Oahu North and Oahu South, will result in increased sound within or adjacent to recently identified biologically important areas for several species of cetacean.²¹ The noise comes from two fundamentally different contributions. The first is construction (and decommissioning) activities that can generate noise of considerable intensity but within a limited time period. The second is operation of the wind farm where turbine machinery (and service activities) creates a low-intensity, yet almost continuous, underwater noise.²²

Sound is critical to cetaceans for communicating, detecting predators and prey, navigating, and sensing other important environmental cues. Increase anthropogenic sound from single or multiple sources can have deleterious effects on cetaceans' acoustic habitats, reducing their ability to detect critical sounds, often across large areas and long periods of time. Anthropogenic noise can cause direct, or acute, effects ranging from alternating important behaviors and threshold shifts in hearing, to injury, or even death, in certain circumstances.²³ Both chronic and acute effects of noise have the potential to negatively affect an individual's

²¹ Megan Ferguson *et al.* (2015), *Aquatic Mammals*: 41(1), 2-16, DOI 10.1578/AM.41.1.2015.2, available at http://www.aquaticmammalsjournal.org/images/files/AM_41.1_Complete_Issue.pdf

²² Tougard *et al.* (2008) Underwater noise from construction and operation of offshore wind farms. *Bioacoustics* 17:1-3.

²³ Ferguson *et al.* 2015.

health and fitness in certain circumstances, ultimately leading to effects on a population's fecundity or survivorship.²⁴

Construction of offshore wind farms generates noise similar in nature to noise caused by other offshore activities such as oil and gas extraction and construction of piers and bridges. Construction activities can be very noisy, in particular percussive pile drivings of monopile foundations.²⁵ These create impact sounds of considerable intensity, with peak levels well above 200 dB re 1 μ Pa close to the piling site. "Behavioural reactions have been demonstrated at distances up to 15 km from the piling site (Carstensen et al. 2006; Tougaard et al. 2006). Whether these behavioural reactions have a detrimental impact on the local or regional population of marine mammals cannot be stated in general. The answer will depend on a range of local factors such as density of animals, importance of the area to the animals, sound transmission characteristics, and possibility for the animals to withdraw temporarily to other areas during piling. It is thus important that new offshore wind farm projects be judged on a case-by-case basis and any impact judged in relation to and in combination with other activities of a similar type (oil and gas, piers and bridges) in the region."

Sound generated from wind turbine operations generally would be continuous, of low intensity, and at low frequencies (below a few kHz), and would be transmitted directly to the water column from the turbine shaft.²⁶ Playback experiments involving harbor porpoises and harbor seals prompted a distinct reaction by both species to wind-turbine sounds.²⁷

The most immediate risk associated with the development of wind energy in the Call Areas is from site assessment activities, which would likely involve the use of sound-producing technologies to evaluate the seafloor and search for potential hazards. The effects of these technologies are not well understood, and have the potential to take marine mammals as defined by the Marine Mammal Protection Act (MMPA). Mitigation measures for any take authorizations occurring during the development or operational phase of the lease must include time/area closures for periods of migration or when animals are spotted, prohibiting activities at times of low visibility, and providing animals with sound alerts when noise polluting activities are to commence.

In addition to noise pollution, the leasing and development of wind energy in the Call Areas will produce increased vessel traffic which would increase the probability of marine mammal vessel strikes. To minimize the probability of vessel strikes, any take authorizations under the MMPA must include requirements for vessels to slow down and maintain a certain distance from any spotted animal.

Another issue BOEM must address is entanglement. The floating wind turbines will be anchored to the sea floor by a cable, and also have transmission cables carrying power back to land. These cables have the potential to entangle marine mammals, and whales in particular, and any development must incorporate technologies and techniques to minimize entanglement. In addition to entanglement, the presence of cables has the potential to alter migration patterns and movements of marine mammals, as they attempt to avoid the developed areas, and BOEM must ensure adequate spacing and density in order to ensure that whales and other species are unharmed.

²⁴ *Id.*

²⁵ Tougaard *et al.* 2008.

²⁶ *Id.*

²⁷ *Id.*

Noise pollution, vessel strikes, and entanglement are all issues facing marine mammals from the development of offshore wind, and BOEM's environmental analysis must evaluate these effects at both the construction and operation stage.

b. Impacts to Birds

Offshore wind development has the potential to have detrimental impacts on birds in a number of ways. First, seabirds can be negatively impacted through the loss and modification of resting and foraging grounds. Secondly, they are killed as a result of collisions with turbine blades: for example, significant fatalities have been reported at marine wind farms situated close to breeding colonies.²⁸ It is inevitable that birds will collide with turbines, particularly under adverse weather conditions with poor visibility.²⁹ Third, several studies have found that offshore wind farms act as barriers to travelling seabirds. Displacement from the favored routes is likely to increase travel distances, causing greater energy expenditure and potentially impacting the survival of nestlings by lowering provisioning rates.³⁰ For example, at an offshore wind farm in Denmark, travelling birds displayed profound avoidance behavior, with the number of birds entering the area declining dramatically following the construction of the wind farm.³¹

In addition to the impact of the turbines themselves, artificial lighting on offshore turbines can attract migrating birds and cause deleterious effects. Many nocturnal seabird species are highly attracted to artificial light. The attraction to light by nocturnal feeding petrels has been hypothesized to result from their adaptations and predisposition to exploit bioluminescent prey and from a predilection to orient to specific star patterns. Attraction to artificial lighting can result in collisions of birds with wind turbines, can attract seabirds away from their normal feeding grounds, and can cause seabirds to circle the light source endlessly, eventually dying from exhaustion or collision with the turbine. In order to minimize or eliminate these impacts, BOEM must consider best practices for artificial lighting, or eliminate lighting from the turbines altogether.³²

BOEM must thoroughly document avian species use of the Call Areas through all seasons in order to assess impacts such as collisions with turbine, changes in behavior due to project lighting, or altered migration. It is vital that the design, position and alignment of future offshore wind farms take into account the distribution and sensitivity of seabird populations (Garthe and Hüppop 2004, Fox *et al.* 2006), whilst avoiding zones of dense migration (Hüppop *et al.* 2006).³³ BOEM must conduct a risk assessment of the potential repercussions of the Proposed Project to avian species in order to accurately estimate the harm it will have on bird populations.

BOEM must evaluate impacts to the 19 seabird species that breed on the Main Hawaiian Islands and associated offshore islets, as well as seabird species that may use the Call Areas for foraging and movement. See Table 2, below. Particular attention should be placed on two main island species, the Newell's shearwater and Hawaiian petrel, which are protected under the Endangered Species Act.

²⁸ Everaert, J. and Stienen, E.W.M. (2007) Impacts of wind turbines on birds in Zeebrugge (Belgium). *Biodiv. Conserv.* 16:3345-3359.

²⁹ Hüppop, O. *et al.* (2006) Bird migration studies and potential collision risk with offshore wind turbines. *Ibis* 148:90-108.

³⁰ Fox *et al.* (2006) Information needs to support environmental impact assessment of the effect of European marine offshore wind farms on birds. *Ibis* 148 (Suppl. 1): 129-144.

³¹ Desholm, M. and Kahlert, J. (2005) Avian collision risk at an offshore wind farm. *Biol. Lett.* 1: 296-198.

³² Poot, H. *et al.* (2008) Green Light for Nocturnally Migrating Birds, *Ecology and Society* 13(2):47.

³³ Fox *et al.* (2006), Hüppop *et al.* (2006).

<u>Common Name</u>	<u>Scientific Name</u>
Hawaiian petrel	<i>Pterodroma sandwichensis</i>
Newell's shearwater	<i>Puffinus auricularis newelli</i>
Laysan albatross	<i>Phoebastria immutabilis</i>
Black-footed albatross	<i>Phoebastria nigripes</i>
Short-tailed albatross	<i>Phoebastria albatrus</i>
Tristram's storm-petrel	<i>Oceanodroma tristrami</i>
Band-rumped storm petrel	<i>Oceanodroma castro</i>
Black noddy	<i>Anous minutus</i>
Brown noddy	<i>Anous stolidus</i>
Red-footed booby	<i>Sula sula</i>
Brown booby	<i>Sula leucogaster</i>
Masked booby	<i>Sula dactylatra</i>
Christmas shearwater	<i>Puffinus nativitatis</i>
Wedge-tailed shearwater	<i>Puffinus pacificus</i>
Great frigatebird	<i>Fregata minor</i>
Red-tailed tropicbird	<i>Phaethon rubricauda</i>
White-tailed tropicbird	<i>Phaethon lepturus</i>
Sooty tern	<i>Onychoprion fuscatus</i>
Gray-backed tern	<i>Onychoprion lunatus</i>
White tern	<i>Gygis alba</i>
Bonin petrel	<i>Pterodroma hypoleuca</i>

Table 2: Seabirds found offshore Oahu

BOEM must also consider the more than twenty species of shorebirds, ducks and geese that migrate to the main Hawaiian Islands each winter and may fly through the Call Areas, including Pacific golden plover, Black-bellied plover, Bristle-thighed curlew, Pectoral sandpiper, Least sandpiper, Semipalmated sandpiper, Sharp-tailed sandpiper, Spotted sandpiper, Wandering tattler, Ruddy turnstone, Sanderling, Long-billed dowitcher, Wilson's snipe, Greater yellowlegs, Cackling goose, Bonaparte's gull, Ring-necked duck, Ruddy duck, Green-winged teal, Redhead, Lesser scaup, Northern pintail, Northern shoveler, and White-faced ibis.

c. Impacts to Bats

BOEM must consider impacts to the federally and state endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*). Although little is known about its movements and dispersal, Hawaiian hoary bats may make inter-island flights during dispersal which could make dispersing bats vulnerable to impacts from offshore wind turbines in the Call Areas. Mortality of bats from wind turbines is well-documented.³⁴

d. Impacts to Fish

The construction and operation of offshore wind pose a number of well documented threats to fish; construction impacts include habitat disruption and anthropogenic noise, and operation of these facilities causes long term effects from habitat alteration and electromagnetic field ("EMF") disturbance.³⁵ It is fundamentally

³⁴ Arnett, E.B. et al., *Impacts of wind energy development on bats: a global perspective*, pp. 295-323 In *Bats in the Anthropocene: Conservation of Bats in a Changing World*, C.C. Voight and T. Kingston (eds.).

³⁵ Helen Bailey et al., *Assessing environmental impacts of offshore wind farms: lessons learned and recommendations for the future*, BIOMED CENTRAL, AQUATIC BIOSYSTEMS, (Sep 14, 2014),

important that such environmental impacts be carefully considered in order mitigate harm to marine fish and other species to the greatest extent possible.

i. Construction Impacts

Impacts to marine fish from turbine construction include boat and equipment strikes, seismic survey disruption, and pollutant and toxic discharge.³⁶ However, the most damaging construction harms come as a result of foundation pile driving. Pile driving is the most common method used to secure turbine foundations.³⁷ The pile driving process consists of thousands of hammer blows that drive turbine foundations into the ocean floor, creating high pressure multiple pulse sound that can travel far beyond the immediate vicinity of the construction area.³⁸

Pile driving can harm marine fish in at least two ways. First, by producing intense sound waves that cause disorientation, hearing damage, and lethal tissue damage to marine fish.³⁹ potentially creating population wide harm through disruption of migratory and reproductive processes.⁴⁰ Second, by increasing ambient sediment levels that can suffocate fish by clogging their gills, and even cause food web disruption by harming benthic communities that marine fish depend on to survive.⁴¹

The harms of floating turbine construction can be offset using a number of mitigation measures. The Center strongly suggests that BOEM consider the following mitigation measures in its environmental analysis:

- *Soft Start Technique*: The practice of starting pile driving at low intensity, and increasing to full strength over a period of 15-20 minutes. This gives marine mammals and fish a chance to move away before being harmed.⁴²
- *Warning Mechanisms*: Devices such as “pingers” are used to transmit an underwater acoustic signal that cause fish to evacuate a construction area before pile driving begins, further reducing the risk of exposure to intense noise.⁴³
- *Construction Timing and Project Placement*: Project construction should be scheduled outside of key migratory and reproductive periods, and away from areas of key migratory and reproductive importance, in order that disruption to the natural cycle of fish populations is decreased to the greatest extent possible.⁴⁴

<http://aquaticbiosystems.biomedcentral.com/articles/10.1186/2046-9063-10-8> [*hereinafter* Bailey]; *Environmental Impacts of Offshore Wind Power Production in the North Sea*, WORLD WILDLIFE FOUNDATION, http://awsassets.wwf.no/downloads/wwf_a4_report_havvindrapport.pdf [*hereinafter* WWF]; *Effects of EMFs from Undersea Power Cables On Elasmobranchs and Other Marine Species*, NORMANDEAU ASSOCIATES (prepared for BOEMRE) <http://www.hawaii.edu/fishlab/pubs/Normandeau%20Associates%20et%20al.%202011.pdf> [*hereinafter* Normandeau].

³⁶ Bailey, at 3.

³⁷ *Id.*, 2-3.

³⁸ *Id.*, at 5.

³⁹ *Id.*, 3-4; WWF, at 2.

⁴⁰ WWF, 3-4.

⁴¹ *Id.*, at 4.

⁴² *Id.*, at 2.

⁴³ *Id.*

⁴⁴ *Id.*

- *Sound Protective Covering*: The application of sound protective materials over the pile driving area that would insulate and reduce noise volume. This practice is contingent upon weak water current, and the potential for habitat impacts stemming from protective covering need also be considered. But given the right conditions, sound protective covering could potentially halve the sound intensity of pile driving.⁴⁵

ii. *Operation Impacts*

Turbine operation poses additional risks to marine fish through habitat alteration and the creation of EMFs. Submerged parts of floating turbines tend to cause changes in local currents, and often create a localized erosion effect on the surrounding sea bed called “scouring.”⁴⁶ These habitat changes have the potential to harm benthic species within the range of the turbines and could cause further food web disruption if not properly managed.⁴⁷

The impacts of EMFs are less immediately visible but retain the potential for significant harm. EMFs are created by electric currents that run through the cables used to transfer energy generated by the wind turbines.⁴⁸ The interaction between electric currents and conductive sheathing creates an EMF radius around the cable, the intensity of which is determined by the voltage being transferred.⁴⁹ As a result, EMFs increase in intensity as turbines generate more energy.⁵⁰

There are a number of species that have documented reactions to EMFs, though more scientific research is necessary to fully understand the degree of associated impacts.⁵¹ EMFs are of particular concern for elasmobranch fish species, like sharks and rays, that rely on EMF sensors for multitude of essential life functions.⁵² Potential harmful impacts of EMF interference include migratory disruption, individual displacement, predator detection, food and prey detection, reproductive interference, and the disruption of essential nursery habitat.⁵³

The sandbar shark (*Carcharhinus plumbeus*), a federally managed species occurring in waters along the east coast, Gulf of Mexico, and Hawaii, is a good example of how elasmobranch species may be affected by EMFs. Sandbar sharks are highly migratory and occur in depths between 20-250 meters, with both juvenile and adult sharks remaining close to the sea floor in search of prey.⁵⁴ Living so close to the seafloor, and relying heavily on well developed electrosensory systems, sandbar sharks would likely encounter transmission cable EMFs, potentially impacting their migratory, predatory, and reproductive efficiency.⁵⁵

The hunting and migratory tendencies of the sandbar shark, along with its reliance on electrosensory input, shows why BOEM must seriously consider the effects of EMFs on elasmobranch species generally. While data is still limited regarding the severity of impacts on any particular species, the potential for both interaction

⁴⁵ *Id.*, at 3.

⁴⁶ Olivia Langhamer, *Artificial Reef Effect in relation to Offshore Renewable Energy Conversion: State of the Art*, SCIENTIFIC WORLD JOURNAL (2012), <http://www.hindawi.com/journals/tswj/2012/386713/> [*hereinafter* Langhamer].

⁴⁷ WWF, at 6.

⁴⁸ Normandeau, at 1.

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ *Id.*, 54-68.

⁵² *Id.*, at 54.

⁵³ *Id.*, 63-64.

⁵⁴ *Id.*, at 67.

⁵⁵ *Id.*, 67-68.

and harm remains clear, especially for species of magnified importance. The Call Areas are within the known habitat of the scalloped hammerhead (*Sphyrna lewini*), the first and only shark listed under the federal Endangered Species Act.⁵⁶ Like the sandbar shark, the scalloped hammerhead is an elasmobranch, with documented potential for negative impacts to its essential life functions.⁵⁷ These impacts must be considered as an essential part of BOEM's environmental analysis.

Finally, floating turbines can create an artificial reefing effect.⁵⁸ Artificial reefing has the potential to provide a significant benefit to local species if managed in a way that enhances the local ecology.⁵⁹ But significant consideration must be given to the issue of potentially facilitating the introduction of invasive species providing unnatural and unprotected habitat where alien species can easily establish.⁶⁰

The potential harms of turbine operation should be carefully considered in to be mitigated to the greatest extent possible. The Center strongly suggests that BOEM includes the following considerations in its environmental analysis:

- *Ecology and Species in Project Area:* BOEM should make sure to identify the area where biological impacts may occur, and which species are present in or migrate through it. In order that BOEM is adequately aware of which species any potential offshore wind energy project might impact. This analysis should be inclusive of areas that transmission cables pass through, even when leading away from the primary turbine locations.
- *Biologically Important Habitat:* When deciding where a project is located, BOEM should consider what kind of biological services the surround habit provides. BOEM should take every measure possible to avoid the disruption key migratory, nursery, reproductive, or feeding habitats.
- *Artificial Reefing:* Turbine structures, foundations, and anchors should be constructed with anti-scouring protection technology that best suits the habitat needs of species local to the project area in order to facilitate an artificial reefing effect that enhances biological integrity and protects against the establishment of invasive species.⁶¹
- *Transmission Cable Placement:* Transmission cables should be placed in areas that are least likely to interfere with the natural life functions of EMF sensitive species, ideally outside of migratory, feeding, and reproductive habitat relied on by elasmobranchs, such as the scalloped hammerhead shark.

⁵⁶ *Scalloped Hammerhead*, IUCN REDLIST, (accessed on Jul 22, 2016, 5:16 PM), <http://www.iucnredlist.org/details/39385/0>; *Scalloped Hammerhead Shark*, NATIONAL MARINE FISHERIES SERVICE, <http://www.fisheries.noaa.gov/pr/species/fish/scalloped-hammerhead-shark.html>.

⁵⁷ Normandeau, Table ES-4, at 5.

⁵⁸ *Id.*, at 7.

⁵⁹ Langhamer, at 3.

⁶⁰ Langhamer, at 3; WWF, at 7.

⁶¹ For an overview of possible anti-scoring/artificial reefing technologies, see Langhamer, 3-5.

e. Impacts to Coral

The construction of any offshore wind energy facility would involve the laying of transmission cables from the project site to the coast, potentially harming corals and disturbing benthic communities along the cable's route. The world's corals and coral reef ecosystems are in crisis, and face widespread threats ranging from ocean acidification, bleaching, warming temperatures, overharvest, and disease. Their slow growth and limited ability to recover make them particularly vulnerable to anthropogenic activities such as cable laying.⁶² According to coral scientists, "reefs are likely to be the first major planetary-scale ecosystem to collapse in the face of climate changes now in progress,"⁶³ and any additional injury to their survival must be carefully evaluated. In its environmental analysis, BOEM should carefully consider the dangers that offshore construction poses to corals.

Additionally, corals are put at further risk by the potential for introduction of invasive species.⁶⁴ BOEM's environmental analysis should include consideration of invasive species prevention measures that mitigate invasive introduction through typical avenues like ballast water discharge, and species that attach to the hulls of ships.

4. The Proposed Action Would have Highly Uncertain, Unique or Unknown Risks

BOEM must prepare an EIS because the proposed action involves highly uncertain, unique or unknown risks. The effects of wind energy development on marine mammals, seabirds, fish and other species is not well understood and few comprehensive studies have been conducted to understand how the installation and operation of offshore wind turbines would affect marine species. What few studies exist were conducted in Europe, in different environments and with different species than exist in the Call Areas. In addition to evaluating the impacts of the proposed technology on marine mammals, birds, and fish, BOEM must partner with other agencies in order to conduct multi-year wildlife surveys in the areas of proposed development in order to gain an understanding of the environmental baseline in which these projects would be operating.

5. The Proposed Action Affects Threatened and Endangered Species

Oahu is home to several species of endangered marine mammals, seabirds, and fish that may be impacted by offshore wind development in the Call Areas. Humpback whales, Hawaiian monk seals, 5 species of turtles (green, hawksbill, leatherback, loggerhead, olive ridley), Newell's shearwaters and Hawaiian petrels, and hammerhead sharks all inhabit the call area and may be impacted by its development for offshore wind energy.

Conclusion

BOEM must conduct a full EIS to evaluate downstream impacts from issuing wind energy leases offshore Oahu, including the construction, installation, operation, and decommissioning of projects within the Call Areas. It is reasonably foreseeable that marine mammals, fish, birds and other species will be impacted by

⁶² C.M. Turley, Corals in deep-water: will the unseen hand of ocean acidification destroy cold-water ecosystems? *Coral Reefs* (2007) 26: 445-448.

⁶³ Vernon *et al.* 2009.

⁶⁴ WWF, at 7; Langhamer, at 3.

these developments and NEPA requires that BOEM must adequately assess their effects on the marine ecosystem.

We appreciate the opportunity to comment on the Proposed Action. Please contact me if you have any questions.

Sincerely,



Emily Jeffers
Staff Attorney
Center for Biological Diversity
(510) 844-7109
ejeffers@biologicaldiversity.org



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SEP 01 2016

BUREAU OF OCEAN ENERGY MANAGEMENT

COLTON K. CHING
Vice President
Energy Delivery

August 23, 2016

Bureau of Ocean Energy Management
Pacific OCS Region
Attn: Joan Barminski, Regional Director
760 Paseo Camarillo, Suite 102 (CM 102)
Camarillo, California 93010

Joan
Dear Ms. Barminski:

The Hawaiian Electric Company offers the following comments regarding the two Notices recently issued by the Bureau of Ocean Energy Management (BOEM): (1) Call for Information and Nominations for Commercial Leasing for Wind Power on the Outer Continental Shelf, Offshore the Island of Oahu, Hawaii (Docket No. BOEM-2016-0036); and, (2) Notice of Intent to Prepare an Environmental Assessment for Commercial Wind Leasing and Site Assessment Activities on the Outer Continental Shelf Offshore the Island of Oahu, Hawaii (Docket No. BOEM-2016-0049).

To reach 100% renewable energy in 2045, Oahu appears to need additional resources beyond those available on island. As such, Hawaiian Electric is open to all technologies that may help Hawaii achieve its energy goals, including offshore wind. Hawaiian Electric plans to continue to perform further evaluation of the viability of these resources and recognizes that any proposed project will also need to consider community and other stakeholder input.

Thank you for the opportunity to provide these comments. Please feel free to contact me at (808) 543-7986 or colton.ching@hawaiianelectric.com, if you have any questions.

Sincerely,

Handwritten scribble or signature at the top of the page.

Faint, illegible text in the middle section of the document, possibly representing a list or a set of instructions.

IDENTIFICATION NUMBER: 11-10000001

201-01-5010

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Mālama Nalu ‘Ohana

www.malamanaluoohana.com

No Ka‘ena Point Wind Farm

Nalu: (N) Waves, Surf; (V) Meditate, Ponder, Contemplate

RE: Comments on Hawaii EA; *Oahu North Site*

September 7, 2016

Regional Director

BOEM Pacific OCS Region

760 Paseo Camarillo

Suite 102

Camarillo, California 93010

Submitted digitally via: <https://www.regulations.gov/searchResults?rpp=25&po=0&s=BOEM-2016-0049&fp=true&ns=true>

Dear BOEM Regional Director:

Our Mālama Nalu ‘Ohana is a group of surfers, clean energy advocates, fishermen, environmentalists, and kānaka maoli organized in August 2016 to address your proposal to consider allowing wind farm development in the waters off Ka‘ena Point on the North Shore of Oahu. We are submitting this letter during your public scoping period advertised via the Federal Register. Our letter outlines our concerns with your proposal to consider leasing ocean waters off Ka‘ena Point for wind farm development – our comments are limited to the “*Oahu North*” portion of your proposed action. A wind farm at this location would be an affront to our kānaka māoli, bar us from important fishing grounds, ruin our sunsets, rob ocean energy and disturb our world-class west and north swells, reduce our financial net worth, mar our night sky with industrial red blinking lights, contaminate our ocean, kill our wildlife, and cause fear and stress in the dying moments of all O‘ahu kānaka māoli. We will do everything possible to block wind turbine installation in the ocean waters off Ka‘ena Point. We also believe any purpose or need you may have for a wind farm in our ocean could be met, without these adverse environmental and cultural effects, by using solar with utility-scale battery storage. Kamehameha Schools, residents, and businesses in Hawaii are being blocked from installing solar PV by our utility company – while you consider authorizing development of this egregious project - ‘A‘ole! E mālama nalu. Include solar with battery storage among the alternatives you fully consider in your NEPA documents so you can help improve our environment rather than destroy it.

On page 6 of your March 7, 2012 Hawaii Task Force PowerPoint

http://www.boem.gov/uploadedFiles/BOEM/Renewable_Energy_Program/State_Activities/Task%20For ce%20Purpose%20BOEM.pdf%20030712.pdf you indicate one purpose of the Task Force is to coordinate with Federal and local agencies and tribes to ascertain potential conflict areas such as “environmental, fishing, military, navigational, air space, etc.” “as early as possible and throughout the process”. In

August 2015, the North Shore Neighborhood Board voted against the wind farm after a presentation from the developer. The meeting was attended by over 100 residents from the area. In addition, your applicant met individually with members of our community and told them if the community opposes the wind farm, they will drop the project from consideration. As a result of your coordination since 2012, you have excluded certain areas from further at-sea wind farm consideration due to certain criteria while the concerns of Native Hawaiians and the North Shore community do not appear to have been heard. The North Shore community has voiced opposition to the proposed project – in numerous venues, via a broad diversity of representatives. We are left wondering why this project is still proceeding through the NEPA planning process – we’d understood the developer would drop the project if the community didn’t support it. We not only don’t support it – we vigorously oppose it. At your agency’s July 21, 2016, well-attended public meeting on the North Shore, all speakers and, in two votes, all public attendees, unanimously voiced opposition of any further consideration of the Kae’na (*Oahu North*) site.

In addition to community opposition to the project, the public interest would be better served by any number of alternative sources of energy including on-island solar PV with battery storage. Ensure the project “Purpose and Need” described in your NEPA documents is not limited to the lease applicant’s purported purpose and need (to profit by developing the wind project). Your Purpose and Need statement must express the proposed action’s underlying purpose and need from a public interest perspective. In addition, the National Environmental Policy Act of 1969, as amended (Pub. L. 91-190, 42 U.S.C. 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, and Pub. L. 97-258, § 4(b), Sept. 13, 1982) (NEPA) requires you to “objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated” and “Include reasonable alternatives not within the jurisdiction of the lead agency.” Your agency has stated that it is pursuing these projects to help meet Hawai’i’s clean energy needs. The significant adverse effects of at-sea wind development must be presented objectively and comprehensively, along with an analysis of other less-invasive alternatives that would meet clean energy needs. The public prefers solar PV with battery storage (see next section) to the proposed Kae’na wind project because the social, cultural, spiritual, and environmental effects of off-shore wind development are so severe. Unlike Europe, the UK and the Netherlands, where most of the offshore wind energy is generated in the world today, Hawaii is located at a latitude ranging from 19° to 22° North. This gives us a significantly greater amount of solar energy than what is available to many other countries pursuing renewable wind energy. We urge you not to proceed with authorizing the proposed wind farm in the waters off Ka’ena Point for various reasons outlined in this letter demonstrating that implementing this proposal would violate the National Environmental Policy Act because less harmful alternatives such as solar energy are readily available.

If you do continue to pursue the waters off Ka’ena point within the *Oahu North* site for wind farm development, please ensure your NEPA documents include a thorough analysis and disclosure of the effects the project would have to the following important aspects of our lives:

I. Leina a ka `Uhane, white rock limestone kānaka māoli soul leaping formation

Situating a wind farm offshore from Leina a ka `Uhane white rock limestone soul leaping formation is an affront to Native Hawaiians and to those of us who care for Native Hawaiian rights. As kānaka maoli of O‘ahu near death, they travel west to Ka‘ena Point where the fate of departing souls is determined. When the person’s brush with death is fleeting, they survive to return another day. Departing souls would either pass into one of several spirit realms or be returned to the body to continue life. If the proposed wind farm were to be constructed, dying O‘ahu kānaka maoli would see the wind turbines during the day or, at night, bright blinking industrial lights, as they travel toward the Leina a ka `Uhane. The Hawaiian’s believe this industrial scene would cause fear and stress - irreparable injury - in the final moments of life of O‘ahu kānaka māoli.

Will the industrial turbine structures be made invisible or removed from sight when a Native Hawaiian nears death on O‘ahu during the day, so they are not frightened by the industrial landscape? In the night when someone is close to death, can you turn off the bright industrial blinking lights so they don’t feel confused and frightened when they arrive at Ka‘ena Point? Of course you cannot implement these mitigation actions, therefore, out of respect for the Native Hawaiians, this project must not go forward.. If, however, you decide to go forward, ignoring the needs and rights of the Native Hawaiians, by granting the lease to this promoter, then please, in an appendix in your NEPA documents, list the names of all the Hawaiians who will be adversely affected in addition to the names of all of the Native Hawaiians consulted and the dates of the consultations.



Figure 1. Leina a ka `Uhane, the location O‘ahu kānaka māoli travel to near death; departing souls pass into one of several spirit realms from this limestone rock formation.

Native Hawaiian families with lineages from all aapuaa on O‘ahu would be irreparably harmed by wind farm development in the O‘ahu North site due to the effect to them as they approach the Leina a ka

Every native Hawaiian on O‘ahu who will face death during the 50 year term of your wind turbine installation may be irreparably harmed by installation of a wind farm off Kae‘na Point. Some of these people have not even been born yet, so even if you wanted to, it’s not possible for you to “coordinate” with them to buy their support.

II. Ensure NEPA “Purpose and Need” Reflects the Public’s Interest, not just the Applicant’s Interest.

Ensure that the “Purpose and Need” described in your NEPA documents is not limited to the permit/lease applicant’s purported purpose and need (to profit by developing the wind project). Your Purpose and Need statement must express the proposed action’s underlying purpose and need from a public interest perspective. In addition you must “objectively evaluate all reasonable alternatives” and “Include reasonable alternatives not within the jurisdiction of the lead agency”.

Your agency has stated that it is pursuing these projects to help meet Hawai‘i’s clean energy needs. The significant adverse effects of at-sea wind development must be presented objectively and comprehensively, along with an analysis of other less-invasive and less problematic alternatives that would meet clean energy needs. The public prefers solar PV with battery storage (see next section) over the proposed Kae‘na wind project because the social, cultural, spiritual, and environmental and economic effects of off-shore wind development are so severe. To adequately assess the solar/battery storage alternative, the Department of Energy should be a participating agency in processing your proposal and finalizing your NEPA documents. In addition, the Government Accountability Office (GAO) may be able to assist as it relates to government efficiency.

The Purpose and Need statement should be fully detailed and describe specific needs for certain MW of energy during certain periods of the day/night on a certain percentage of days. Sideboards on the purpose and need should be explained. Please be objective and refrain from describing purpose and need so restrictively that it precludes consideration of options other than the at-sea wind development. It is your burden to explain how the Ka‘ena Point Wind Farm alternative serves the public’s interest better than the other alternatives. Mark Glick listed biofuel and neighbor island renewables as alternatives in his May 2016 Task Force presentation (Figure 2). Assess the potential for fast-growing trees grown on O‘ahu, Maui, the Island of Hawai‘i or other islands to provide the energy in lieu of this wind farm. The NEPA requires that you objectively evaluate these environmentally superior alternatives.

III. Include Assessment of O‘ahu-Based Solar PV/Energy Storage Alternative

The public interest would be better served by any number of alternatives including on-island solar PV with battery storage, rather than this horrible Ka‘ena Point wind development. Your NEPA assessments should include an onshore solar with energy storage alternative. Many, many other alternatives come to mind that would receive more public support and less public outrage than the proposed Ka‘ena Point wind farm project – many are in the news – please coordinate with DBEDT, HECO, and current alternative energy producers in Hawai‘i to develop alternatives to the proposed action, including solar PV with battery storage.

Much of the vehement opposition to your project heard at the July 21, 2016, public scoping meeting seems to be the result of HECO, our utility's, resistance to allowing grid-connected solar PV installations on our homes and to allowing solar farms to be constructed:

<http://www.bizjournals.com/pacific/news/2014/01/28/first-wind-plans-to-build-three-large.html>

<http://www.kitv.com/story/31239004/solar-farm-workers-upset-over-hawaiian-electrics-decision-to-shut-down-sun-edison-projects> . At-sea wind structures, particularly in the most culturally-significant

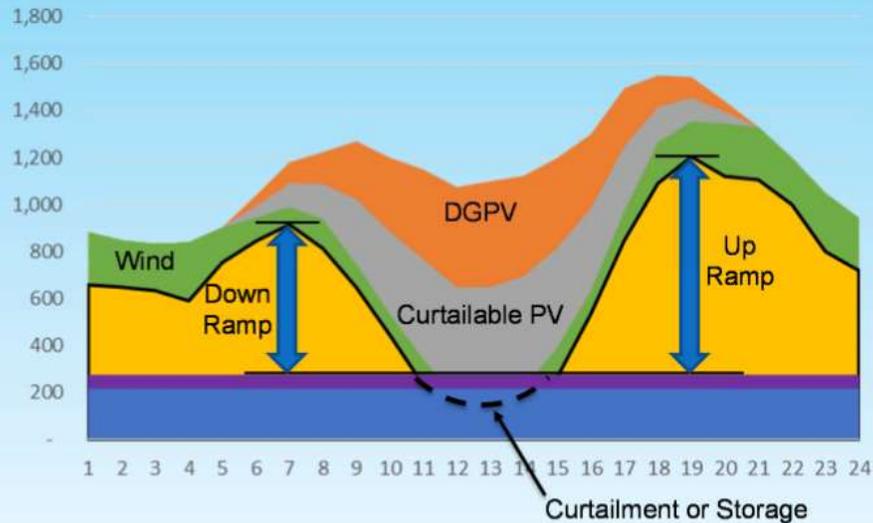
viewshed on the Island, are likely to be wildly unpopular until HECO has allowed build-out of solar PV with battery storage on Oahu. The public, the large and small local landowners, and local solar companies who are missing out on opportunities to fuel Oahu's energy needs with unobtrusive solar PV, and the many entities that would be harmed by a wind farm at this location prefer solar PV with storage. Please, let's consider taking full advantage of the abundant solar energy that Hawai'i is blessed with.

Mark Glick's 2016 PowerPoint at the Task Force meeting <http://www.boem.gov/Hawaii-State-Administrator-Presentation/> indicates on-shore Oahu energy generation is not going to be sufficient to meet State 100% clean energy targets and HECO's preferred energy source is 800 MW of offshore wind to meet the shortfall (Figure 2). 800 MW would entail, for example, 100 8-MW wind turbines. The proposed 400 MW Kae'na Point offshore wind project could be replaced with solar and battery storage that IS feasible, tested, and proven WITHOUT the adverse effects to the environment addressed in this letter. We believe the PUC and our County, State, and Federal representatives are intelligent enough to see this Kae'na project is not in Hawai'i's best interest.

Public Support for Clean Energy Was, In Part, Based on Our Understanding It Would Keep Our Money In Hawai'i: For context, O'ahu would like to be 100% renewable energy by 2045. Based on (https://energy.hawaii.gov/wp-content/uploads/2011/10/FF_June2013_R2.pdf), and the \$0.15/kwh of recent Power Purchase Agreements, we estimated HECO pays approximately \$1 Billion/year to produce or purchase the electricity we pay HECO \$1.8 Billion/year to distribute to our homes and businesses. That \$1 Billion is essentially at stake – who will that \$1 Billion/year (that \$50 Billion over 50 years) be paid to. Will much of the \$0.15/kwh be paid out to a Danish wind developer or will it be paid to local landowners and businesses producing solar energy?

We are just members of the public – not as knowledgeable and skilled as our members of the PUC, DBEDT staff, and our politicians who we have to assume are also looking for ways to get us out of this bad wind farm deal. The public supports the Clean Energy Initiative because we thought one of the reasons to move to clean energy was to stop bleeding 10% of our State GDP for the cost of importing crude oil for our generators. Please coordinate with DBEDT and landowners to develop the alternative that is environmentally superior to this proposed wind farm. Your analysis and your assistance with implementation will greatly benefit the people of Hawai'i, helping rather than harming us.

Energy Transition: Today



System operations are dependent upon the combination of resources serving the entire energy system



- To reach 100%, Oahu needs additional resources beyond those on Oahu (e.g., offshore wind, biofuels, neighbor island renewables transmitted via interisland cable)
- Up to 800 MW off-shore wind in HECO's Preferred Plan
 - 200 MW by 2030, 400 MW by 2040, 800 MW by 2045
- Visualization Tools

Source: Hawaiian Electric Companies, Power Supply Improvement Plans Update Report (April 1, 2016)



Figure 2. Mark Glick, DBEDT Director, May 2016 Task Force Presentation indicating wind as current source of energy <http://www.boem.gov/Hawaii-State-Administrator-Presentation/>.

A year ago, battery storage costs per kWh for Tesla's Powerpack, Eos Auroura, Imergy ranged from \$0.02 to \$0.05 per kWh used (Table 1, <http://cleantechnica.com/2015/05/09/tesla-powerwall-powerblocks-per-kwh-lifetime-prices-vs-aquion-energy-eos-energy-imergy/>). Eos and Tesla representatives assured us their batteries are ready to go and they could fulfil a \$1 Billion battery order. O'ahu residents pay rates between \$0.26 and \$0.36 per kWh; even without a \$1 Billion Federal subsidy, such as the one currently proposed to construct the offshore wind farm, this additional cost for battery storage is feasible. Cost breakdowns for the Eos Auroura, Tesla, and lead batteries are sketched out

below with all prices expressed in 2016 dollars. In addition, the U.S. Department of Energy is funding battery storage and significant cost reductions are anticipated in the next five years.

Table 1. Clean Technica, May 2015, utility battery storage cost per kWh
[\(http://cleantechnica.com/2015/05/09/tesla-powerwall-powerblocks-per-kwh-lifetime-prices-vs-aquion-energy-eos-energy-imergy/ \)](http://cleantechnica.com/2015/05/09/tesla-powerwall-powerblocks-per-kwh-lifetime-prices-vs-aquion-energy-eos-energy-imergy/)

	Powerpack (utility)	Eos Aurora 1000 6000	Imergy (current pricing, 15 years of life)	Imergy (current pricing, 30 years of life)	Imergy (projected pricing, 15 years of life)	Imergy (projected pricing, 30 years of life)
Cycles	5,000	10,000	5,475	10,950	5,475	10,950
kWh/cycle (efficiency & degradation assumptions included in sales)	8,280	4,050	7,500	7,500	7,500	7,500
Total kWh produced over product lifetime	41,400,000	40,500,000	41,062,500	82,125,000	41,062,500	82,125,000
Total Cost	\$2,070,000	\$648,000	\$3,750,000	\$3,750,000	\$2,250,000	\$2,250,000
\$/kWh used	\$0.05	\$0.02	\$0.09	\$0.05	\$0.05	\$0.03

Eos Aurora Battery Option: Ebram Megally Manager, Sales & Account Management, Eos Energy Storage was very helpful and their batteries appear to be a great option. Mr. Megally confirmed a 400MW (1,600MWh) DC system would cost \$256 million (1600MWh*160/kWh*1000) for the batteries to provide 400 MW of energy for a drawdown period of four hours. We would need three of these systems to provide 400 MW of power for 12 hours (overnight, a total of 4,800 MWh), for a total battery cost of \$786 Million. Inverters and site hardware would come from and be installed by other companies at an approximate cost of 20% of the cost of the batteries (\$153 Million). Total cost for the Eos batteries plus inverters and site hardware would be approximately \$939 Million (essentially the same cost as the 50% of the \$2 Billion wind farm construction cost that would be federally funded).

To fill this 4,800 MWh of battery capacity (4.8 million kWh) with solar PV during the day, we would (based on a previous discussion we had with Tesla) need approximately 576 MW of nameplate capacity solar PV. At 5 MW per 35 acres of solar farm, 576 MW of PV would occupy 4,000 acres. We have plenty of developed area (rooftops and road beds), grazing land (and agricultural land that lays fallow due to lack of irrigation infrastructure and other reasons) on O’ahu to accommodate this solar. To match the wind farm’s 400 MW of power generation during the, 400 MW of additional solar PV could be installed on an additional 2,800 acres; for a total of 6,800 acres of solar PV producing 8,000 MWh/day. The 2007 Waialua wildfire burned 6,800 acres of fallow agricultural land on the North Shore – land many of the landowners would probably already have in solar PV production with grazing under the panels if solar development were not curtailed due to the lack of battery storage capacity. These North Shore landowners, including Kamehameha Schools and homeowners have been actively pursuing large-scale

installations of solar PV, but HECO is not accommodating it because utility-scale neighborhood-level and grid-level battery storage is not available.

At a rate of \$130 Million per 100 MW of solar PV installation, this 976 MW of nameplate solar PV capacity would cost an estimated \$1.268 Billion to install. Congress extended the 30% Solar Investment Tax Credit through 2023, so the net cost to install this \$1.268 Billion in solar PV would be \$888 Million. Earnings for their production of approximately 8,000 MWh/day (approximately 2.96 Million MWh/year), these solar farms would be approximately \$445,000/day (\$162 Million/year). The \$888 Million in solar PV installations would pay for themselves in approximately five and a half years and continue producing power for an additional 14 plus years (profiting approximately \$162 Million/year over those 14+ years, for an approximate profit of \$2.26 Billion for the 20-year period). Applied to the 50-year timespan of the proposed wind farm, the landowners with the solar installation would NET approximately \$5.6 Billion during the 50-year period; money that would stay in Hawai'i by going to local solar PV and solar farm owners rather than going to Denmark for a 400 MW Kae'na wind farm. Fully analyze and disclose the environmental and financial costs and benefits of the proposed action and the solar alternative. Specify the sources for the wind farm and solar/battery alternatives and the amounts of money expected to stay in Hawai'i, stay in the US, and be used to purchase items from and take profits out of the State and the US.

Tesla Battery Option <https://www.tesla.com/powerpack/design#/> : Tesla Lithium Ion batteries appear to be a more costly battery storage option. Based on their online price tool, the \$1 Billion in Federal funding (50% of the \$2 Billion project), for example, could buy us 2,043 MWh of battery storage for our solar PV (at \$489/kwh), (approximately \$0.10/kwh – interesting Tesla system pricing has doubled since 2015). That's enough to provide Honolulu with 400 MW of power, continuously, at night, for five hours. The solar PV needed to fill the 2,043 MWh of batteries would be roughly 245 MW nameplate solar capturing sunlight for eight hours a day (with a lot of excess capacity after batteries are topped off on long, sunny, summer days). Acres of solar PV: at 5 MW per 35 acres, 245 MW of nameplate capacity would occupy 1,715 acres. At a rate of \$130 Million per 100 MW of solar PV installation, the landowners would pay \$319 million for the installation of the panels to fill the \$1 Billion batteries. If you need to match the wind farm's 400 MW of power generation during the day, installation of 400 MW of additional solar PV would only cost \$520,000. All this solar PV, plus the Tesla battery storage, comes to \$1.84 Billion.

Standard Battery Option: According to Crown Battery Chip Johnson, Crown Battery Manufacturing Company, SLI Products Division – Western U.S. Region, cjohnson@crownbattery.com, \$1 Billion would enable the purchase of 5,762,714 kW (5,763 MW) in total storage capacity; or 2,881,357 kW (2,881 MW) in usable energy (50% usage of battery's total capacity is usable). This storage capacity would fuel six hours of drawdown at a rate of 400 MW and three hours of drawdown at a rate of 800 MW. Filling the 2,881 MW of battery would be completed by noon each day 600 MW of nameplate solar PV capacity. Solar PV with a nameplate capacity of approximately 600 MW would be sufficient to refill the batteries each morning (to afford a rest period for the batteries before drawdown after the sun sets). Acres of solar PV: at 5 MW per 35 acres, 600 MW of nameplate capacity would occupy 4,200 acres. At a rate of \$130 Million per 100 MW of solar PV installation, the landowners would pay \$780 million for the

installation of the panels. In addition to recharging the batteries before noon each day, the 600 MW of solar PV would feed energy into the grid all afternoon and into early evening. The 2007 Waialua wildfire burned 6,800 acres of fallow agricultural land and grazing land – on property owned by residents who would like to install solar PV but are not able to because HECO lacks battery storage. The landowners, local businesses, and homeowners would benefit from profiting from their installation of the solar PV – a win-win, rather than a win (for Denmark)-lose (for Hawai'i businesses).

This is Hawai'i, not Denmark – we are at 21 degrees latitude, not 56 degrees North. It's sunny here and we have tens of thousands of acres of flat, accessible land that's being underutilized because we don't have battery storage. According to Kamehameha Schools, solar PV is compatible with many agricultural uses – Kamehameha Schools pursued development of solar on their property, but projects were cancelled by the utility. Vegetation under the solar panels could be grazed by sheep or goats to produce food, like the solar farm near Mililani. Areas currently grazed could be fully utilized with the addition of solar PV. With the battery storage option, landowners would net \$1,372/month per acre from the sale of the PV electricity, on top of the money they make from grazing.

Counties should institute permit requirements to prevent solar farms from causing fugitive dust impacts. Solar farms near developed areas, where rainfall exceeds 20 inches per year (climate where guinea grass thrives) should require vegetation to be managed with grazing and mechanical treatments and should prevent landowners from using herbicide to create bare earth. County planning departments should require solar farms, adjacent to communities in dry areas where rainfall is less than 20 inches, to maintain dust abatement to prevent fugitive dust.

We recommend you invite Kamehameha Schools staff or other skilled planners to help develop the solar PV with battery storage alternative for your NEPA documents. You should also work closely with Dan Nellis at Dole Foods, Bob Cherry (Flying R Livestock), the State of Hawai'i, the US Air Force and other DOD installations – all entities owning significant acreages where solar PV could be installed – on O'ahu and neighbor islands. Solar farms could be built on developed rooftops, previously-disturbed lands, and grazing lands managed by DHHL and DLNR. Profits could be used to fund the State's operating budget so the people would benefit (similar to the way schools are funded by harvesting timber on State lands in Washington and Oregon). When entities in other states are serious about solar farm development, they reach out to landowners to confirm a list of interested participants – you should demonstrate you are serious about developing a refined plan to provide a solar energy alternative by sending a letter to all landowners inviting them to coordinate with you in the development of solar energy.

A condition of any authorization, permit, or other approval BOEM gives to an offshore or off-island wind developer at the "*Oahu North*" site should be that the wind developer include assessment of an on-island solar PV plus energy storage alternative in the analysis they assist you with. Include this land-based PV plus energy storage alternative among those you fully consider in your NEPA documents. Other land-based, low-effect alternatives you should consider include locally and neighbor-island-sourced biofuel. Biofuel could be used to fuel energy needs during prolonged cloudy periods, which occur every few years; a combination of solar with battery storage and biofuel would be an even better alternative than a single energy source.

Your NEPA documents should provide Hawaii’s legislators, PUC regulators, and residents with an honest evaluation of the proposed project in comparison to the public’s preferred PV alternative. Because PV with battery storage alternatives are in their jurisdiction, the Department of Energy should be a cooperating agency in your EA and EIS. To facilitate Federal Government efficiency and the coordination, appropriations requests, and funding transfers between the two Federal agencies, the EPA and CEQ (Council on Environmental Quality) assistance should be developed and maintained throughout project development. We believe solar PV with battery storage is the environmentally superior alternative.

IV. Fishing Restrictions, Access Restrictions

Fishermen who’ve heard about this project are furious about your proposed action (Figure 2). The Oahu North call area is heavily fished for tuna because even though it is much deeper than anywhere in the world a floating wind farm has ever been built, it still receives upwelling from the much deeper water nearby. As with almost all other offshore and land based windfarms in the world, it is very likely that either the ultimate owners of these windmills (who will not be the applicant-project promoter) or some governmental officials would close the area to public access due to safety concerns. This will block both an important fishing ground and our canoe and sailing route between the North Shore and Kauai. Closure of miles of ocean will result in adverse effects to fishermen, canoes, sailing, and other recreational, cultural, research, and commercial users.



Figure 3. An angry fisherman telling the wind developer no at the July 21, 2016, public scoping meeting on the North Shore.

Provide details in your NEPA documents of the effects the ocean closure will have to these users. Your PowerPoint indicates the Kae’na Point area is not frequently used by ocean vessels – however, when one sails or paddles to Kauai for cultural or recreational purposes once a year or once every few years, the frequency of the voyage is not high, but the cultural importance is significant. Please don’t block our ocean routes to Kauai. In addition, the wind turbines will reduce the energy in the wind downwind from

the development. This will harm voyaging by our sailing canoes. Assess the effect the wind farm may have to surface wind speed and humidity in your EA and EIS. We have noticed the wind farms on land seem to have resulted in adverse effects to wind conditions for kite surfing and wind surfing.

Disclose in writing to 1.) all fishermen holding licenses to fish in the waters of Hawaii 2.) all persons registered during the current year and previous three years on the National Saltwater Angler Registry in Hawaii, and 3.) all registered owners of boats registered in the State of Hawai'i a map of the area that may be closed to the public should a wind farm be constructed at the site and an explanation of the wind farm project. Provide this information in writing to these persons whenever any Federal Register Notice is published related to wind energy development of the *Oahu North* BOEM Call Area.

Your EA should disclose the density of Ahi, Mahimahi, Ono, Marlin, and other ocean fish passing through each grid cell in the proposed lease area each month over two years of study. Detail how the anchors will be installed and how much ocean bottom they will destroy. Detail why the anchor system can't be used farther from shore, in deeper water, where the effects to the ocean environment would be reduced and where turbines would not be visible from shore. Detail the economics of the nearshore versus farther than 42 miles out projects and explain why it is not situated in a deeper area rather than a productive upwelling area. Your online PowerPoints indicate it's not practical, but that assertion needs to be explained in detail.

http://www.ewea.org/fileadmin/files/library/publications/reports/Deep_Water.pdf indicates the type of deep water installation you are proposing is experimental. Explain why you would situate an experimental wind farm in an area that's so important to fishermen and other ocean users. Disclose what percentage of the time, during the 50 year period of wind farm development and operation, the wind turbines may not be fully-operational, not feeding energy into the grid, yet still closed to public access.

Development of this important site should not be permitted because it would interfere with important site-specific research. Development of solar PV on previously-disturbed land would not result in loss of important research opportunities. A third O'ahu volcano has just been discovered at the proposed wind farm site (Figure 4).

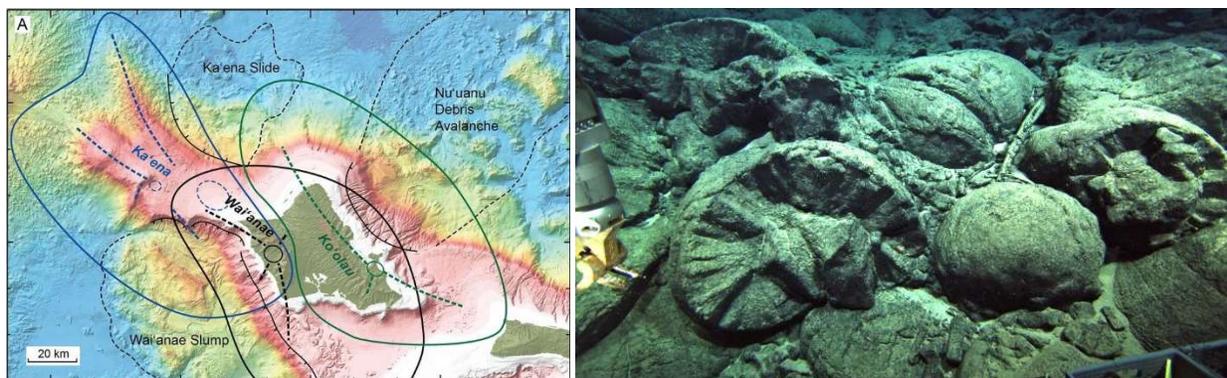


Figure 4. Researchers just found a third O'ahu volcano off Kae'na Point (J. Sinton et al / University of Hawai'i's School of Ocean and Earth Science and Technology).

“Much of our knowledge of Hawaiian volcanoes is based on those that rise high above sea level, and almost all of those formed on the flanks of earlier ones. Kae‘na represents a chance to study a Hawaiian volcano that formed in isolation on the deep ocean floor.” In addition, Scripps Institute of Oceanography researchers just confirmed the existence of “high-mode internal lee waves” was just confirmed in studies of water flow across the “supercritical ridge in Hawaii known as Kae‘na Ridge”

<http://scrippsscholars.ucsd.edu/malford/content/breaking-internal-lee-waves-kaena-ridge-hawaii>.

These two discoveries were made within the last few years – we will never know how much important information will be irretrievably lost due to the permanent disturbance and 50-year closure of the site if the proposed action is permitted.

Floating buoys are vandalized or otherwise taken out of service by ocean users. How will security issues be resolved? We would also like to request a thorough exploration of the down side scenarios of unintended consequences of equipment failures large and small associated with both natural and anthropogenic causes. In addition, detail what means of access will be provided to the floating structures for use by boaters during emergency situations.

V. Viewshed Analysis

A wind farm in the waters off Ka‘ena Point would obstruct views of the open ocean that are used by Native Hawaiians, O‘ahu residents, and tourists for spiritual rituals, relaxation, and contemplation. Turbines located closer than 42 miles from shore would be visible during the day; bright high-visibility lights (required by FAA) would cause the open ocean viewscape to appear to be an industrial area at night.; we recommend you situate all wind turbines beyond 42 miles from the Ka‘ena Point shoreline to be out of view of the Ka leina a ka uhanē white rock limestone soul leaping formation and residences. Many of us have worked our whole lives to protect and enhance the beauty of our environment for our residents and our visitors and you’re proposing to ruin it for a 50-year period. Your EA, EIS and other NEPA planning documents should address the following adverse effects to viewshed:

First, please provide us with two maps: 1.) a map with shading on the land, beaches and ocean landscape where any portion of a wind turbine structure will be within view/in line of sight and 2.) a map with shading on the areas of land, beaches, and ocean where a portion of the wind turbine’s base/stem will be visible (so excluding areas where only the taller rotor-swept area would be within view). Second, assess effects of the proposed wind farm to views (as detailed below) at the following locations: North Shore: Kahuku Point, Turtle Bay Resort, Sunset Beach, Ehukai Beach Park, Pu‘u o Mahuka Heiau State Historic Site, Laneakea Beach, Puaena Beach Park, Hale‘iwa Alii Beach Park, Kiaka Bay Beach Park, Polo Beach, Mokulē‘ia Beach Colony Seawall, Mokulē‘ia Beach Park, Mokulē‘ia Crag rock climbing area, Hidden Beach, and the Ka leina a ka uhanē white rock limestone soul leaping formation; West Oahu: Yokohama, Mākua Beach, Kea‘au Beach Park, Lahilahi Point, Maili Point, Ka‘ula and upper floors of a resort at Ko Olina. These locations don’t encompass all areas where view is a concern, but renderings from these locations will enable us to imagine the changed view from locations important to the public. Disclose accurate viewshed renderings from these above locations using high-resolution 100mm and 200mm lenses to produce renderings of the wind structures under the following light conditions and sun angles: mid-morning, at sunset on the Summer Solstice, Winter Solstice, and Equinox, and at night. In addition, provide video renderings using a 100mm lens view, to disclose how

the wind farm will look at night - with its large, bright, industrial blinking lights. For each time of year, camera zoom angle, and time of day, provide separate assessments of the viewshed effect if wind turbine development was restricted to distances greater than 16 miles offshore versus effects if wind turbines are permitted closer to shore. Address the following view-related concerns in the analysis:

- 1.) The construction of even one wind turbine within the “*Oahu North*” portion of the within the *Oahu North* area would visually desecrate our Native Hawaiian’s centuries-old cultural and spiritual practices conducted viewing the night sky over the ocean, viewing the open ocean, and viewing the setting sun over the unobstructed ocean and taking a last view on earth go to the Ka Leina a ka ‘Uhane white rock limestone soul leaping formation. Analyze and disclose the adverse effect the obstructions will have to Native Hawaiians.
- 2.) In so many wind farm projects, developers provide the public with wide-angle photographs with grainy, tiny little wind turbines that are not visible in the rendering. When we view and photograph sunsets on the North Shore, we use 100mm and 200mm lenses, so your renderings must show with wind turbines mocked up in sunset photographs using the crisp clarity of 100mm and 200mm lenses we would see in our photographs. We have a history, on the North Shore, with this sensitive topic so we are vigilant to errors in your disclosure of this aspect of project effects (Figures 5-7).

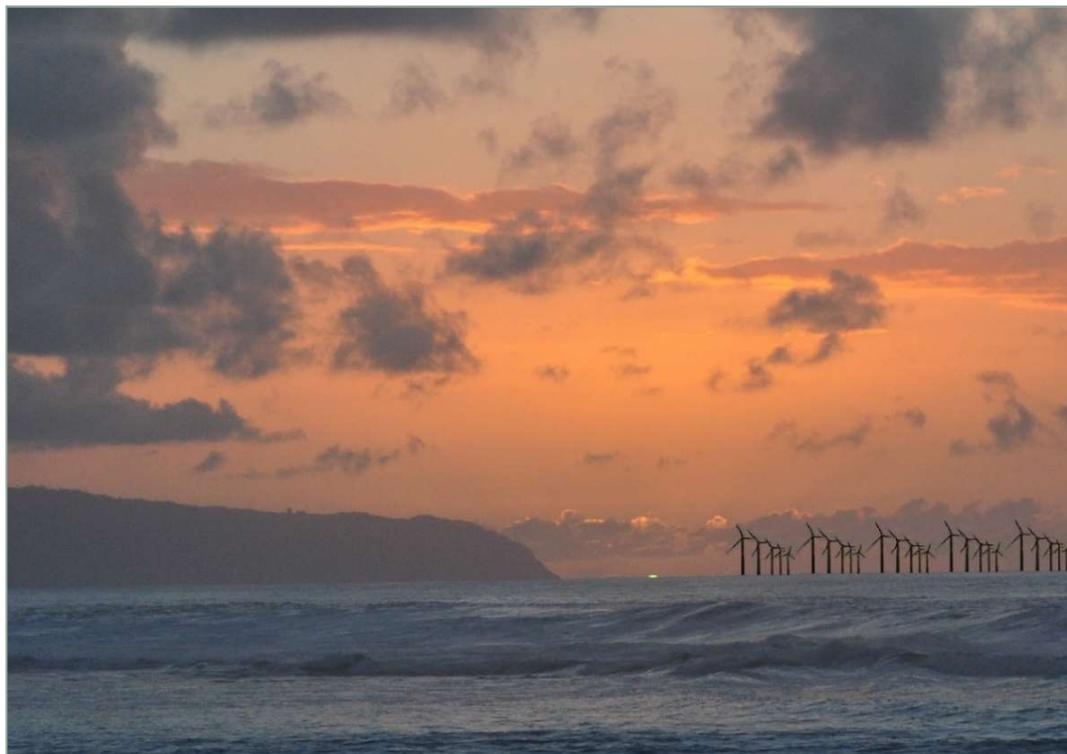


Figure 5. Present renderings of the wind turbines as they would look to the human eye or green flash photographer. This photo of the Sunset Beach Surf Break with Ka’ena Point in the background was taken with a 100mm lens.



Figure 6. Our concerns related to viewshed analysis are based in our local experience (top photos); the photograph at the bottom is a wide-angle photograph of the Sunset Beach Surf Break, with Ka'ena Point itself barely visible.

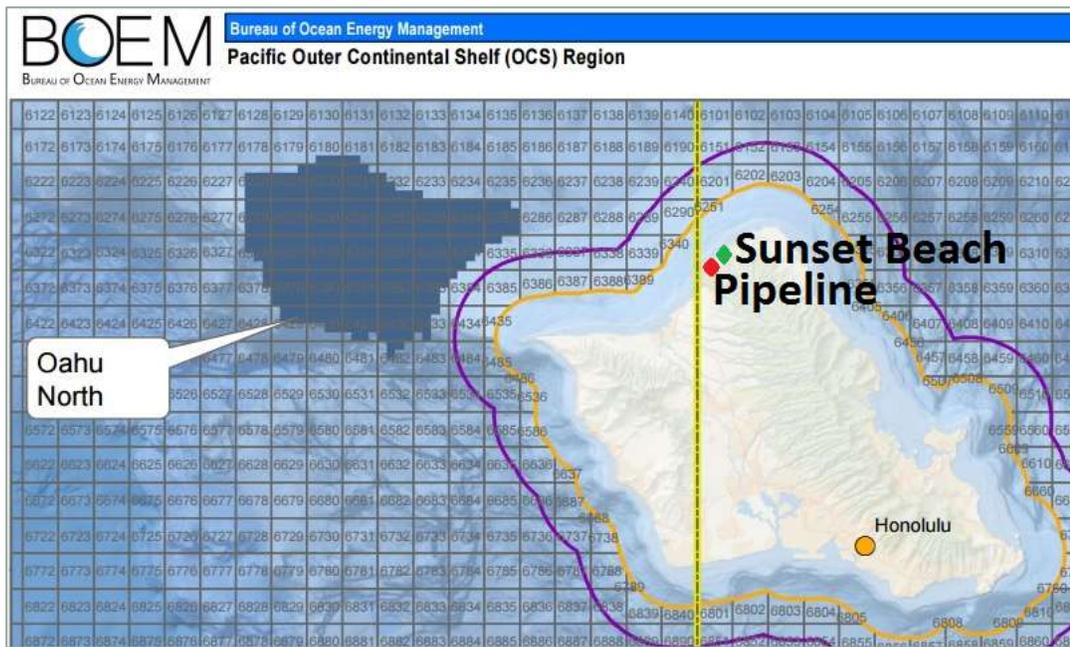


Figure 7. BOEM Oahu North section of the Oahu Call Area – Sunset Beach photo point is equidistant from Ka'e'na Point and the area open for wind farm lease applications.

- 3.) Because the effect to view will be significant, we recommend you divide your planning and any future permits by distance-from-shore zone so wind turbine development farther from

shore is not held up in law suits because the Permit includes turbines in a zone or zones closer to shore. Separate your analysis for viewshed into the following three zones to enable the public to understand effects of each: 1.) closer than 16 miles from shore; 2.) 16 to 42 miles offshore; and 3.) greater than 42 miles offshore. Turbines within sixteen miles of shore have the greatest effect on view and will be fought by the greatest number of people and groups. Turbine locations 42 miles offshore are not visible from the shoreline so these locations are likely to be the most palatable because the industrial day- and night-time red blinking lights effects will not be a blight to most residents.

- 4.) List the addresses of all properties on the North Shore, West Oahu, and Kauai the wind turbines could be visible from during the day, at sunset, or at night. Include all of these addresses in your list of affected parties and send notifications to them by mail when the Federal Register publishes information related to wind development in the waters off Ka'ena Point.
- 5.) Assess the effect the industrial at-sea structures will have on North Shore tourism including effects to Turtle Bay Resort, effects to small businesses, effects to rental income, effects to weddings (Figure 8), and changes in visitor numbers. Research the numbers of North Shore weddings that historically have occurred and disclose the anticipated effect to local people and visitors of loss of this scenic wedding location.



Figure 8. This iconic, unspoiled, best of Hawai'i, Ka'ena Point ocean scenery should not be littered with at-sea windmills (Top left photo by Jenna Leigh Photography; other three photos by Hawaiian Barefoot Weddings). Provide renderings of what the wind farm would look like using these four photos in your NEPA documents. Contact us for .jpgs.

- 6.) Analyze the annual number of times the green flash at sunset will be obstructed to a viewer by a wind turbine. For example, Sunset Beach, on the North Shore of Oahu is so named because it is the western-most point on the North Shore where the sunset is visible year-round. Tourists visit Sunset Beach to photograph the unobstructed sunset over the ocean. Sunsets are often accompanied by a green flash of light as the sun clears the horizon – view of the green flash, and photographs of the green flash a sought-after.
- 7.) Disclose the annual number of photographs of surfers, beach users, and recreational users including boaters, mountain bikers, rock climbers, and hikers the wind turbines may clutter in their otherwise clear ocean views.
- 8.) Assess and disclose the effect the proposed project will have to viewshed of ocean users including Humpback whale and evening cruises out of Hale'iwa and Waianae Harbors, shark tour boats, and recreational and commercial boaters offshore on the North Shore and West side of Oahu during the day and at night. Include all registered owners of boats docked at Waianae Harbor and Hale'iwa Harbor in your list of affected parties.
- 9.) Either include a “farther than 42 miles offshore” alternative to the proposed action or, in your NEPA documents, include a thorough explanation of why your project can't be situated in water deeper than 1,100 meters. The wind turbines would not be visible from shore if they were situated farther than 42 miles from shore. Your 2016 Task Force PowerPoint indicates that although it is feasible to install at-sea wind turbines at depths greater than 1,100 meters, it is not “practical”. Without this explanation, we don't understand this otherwise arbitrary cutoff.
- 10.) It is hard to explain the importance our residents place on walking out to the shoreline or to another prominent point to watch the sun set. Others can see the sunset from their homes. It's a moment of relaxation – it's a moment to view nature, undeveloped, unaffected by man – we just don't have many moments like that here. We feel like this unobstructed area is our Wilderness – because we have it, we (O'ahu residents) have a place to escape to on weekends – because we have it, we don't need to travel to outer islands or to the mainland to experience nature, to be in view of Wilderness. Keep our wild scenic area undeveloped so we don't need to travel and waste jet fuel. We feel our view of sunset would be severely affected by this project. Please find an alternative to this at-sea wind project, provide us with information about the cost of the better alternative; please give us options other than this egregious project that would meet your needs.

VI. Disclose decreased property values on the North Shore, West Oahu, and Kauai resulting from proposed at-sea wind project

Property values would decline in many areas of Oahu's North Shore, West Oahu, and Kauai during a fifty year period if the proposed Ka'ena wind farm is constructed because our world-class surf and pristine scenic views of sunset (the reasons people live and visit here) would be harmed by the project.

Realtor.org has compiled information regarding changes in property value due to wind farms (<http://www.realtor.org/field-guides/field-guide-to-wind-farms-their-effect-on-property-values>).

These property value changes are related to views – they don't include the effects resulting from your project's disturbance of our surf (see surf section below for additional surfing-specific concerns). Detail

in your EA and EIS the extent to which property values would be affected. Provide specific potential reductions in property value, in dollars, for each individual address on the North Shore, West Side of O'ahu, and Kauai. Include projections of future property value for all North Shore, West Oahu, and Kauai properties that may be affected by the project. Provide real estate value projections for the 50 years of wind farm construction and operation. Include in your assessment of property value that Kawaihoa Wind Farm is only permitted to be on the landscape for the next 15 years and then it will be decommissioned. Explicitly describe assumptions. For each property, provide anticipated estimated value without the O'ahu North wind farm, the percent reduction in the value of the property due to the wind farm, and the difference. Express uncertainty in the percent reduction in the property value and the anticipated estimated property value separately and explicitly.

In addition to providing the following information in your EA and EIS documents, also provide the following in writing to every registered owner of all property that may be affected: 1.) the effect the proposed offshore wind project may have to their property value during each year of the 50 years of construction and operation in comparison to what these values would be expected to be in the absence of the wind farm landscape blight. 2.) The effect the proposed wind farm may have at reducing or increasing their electric bill; 3.) the effect the public's preferred alternative (solar PV with grid-level battery storage) would have on their property value and their electric bill. When providing each of these three items, include details of your assumptions so your calculations will be repeatable. You may wish to provide several scenarios, with their various assumptions. Detail this information in your NEPA documents as well as providing the property-specific analysis to each registered property owner whose property value may decline as a result of the proposed wind farm. Detail in your NEPA documents and in your individual written notice to all affected landowners the cumulative loss of property value / net worth of the people of Hawaii that may result from the proposed wind farm. This loss of net worth should also be presented in your EA and EIS in relation to the PV with battery storage alternative.

Our August 21, 2016, review, Zillow, of the 256 most recently sold homes in Haleiwa and the 259 most recently sold homes in Waialua indicates the average home price in Haleiwa was 1,365,089 and the median home price in Waialua is 575,000. 2010 Census data indicates there are 1,318 households in Haleiwa and 1,165 in Waialua. At a rate of 1,365,089 per property, total residential property value in Haleiwa is approximately \$1.8 Billion; at \$575,000 per property in Waialua, residential property value in Waialua would be \$670 Million (totaling 2.47 Billion). A reduction in property value of ten percent would reduce the net worth of North Shore residents by \$247 Million (an average of \$100,000 per household); a twenty percent reduction would come to approximately \$500 Million in 2016 dollars (\$200,000 per household). And we wouldn't want to live with this industrial blight on our once beautiful seascape so we would want to sell and move and we would feel this loss of net worth. Our point is that cultural sensitivities, fishing, endangered species, social justice, and all other things aside, there are many, many, people in our communities who will fight very hard to prevent construction of even one wind turbine in our North Shore waters to ensure their life savings is protected. Especially when alternatives to the proposed action appear to be readily available.

The same analysis should be done for West O'ahu and Kua'i. Based on property value effects alone it looks like families in these areas would be better off if we all took a year off from work to volunteer to

help you figure out a better way to get this energy produced and transmitted to urban Honolulu than we would be allowing you to move forward with this Kae'na wind project.

VII. Adverse Effects to Business and Tourism

Hawai'i, O'ahu, and the North Shore's number one economic driver is Tourism. Tourism is a \$14 billion part of our economy, accounting for 22% of our GDP. More than 50 % of O'ahu tourists tour the North Shore during their stay. Tourists spend an average of \$150 to \$400 a day in Hawaii. These people are here on their honeymoons or on a Hawai'i tropical island vacation – you can't replace that with ecotourism to see an industrial facility. Turtle Bay Resort is a multi-billion dollar luxury oceanfront destination at the northernmost point of the North Shore. Many North Shore restaurants are situated to view the sun setting over the ocean. The economy of the residents of the North Shore is rooted in the beauty of our scenery, our clean powerful surf conditions, and our undeveloped country environment. Tour busses stop at Sunset Beach so tourists can take photographs of the beautiful ocean scenery. The Hawai'i Tourism Authority prioritizes "Maintaining the Brand" to assure long-term sustainability of the destination. Your proposed Kae'na wind farm would cause irreparable harm to the North Shore brand and because this is a premier destination for tourists from the lower 48 states and international travelers, construction of this wind farm would adversely affect the quality of life for a portion of the World population.

A review of the 2010 Census data indicates the North Shore receives the following total annual value of sales: Retail \$105,649,000; Food: \$33,591,000; Rental Real Estate (including Turtle Bay Resort): \$5,367,000 for a total annual tourism-related input of \$144.6 Million. A 10 percent reduction to this net would cost our tourist-related businesses \$14.4 Million annually. Your analysis of the effects of the proposed action should include an assessment of changes to the future number of tourists visiting the North Shore and the tourist dollars spent on the North Shore the project may have during its first 20 years of operation. Your analysis should also include an assessment of the reduction in the reduction in overall O'ahu visitor arrivals that may result from the injury to the brand and the effect this may have to airlines and the businesses in Waikiki. Couple this analysis with your assessments of the other financial adverse effects the project will have to us to provide a cumulative assessment of the injury to the people of the North Shore, West O'ahu, and areas of Kaua'i within view of the proposed wind farm.

VIII. Contaminants, Algae, and Invasive Species

Detail the amount and type of fluids, solids, and particles the wind turbines will leak or fall into the ocean during construction and operation of the wind farm. Detail the effects these contaminants will have to limu, fish, seabird, monk seal, humpback whale, and human health. Detail the components of the various turbine components, fluids, anchors, and anchor chains or cables. Include transmission fluid and oxidized components of the structures. Iron should not be in the components used in the wind turbine platforms or in-water components of mooring lines and anchors because it causes dramatic loss of corals and increases in invasive species and algae growth. In the 6,000-ft deep (2,000 meter) waters off the Kona coast, where floating cages submerged just beneath the water surface are installed, the shade from a single cage causes algae to grow on the sand bottom substrate – address the effects shade from the proposed structures will have to cause additional algae growth. Algal blooms are severely

affecting tourism in Florida – how will the proposed action affect algae and invasive species growth in the developed area and on the shores of Kaua’i where upper-ocean currents would carry the iron-enriched water. Structures containing iron are being removed from the offshore waters of the Northwestern Hawaiian Islands because the iron causes expansive areas of sea floor around shipwrecks and buoys to be overgrown by the invasive Corallimorpharian *Rhodactis howesii* (Figure 9).

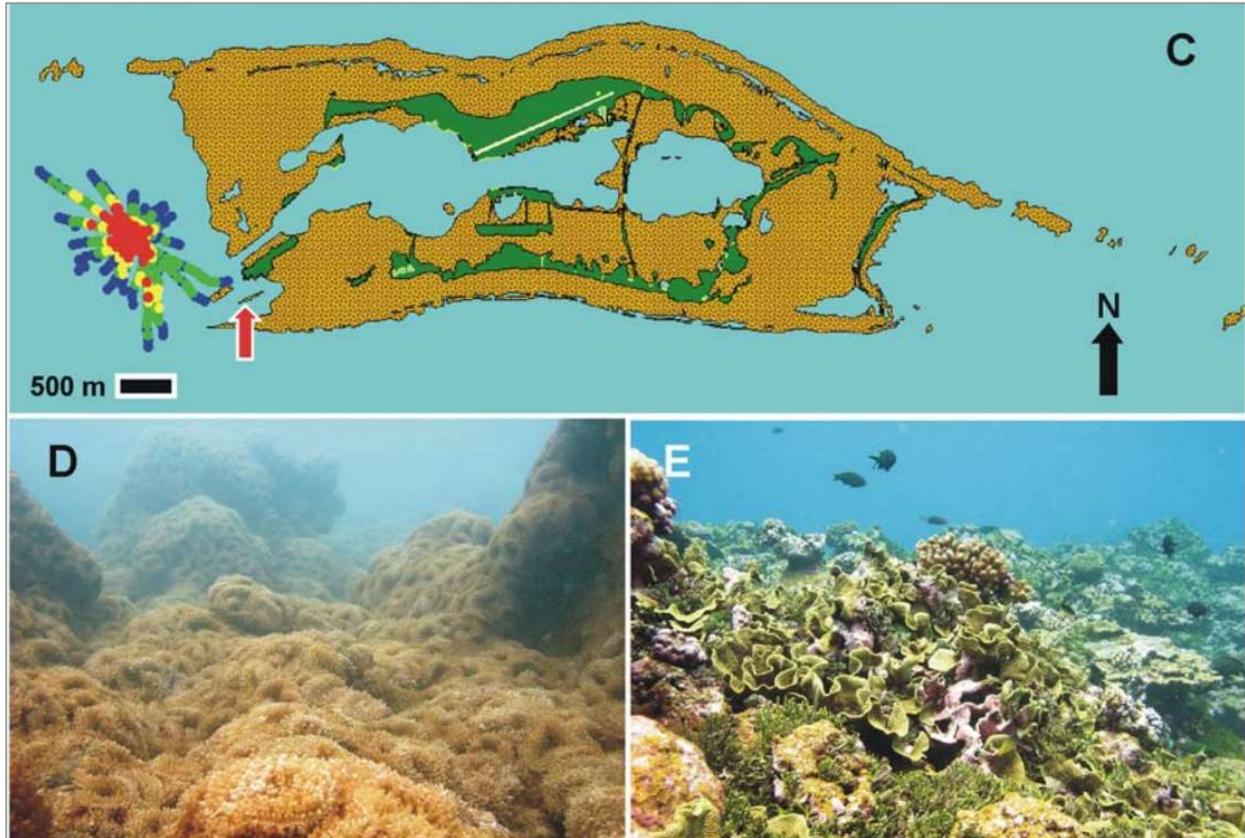


Figure 9. Invasion of Palmyra Atoll coral reef by invasive species in areas contaminated by iron (Work et al 2008).

Based on a 5:1 ratio of anchor line length to water depth, 12 miles of anchor line appear to be required for each wind turbine – if iron a component of the lines or structures, even one turbine could significantly modify the ocean floor in this important, productive upwelling area in addition to harming other areas where the currents carry contaminant-tainted water.

Detail the contents of in-water components of the proposed structures and provide a thorough assessment of the effects these structures may have to the species composition of the sea floor. Provide a thorough assessment of the effects a single turbine structure and its associated components may have – detail zones of severity of change and the number of square miles of each zone. Map all areas of areas of coral greater than 10 meters wide within the Oahu North Call Area and provide an assessment of the effects the proposed project, at the project-level, may have to these corals.

Provide a thorough assessment of the direct effects the disturbance resulting from the anchors will have to the ocean flora and fauna. Repeat the above analysis for the 42-miles offshore alternative, where turbines are situated out of sight of the Ka leina a ka uhone white rock limestone soul leaping formation, in deeper, less productive waters. This *Oahu North* site is a high-productivity ridge area of our ocean – no experimental wind structures (let alone tested and true wind structures) should be installed at this location.

Climate change is expected to increase sea surface temperatures so 18 years from now, the strong hurricanes (which usually only remain strong when they stay in waters south of Hawai'i) are expected to track through the Hawaiian Islands instead of staying to our south. Our sea surface will be more similar to the energy fueling super typhoons in the south Pacific. Tsunamies are likely to affect the area also. BOEM should therefore ensure the number of hurricanes and tsunamis that may affect the structures, and the effects those may have to the wind turbine structures be included in the EA and EIS. BOEM should also require the applicant to maintain funding in escrow to cover the cost of locating and retrieving the pieces of metal, petroleum products, oil, and other contaminants that fall into the ocean during the hurricane. BOEM should ensure the wind developer retrieve any articles containing iron (see above). Consult with the US Department of Defense and US Coast Guard regarding anticipated costs associated with detecting and retrieving pieces of similar missing pieces of aircraft. The wind developer should pay the costs for undersea search and retrieval operations. BOEM should not allow any component containing iron to remain unaccounted for. The mitigation cost for loss of coral reef should be applied to any component missing – each pound of metal that goes missing should be assessed a coral mitigation cost if it's never retrieved. The cost of retrieval of components torn off by a single hurricane, the anticipated potential number of damaging hurricanes, the potential costs for compensatory mitigation for damages to the environment, and the method by which the applicant will escrow funds, should be included in your EA and EIS documents. Ensure additional funding for decommissioning, removal, and restoration of the ocean floor back to it's original state are sufficiently assured in escrow. Ensure all escrow funding is held by an A-rated American Bank naming NOAA and the DLNR as beneficiaries.

IX. Undersea Cable and Transmission Line Electromagnetic Effects to Wildlife and Humans

Detail the various effects the undersea cable may have to fish, corals, seabirds, marine mammals, turtles, and humans. Detail the strength of the electromagnetic field of the cable and onshore transmission line under maximum electricity loading at the following distances: 1 meter, 10 meters, 100 meters, 1,000 meters, 2,000 meters, and 3,000 meters. Detail the effects electromagnetic radiation may have to breeding whales and other wildlife and to humans. Your analysis should extend to the point on land where an existing transmission line is sufficient to handle your electricity/voltage loads. On the North Shore, such transmission lines may exist at Mililani – on West O'ahu, such lines are in place at Nanakuli. Therefore, your disclosure and analysis of the electromagnetic fields and effects to humans and wildlife must extend all the way to Mililani or Nanakuli. This is a social justice issue. Don't piecemeal the project into small components in your analysis – include the effects of the new transmission lines that would need to be constructed to get the wind energy to downtown Honolulu

where the power is needed – the North Shore is already energy-independent – don't curtail the effects analysis – disclose all of the adverse effects of the project to the affected public, legislators, DBEDT, and taxpayers. Although the effects of the undersea cable are significant, these effects seem to be the only adverse effects that would occur if the purpose and need for the project were met with solar PV on Moloka'i or Lāna'i, or wind farms on Lāna'i or Maui. The undersea cable from an outer island could come ashore at Nanakuli, so adverse effects to neighborhoods of a new transmission line system would be avoided.

X. Federal Government Clouded Title to Right to Lease Hawaiian Ceded Ocean Lands

Native Hawaiians ceded the ocean lands to the Federal Government and those lands were never returned to Native Hawaiians – Native Hawaiians maintain rights to the ocean lands you are considering leasing. Private landowners on land can lease their lands for wind development but our oceans are not for sale. The Ocean is not for sale; please go work with willing landowners.

XI. Social Justice

We understand your applicant pulled young men out of the public meeting in Waianae to promise them jobs – yet what we actually see once these wind farms get developed is the full-time permanent staff are all skilled staff from the mainland. If a lease for construction of wind turbines is confirmed for the Kae'na Point site it could be yet another example of the developer buying (inexpensively) the support of the underprivileged community. We watched as many members of the Kahuku community capitulated to support a wind farm that directly affects their school buildings at a price of only \$10,000 per wind turbine per year. A wind developer is offering a Maui community the equivalent of \$15,000 per wind turbine per year for a proposed development there (<http://www.mauinews.com/page/content.detail/id/600616/Testimony--Pros-and-cons-of-Kahikinui-wind-farm.html?nav=10>). In the case of this Kae'na Point project, with very significant harm to so many people and communities, it's likely the developer may buy the support of some, but there are too many who will be harmed too greatly – even if they paid us all of their estimated \$5 Billion profit, we would be unmoved. We would not wish a wind farm development on any community that did not want it. This project, in this location, is unthinkable. Your developer can pay all the money in the world to every wealthy person and every underprivileged person on O'ahu – every person on O'ahu could support this project, but that support will not mitigate the unavoidable and deeply troubling adverse effects this development would have at this location.

XII. Serious Impacts to the Quality of our Surf Due to Wind Farm Structures Dissipating and Disturbing Surf Waves - West and North Ocean Swells

Standing alone, each component of our list of concerns seems reason enough to pursue a less harmful alternative to the proposed wind farm off Kae'na Point. The most deeply felt concern of many of our 'Ohana, including our founder, who is a surfer, wind surfer, and tow-surfer, is the adverse effect the large floating structures will have to the clean powerful west swells that create some of our most epic, sought-after surfing conditions. The North Shore has many of the very best, most famous, most heavily visited surf spots in the World. The quality of the North Shore's surf is of great national and

international importance. Our ideal surf is everything to many residents and visitors to the North Shore – it is the reason many of us live here. North Shore surf season is driven by storms tracking from west to east across the Pacific Ocean (typically October 1 through May 1) and typhoons in the South Pacific (typically September through December) in combination with offshore winds. We have worked very, very hard to live here and to protect our surf for our enjoyment and that of the rest of the World. We are supportive of clean energy, but not if it will adversely affect the quality of our surf. If you need to anchor large heavy floating structures offshore of O’ahu, don’t do it in an area where it affects the size and cleanness of the North Shore’s surf.

The North Shore has seven miles of surf spots – the “Seven Mile Miracle” that would be adversely affected by a wind farm off Kae’na Point. In addition, Haleiwa, Kahuku, and Mokuleia surf spots on the North Shore, and many surf spots on the West side of O’ahu would be adversely affected. The quality and “cleanness” of surf at the following world famous surfing breaks on the North Shore would be among the most adversely affected because their most perfect conditions rely on clean swells from the southwest, west, and northwest direction: Haleiwa, Waimea Bay, Pipeline, Gas Chambers, Off the Wall, Rocky Point Lefts, Sunset Beach, Backyards, Velzyland, Kawela Bay (along with numerous lesser-known surf breaks also being affected). On the West side of O’ahu, surf breaks at Makaha and Ma’ili would see deteriorated surfing conditions if the proposed action is allowed because any type of North Swell hitting West O’ahu would be reduced and disturbed by these many large heavy floating structures at sea off Kae’na Point.

Pipeline, the most famous surf spot in the world, and one of the most perfect waves in the World, is located due east of your proposed wind farm (see map Figure 7) and the quality of this wave would be seriously affected by the proposed action. People come to Pipeline from all over the world to surf this wave and to watch surfing. It’s spectacular because it breaks very close to shore so visitors have front-row seats. It’s a very special wave. The December Billabong Pipe Masters contest is the final event in both the Van’s Triple Crown of Surfing and the final World Tour stop for the World Surf League – the winner of this contest crowns the Triple Crown and World Champion. \$500,000 in prize money is awarded at this “Pipe Masters” surf contest. The Da Hui Backdoor Shootout surf contest and other world-renowned surf contests occur here because surf conditions are so ideal. Pipeline is beautiful and perfect when it receives powerful long-period swells from the west (Figures 10-16).

The proposed offshore windmills have the potential to seriously negatively impact the quality of the waves we surf. The windmills could not only result in a decrease in the size of surf, but their floating features will result in a very large decrease in the quality of surf at many of the premier surf breaks on the North Shore of O’ahu and the West side of O’ahu. The *Oahu North* portion of the “Oahu Call Area” for the proposed windfarm off Kae’na Point extends many miles north of Kae’na Point. For Haleiwa, swells from the west all the way to the northwest would have to pass through the wind farm “call area” in order to reach Haleiwa. For Waimea Bay and Pipeline, swells from the west-southwest to west-northwest would have to pass through the windmill farm “call area” before reaching those surf breaks. For the Westside surfbreaks, such as Makaha and Ma’ili, almost all winter swells would have to pass through the windfarm “call area” before wrapping around Kae’na Point into the Westside.



Figure 10. West swell hitting Pipeline (Photo by Duncan, Surfing Magazine).



Figure 11: Local Pro surfers John Florence (Currently Ranked #1 in the World), Dusty Payne (Photos by Zak Noyle), and Derek Ho (Photo by Surfline) surfing perfect Pipeline.



Figure 12. Pro surfers Nathan Fletcher (Photo by Zak Noyle) and Kelly Slater (local homeowner) and local Pro surfer Jamie O'Brien (photos by Brent Biemann) surfing perfect Pipeline.



Figure 13. Perfect Pipeline on a west swell (Photo by Mike Cianciulli, Surline).



Figure 14. Members of Hui O He'e Nalu (Da Hui), a 300-member family of watermen founded in 1976 to work to assure local people's rights to the ocean are not infringed upon.

Surline.com explains the mechanics of Pipeline's wave here: http://www.surflineline.com/surf-news/the-mechanics-of-pipeline_63340/. See Figure 15.

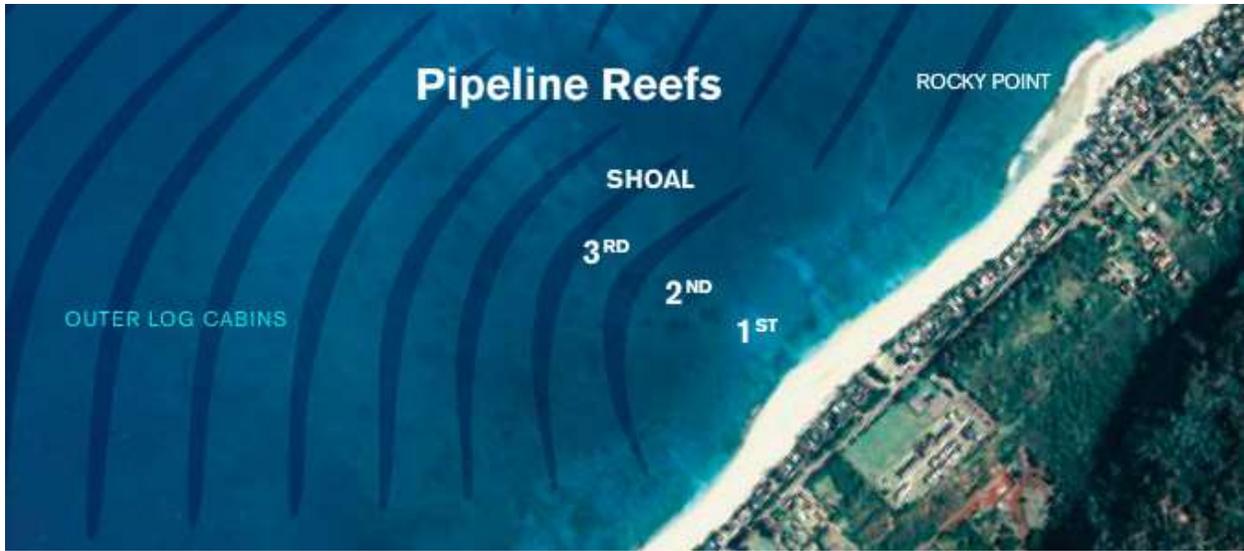


Figure 15. Pipeline surf break: west swell and typhoon swell from the southwest create Pipeline’s classic long, rideable “left” “tubes”; northwest swell offers wave faces on both Pipeline lefts and Backdoor rights; and north swell is ideal for Backdoor rights. (Photo by http://www.surflife.com/surf-news/the-mechanics-of-pipeline_63340/).



Figure 16. Pipeline is perfect location for spectators (Photo by Sean Davey for Quicksilver and Surflife: http://www.surflife.com/surf-news/the-mechanics-of-pipeline_63340/).

The ocean lease applicant for the northern “call area” (an entity called AW Wind Hawaii, LLC which is led by a Danish citizen, Jens [pronounced Yens] Peterson) proposes to build at least 51 floating windmills, and is clearly trying to reserve the option to build many more, possibly 100 or more. Each floating windmill is proposed to be built on a patented “Wind Float” platform similar to the photo shown on the applicant’s application. The photo on the application is of a single demonstration Wind Float windmill that was built in northern Portugal. The in-water portion of a floating wind structure is shown in Figure 17 (in shallow water, without anchors).

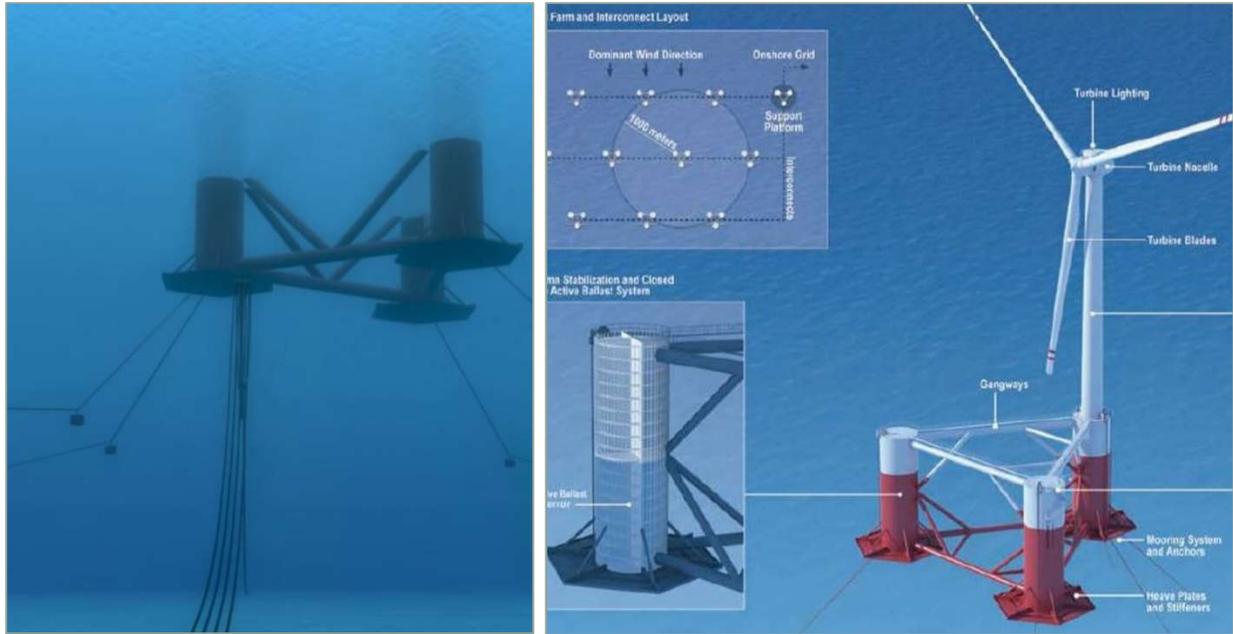


Figure 17: Examples of the in-ocean portion of an at-sea floating platforms (Alpha Wind).

The Wind Float platform that was built in northern Portugal is anchored in water that is only 40 to 45 meters deep. In contrast, the waters in much of the northern “call area” off Ka’ena Point are about 1,000 meters (3,300 feet) deep. That is 5 to 6 times deeper than anyone anywhere in the world has ever successfully anchored floating windmills, and more than 20 times deeper than the applicant’s demonstration Wind Float in Portugal.

The demonstration Wind Float in Portugal is anchored by four steel-cabled anchor lines that spread out in four directions. The Wind Float itself consists of three large steel semi-submersible cylinders that have a diameter of 10 meters each (33-foot diameter each), and extend down more than 70 feet into the water. The three cylinders are set in a triangle held together with various steel tubes and cross braces, and the windmill tower sits on one of the three cylinders. The single demonstration Wind Float in Portugal has a 2.4 MW (megawatt) Vestas brand wind turbine. For Hawaii, the applicant is proposing to use wind turbines in the 6 to 8 megawatt (MW) range. As a result, the size of the Wind Float cylinders that would be needed in Hawaii will be even larger than the ones used in Portugal.

Even with the smaller size of the Wind Float in Portugal, the total cross section of steel for each Wind Float will be 99 feet (three times the 33-foot diameter for each cylinder). Each cylinder would extend more than 70 feet down into the water, and then connect to the anchor cables. Even if only that smaller-sized Wind Float were built, and even if the applicant only built 51 of the windmills, that would mean a total metal cross section that waves will have to hit of about 1 mile. (51 times 99 feet equals 5,049 feet, and there are 5,280 feet in a mile.) If the applicant ends up building 100 larger sized Wind Float windmills (to accommodate the 6MW to 8 MW wind turbines it plans), then the total cross section of metal, that waves will have to hit, would be more than 2 miles.

Perhaps even more important than the one to two miles of total metal cross section that waves will run into, is the shape and configuration of the metal. The portion of a wave hitting and passing through a single Wind Float will have three large 33-foot-diameter metal cylinders (or larger) in a triangular shape in relatively close proximity to each other. As the waves hit a metal cylinder they will ricochet off in both directions laterally, and portions of the ricocheted wave energy will hit the other 33 foot cylinders almost immediately. As a wave hits and passes by the cylinders, the interactions of the deflected energy will be very complex. The deflected wave energy will soon move laterally (on an angle) enough to interact with deflected wave energy from the adjacent windmill in that row, as the diffracted waves wedge into each other (Figure 18). In addition to at least some net loss of swell energy reaching the world famous North Shore surf breaks and the Westside surf breaks, there is likely to be a very a significant increase in the messiness of the swell energy (in other words, a decrease in the “cleanness” of the swell energy that surfers want) as it hits and passes through the Wind Floats.

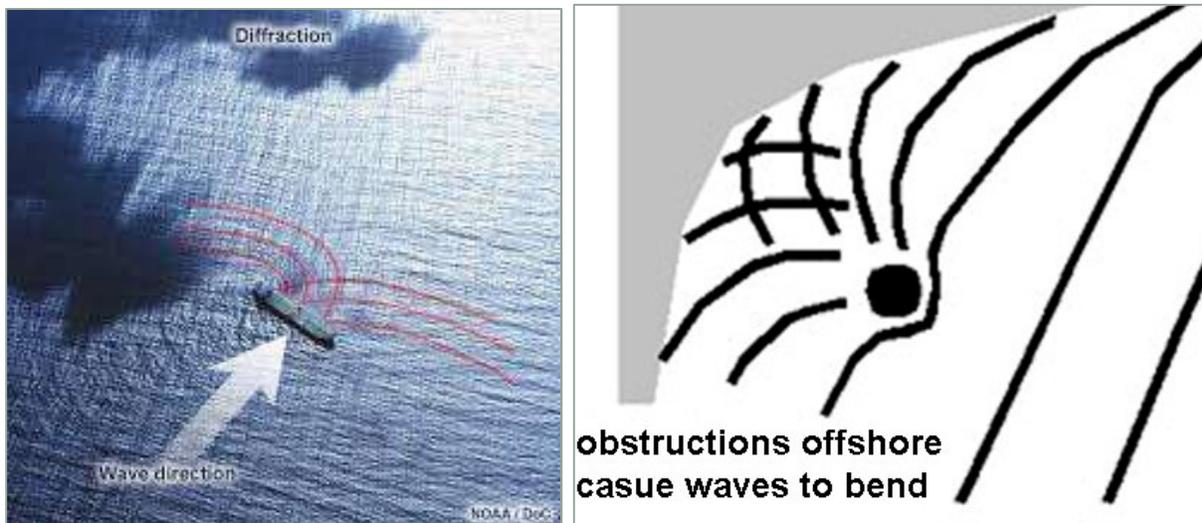


Figure 18. Diffraction of waves as they move past structures (Images NOAA and geology cafe.com).

The problems with the decrease in "cleanness" of the wave energy, and increase in the messiness from the random deflected waves, will further increase as the wave and swell energy passes through the next row of Wind Float windmills. We support clean energy, but not at the cost of harming our surf. We are particularly concerned you will pay consultants to try to convince us the effect will be insignificant. We are also aware of the \$Billions in profit your developer stands to make if this project and the lengths wind farms go to buy support from local communities and businesses. We want to make BOEM aware that the recent commercialization of surfing and the surfing industry’s focus on profit may afford your applicant opportunities to engage with receptive partners who may come to support wind farm development while residents will not. Please coordinate closely with us in your selection of fluid dynamics engineering consultants and meteorologists to best ensure the framework for your analysis and the results of your analysis are consistent with those of the engineers and meteorologists we will engage to assist us in this effort.

The potential for this project to adversely affect our surf conditions is very troubling to many in our community and if for no other reason than this one, we will utilize every means available to ensure this

Kae'ena Point wind farm is not constructed. If you towed the wind farm structures away and removed the anchor lines so they're not in the water column October 1 through May 1 period, the project's adverse effects to our surf would be almost entirely eliminated. If this mitigation action can't be incorporated into the project design to protect the quality of North Shore surf, the proposed action must not proceed. E mālama nalu.

XIII. North Shore Has Done Our Part – Discussions Regarding North Shore Bid to Secede from Honolulu County

Downtown Honolulu and Waikiki are constructed with high-density commercial and residential structures so they have energy needs that exceed their local production capacity. The North Shore produces more solar PV and wind energy than we need to meet our electricity needs. We have done our part – listen to our North Shore Neighborhood Board and our residents – we have had enough and we will not allow another wind farm to blemish our viewplane, our wildlife, our ocean, our surf. E mālama nalu. Most of us used to ignore discussions by members of our community who point out that the North Shore would be better cared for if our area were a separate County. Because of this Kae'ena wind farm, a number of us are now taking this option into serious consideration. If we were a separate county at least we could pass laws against the gigantic transmission line crossing our lands. We feel like urban Honolulu could support your proposed *Oahu North* site because it may be the cheapest solution rather than the solution that is acceptable to all of Oahu. We want solar with grid-level battery storage.

XIV. Albatross, 'Iwa Bird, endangered bats, Ka'ena seabirds, and Kauai seabirds

We thought wind development offshore from Ka'ena Point and Kauai would never receive any type of serious consideration because Ka'ena Point and Kaua'i are such important seabird conservation areas. Some seabird species are protected by endangered species laws, but others, such as the albatross, wedge-tailed shearwater, and 'Iwa bird (after which Hale'iwa is named... house of the 'Iwa) are not – ensure you address adverse effects to all seabirds and ocean life and explain how you will compensate for any adverse effects to all wildlife species. Because the wind farm will kill endangered birds and bats, BOEM must complete a State of Hawai'i Habitat Conservation Plan to obtain an incidental take license for take of the endangered animals. BOEM should not authorize construction of any vertical structure at sea until the Habitat Conservation Plan is approved by the Board of Land and Natural Resources and the Incidental Take License is in hand. Without the Incidental Take License, the applicant would not be able to bring the powerline into State waters, and would need all components to remain three (possibly 15, depending on interpretation) miles offshore. But-for the powerline, the endangered species take will not occur – if the powerline were not constructed in State of Hawai'i waters, the wind turbines have no utility – they would not be built. Your applicant should be provided with guidance regarding your obligation to not make irretrievable commitments of resources prior to obtaining the Incidental Take License from the state of Hawai'i. Habitat Conservation Plans take several years to complete – three years seems a very ambitious timeline. The BA, EIS, and HCP should detail how the proposed compensatory mitigation will benefit the threatened and endangered species and the species protected under the Migratory Bird Treaty Act. Explain the evidence you used to confirm the compensatory mitigation assures a “net benefit” to these species; reliance on the methods used by less controversial

wind farms on land to compensate for adverse effects to migratory birds, bats, and threatened and endangered species have not been scrutinized with the same level of public concern this Ka'ena at-sea wind farm will be. For the Ka'ena wind farm project, assess and report post-construction mortality of migratory birds and threatened and endangered species with no less than a 90% level of assurance or certainty. Provide a thorough description of how mortality will be monitored accurately at the offshore wind farm. These species are important to us, so we would like to know, with 90% certainty, that the level of mortality you are reporting to us is an honest evaluation of the level of mortality occurring. Ensure the benefits of your compensatory mitigation projects are measured and reported with this same scientifically valid level of confidence. We recommend the following measures to minimize and compensate for mortality of our threatened, endangered, and migratory bird species associated with the *Oahu North Ka'ena Point* wind development:

Compensate for adverse project effects to albatross and wedge-tailed shearwater by ensuring the Kae'na Point predator-proof fence is maintained and the area is kept predator-free during the 50 year term of the wind development. Funding for fence replacement should be kept in an escrow account naming DLNR as the beneficiary. The original fence construction cost approximately \$1 Million and the fence may be due for replacement about when your project starts. Plan to replace the fence every 10 years (\$5 Million total for fence replacements).

The Hawaiian hoary bat is likely to be killed by the proposed 50-year wind farm operation in the Ka'ena Point area where bats traverse the ocean between Kaua'i and O'ahu. The death of a strong bat traversing between islands would have a far greater effect to the Hawaiian hoary bat species than a local bat killed at its territory on land. The future genetics of the species may be affected by the proposed project. Install bat deterrent technology on every wind turbine structure to minimize the potential for bat take. Bat flight is primarily limited to light wind conditions, when wind speeds are less than 6.5 meters/second. Therefore, the turbine blades should only be engaged when wind speeds are higher. Curtail (feather blades to not catch the wind) when wind speed falls below 6.5 meters/second to minimize mortality of the endangered bat. Ensure your studies, during your three to five-year study period, are sufficient to confirm the compensatory mitigation you propose to offset take of the bat will increase bat numbers to offset any anticipated take of the bat. For example, studies such as research regarding the effects predators have to breeding bats could enable you to propose predator control in bat breeding areas to increase bat numbers to offset at-sea bat take. Studies of differences in bat numbers in disturbed versus native habitats could enable you to propose habitat restoration to compensate for bat take.

Likewise, during the three to five years of project planning, study the 'Iwa bird in sufficient detail to understand the level of take you anticipate, in addition to understanding enough about its ecology to design a conservation project to compensate for the take of the species. In addition, explain why you are situating an experimental at-sea wind project smack in the middle of Kaua'i (the largest remaining population of Newell's shearwaters) and Ka'ena Point (the largest albatross population on the main high Hawaiian islands) in a sensitive ocean environment where upwelling of deep ocean waters results in high productivity and high densities of birds.

With respect to the cable construction, we see a risk the project itself could be piecemealed – the developer could reduce their current proposed project and install a small number of wind turbines, maybe just two turbines in the farthest location from shore in the least hated location in the *Oahu North* area. Then, once the adverse effects of the power cable’s landing on shore are addressed and the take of endangered species is authorized and the value of property has already been reduced, many additional turbines, which would have much greater environmental impact, could be added with less resistance from the public and possibly without any additional requirements pursuant to HRS 195D. Therefore, ensure any BOEM permit decision include all future effects from the cable’s development including any wind development within the *Oahu North* area and any at-sea energy development off the North Shore. Disclose to us all of the development upfront, rather than allowing additional wind turbines to be added in the future. Don’t allow the developer to implement an action that could enable implementation of a future action that is not disclosed to the public and the EPA up-front.

XV. There Are Likely to be Many Other Important Cultural Sites and Rituals Not Addressed Here

We understand Thomas Shirai hoped to bring you out to Ka’ena during your agency’s July 2016 visit, but your trip was rained out. We hope you will gain respect for the Leina a ka `Uthane white rock limestone soul passage formation and you will remove sites within in view of the formation from further at-sea wind development consideration. Most people we talk to about this proposed action are surprised and have not heard about it. You may have done your legal minimum required outreach to get information to the public regarding the need for them to step up now if they would be affected by the proposed action, but that information has not been widely broadcast on the television or print news – it seems like no attention has been given to this project and most of the parties who would endure significant irreparable adverse effects know nothing about it. There are difficulties inherent in the Native Hawaiian’s lack of Federal Recognition and lack of unification that complicate your aim to assure information is adequately disclosed and voices are heard.

XVI. Humpback whales, endangered Hawaiian monk seals, threatened Honu

Include an assessment of the harm the project will do to threatened and endangered ocean life including humpback whales, Hawaiian monk seals, and Honu, and specify the actions you will take to compensate for these effects. Address the effects of these threatened and endangered species pursuant to HRS 195D in a Habitat Conservation Plan that assures a net benefit to the species.

XVII. Deterioration of Support for State Clean Energy Goals

We are concerned wind farm development at this site could ultimately result in an uprising in opposition to the State’s clean energy goals. Assess the effect proceeding with consideration of wind turbine development off Ka’ena Point will have to the public’s support for Hawai’i’s clean energy goals. We are so disgusted you would consider wind turbines in this location that we would rather press our legislators and Governor to reduce Hawaii’s clean energy goals than see this project move forward. Assess the effect the wind farm will have to climate change factors including sea level rise, temperature, and energy independence. Tell us how the wind farm would reduce climate change and reduce electricity costs in exchange for disposing of the rights of Native Hawai’ians, residents, and ocean users. Detail the

carbon footprint associated with construction, transportation, installation, and maintenance of the at-sea turbines in comparison to solar and biofuel alternatives.

If a wind farm in the waters off Ka'ena Point is necessary to meet the State's clean energy objectives, then reduce those objectives so a wind farm off Ka'ena is no longer needed to meet the goals. If you do ever hope to develop wind energy at this Ka'ena site, it might be wise for your developer to withdraw their lease application or for you to find a way to withdraw this site from consideration for now, and, years from now, once the reasonable alternatives have been tapped, only then should you come to the public with any development at this extremely sensitive and controversial site. Attempting to move forward with wind farm development at this site, now, seems to be a lose-lose situation for everyone.

XVIII. National Marine Sanctuary Nomination

In BOEM's July 21, 2016, public meeting introductory presentation, your public relations specialist indicated if the waters off Kae'na Point were designated a National Marine Sanctuary, you would remove it from consideration for wind farm lease development. We have coordinated with NOAA and we understand we can specify the important existing cultural practices, spiritual rights, fishing, boating, wildlife conservation, unobstructed view, unobstructed surf, and other aspects of the area and the Sanctuary would be managed to conserve these existing rights and uses. We are coordinating with cultural, environmental, business, and community groups to draft a nomination of the site as a National Marine Sanctuary to assure exiting rights to remain intact. However we hope your applicant has developed a respect for our people and our environment as a result of the information you have received during this "scoping" period and they respectfully withdraw their lease application. If the applicant decides to move forward with studies to address the public's concerns regarding the wind farm, please send us copies of the annual and final reports, data, and information obtained in the studies to help inform our National Marine Sanctuary nomination.

XIX. Summary

In summary, we strongly oppose at-sea wind farm development in the ocean waters off Ka'ena Point. If the proposed wind farm were to be constructed, O'ahu kānaka maoli would see the wind turbines during the day and at sunset or, at night, bright blinking industrial lights as they travel toward the Leina a ka `Uthane in their last moments of life. This one harm, standing alone, is reason enough your applicant should respectfully withdraw his lease application.

The proposed *Oahu North* wind farm would also bar us from important fishing grounds, contaminate our ocean, and kill our wildlife, whereas our preferred alternative – solar PV with battery storage – would have none of these harmful effects. Placement of one mile to over two miles total cross-section of these proposed submerged metal wind float cylinders reaching more than 70 feet of water depth will cause ocean waves to ricochet and become less organized as the move across the giant floating structures. This site selection, due west of the North Shore is completely unacceptable because so many of our people's lives, in addition to our North Shore economy, center around surfing clean powerful west swells.

The wind turbines will be visible by day; they will ruin our sunsets, and we'll have to look at blinking red lights in our ocean. This picturesque view of Ka'ena Point is one of the most beautiful scenes in the world at sunset – it should not be developed into an industrial complex, especially when there are many less harmful alternatives available. Harm to our surf and our view will reduce our quality of life and, just when we decide to move because we've found ourselves living in an industrial landscape, we'll find our property values are less than they would have been – because the reasons we want to move are the same reasons others will chose not to move here.

One of the reasons for Hawai'i to move toward clean energy was to reduce our dependence on imported oil – so we wouldn't have to lose so much of our State GDP offshore. The profits from this wind development would go to a Danish company. All things considered, we would rather burn oil than see this wind farm go up – we care about clean energy, but not at the cost of so much to so many. We believe any purpose or need you may have for a wind farm in our ocean could be met, without these adverse environmental and cultural effects, with our on-island installation of solar and utility-scale battery storage. The solar alternative would keep \$2.8 to \$5.6 Billion in our local economy, rather than seeing profits go to overseas investors. Landowners including Kamehameha Schools, residents, and businesses in Hawaii are being blocked from installing solar PV – while you consider authorizing development of this egregious project - 'A'ole! We believe solar PV with battery storage is the environmentally superior alternative.

We urge you not to proceed with authorizing the proposed wind farm in the waters off Ka'ena Point for various reasons outlined in this letter demonstrating that this proposal violates the National Environmental Policy Act, and less harmful alternatives such as solar energy are readily available. We recommend you partner with the Department of Energy to develop a solar PV with battery storage alternative to the wind farm project or choose from the many other less harmful green energy alternatives. Thank you for this opportunity to provide you with our preliminary concerns about the project. Please feel free to contact us at malamanaluohana@gmail.com if you would like additional information about our suggestions.

XX. Signatures, CC, and Appendices

Chris Bruns, Sunset Beach
Mālama Nalu 'Ohana Founder
malamanaluohana@gmail.com



8-27-16

(Signature)

Date

Tom Pohaku Stone
KANALU Administrator

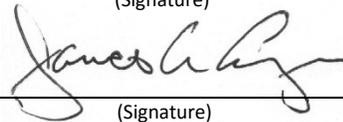


8/30/16

(Signature)

Date

Kimo Lyman
Mokuleia



8/31/16

(Signature)

Date

Michael Dailey
President, Hawai'i Polo Club
Mokuleia

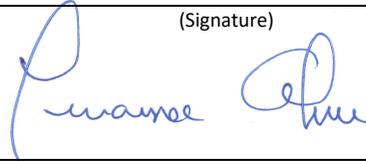


9/5/16

(Signature)

Date

Terrance Ahue
Hawaiian Water Patrol

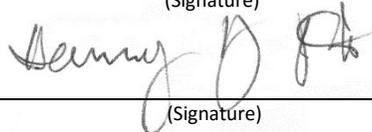


9/2/16

(Signature)

Date

Harvey Ota

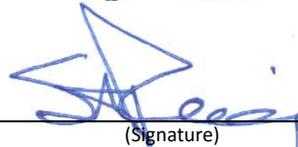


6/27/16

(Signature)

Date

Stewart Ring
President,
Mokuleia Community Association

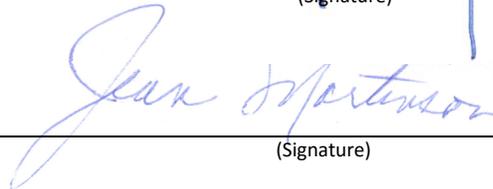


9/4/2016

(Signature)

Date

Jean Martinson
President, Sunset Beach
Community Association



9/03/16

(Signature)

Date

Richard Lam
Lifetime Waterman, Fisherman
Beachboy, Former President
Waialua Boat Club

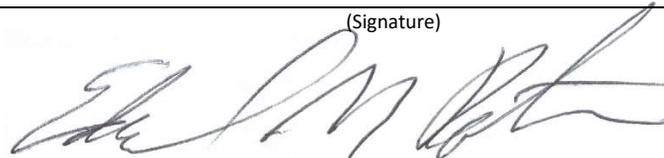


9/3/16

(Signature)

Date

Eddie Rothman
Hui O He'e Nalu (Da Hui)
Sunset Beach

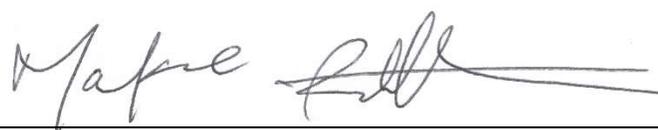


9/3/16

(Signature)

Date

Makua Rothman
Makuakai Rothman Inc.
Hui O He'e Nalu (Da Hui)
Sunset Beach



9/3/16

(Signature)

Date

Robert Leinau
Concerned Citizen
Pupukea



9/2/2016

(Signature)

Date

Mike Kealoha
Fisherman



(Signature)

Date

Mike Takahashi
Co-Founder: Moloka'i20'ahu
Paddleboard World
Championships



(Signature)

Date

Andrea Woods



(Signature)

Date

Theresa Barron
Sunset Beach

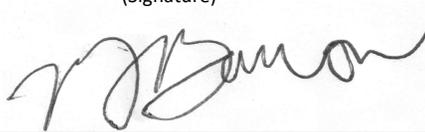


8/21/16

(Signature)

Date

Timothy Barron
Fisherman
Sunset Beach



8/21/16

(Signature)

Date

Bill Quinlan
Velzyland



(Signature)

Date

Bill Martin
Island X Hawaii



9/2/16

(Signature)

Date

Darrick Doerner
DD SEA INC



(Signature)

Date

Cathy Shanley,
Realtor and President of
Friends of Sunset Beach



(Signature)

Date

Tim Shanley
Waterman / Dad
Hui O He'e Nalu (Da Hui)



9/4/16

(Signature)

Date

Mike Slattery
High Surf Accessories

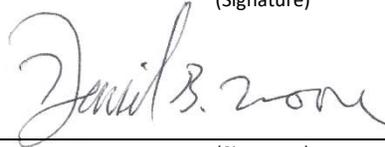


9/2/2016

(Signature)

Date

Dan Moore
Waterman
Outerreef.com

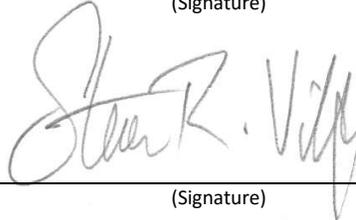


9/4/16

(Signature)

Date

Steve Villiger
Villiger Construction

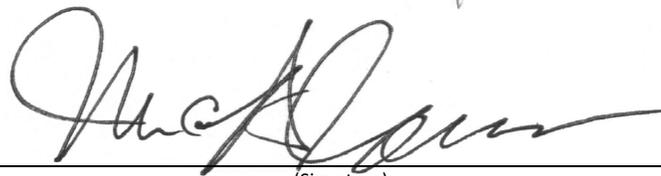


9/5/16

(Signature)

Date

Michelle Alarcon, Esq.
Sunset Beach



9/4/2016

(Signature)

Date

Blake McElheny
Pupukea



9/5/2016

(Signature)

Date

Nancy Lam
Fisherwoman

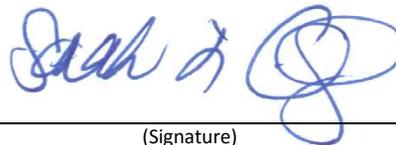


9/3/16

(Signature)

Date

Sarah I Cadiz
Sunset Beach Resident



9-4-2016

(Signature)

Date

Drema Carroll
Waterwoman

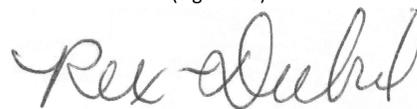


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Date

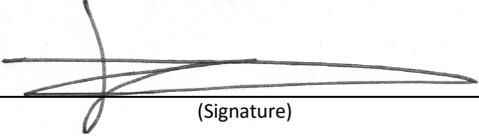
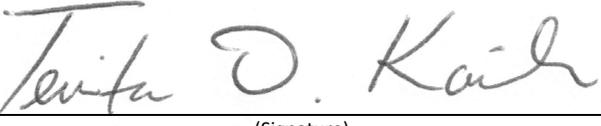
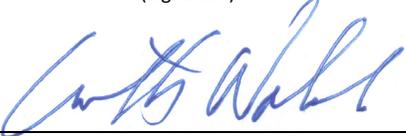
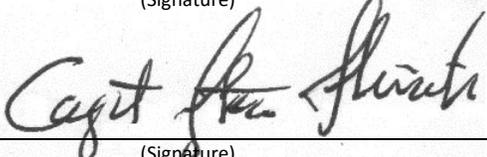
Rexann Dubiel
School Teacher
Sunset Beach



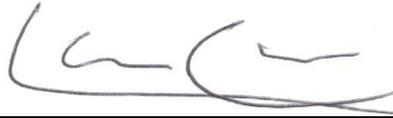
8/27/16

(Signature)

Date

Tim Carroll Carroll Surfboards		9-3-16
	(Signature)	Date
Tiger Doerner		9/2/16
	(Signature)	Date
Melvin Hovakimian North Shore Watercraft SVC		9/3/16
	(Signature)	Date
Aaron Gold Surfer Haleiwa		9/2/16
	(Signature)	Date
Shawn Briley Surfer		9/2/16
	(Signature)	Date
Elizabeth J. Rago Kahuku		9.4.16
	(Signature)	Date
Tevita O. Ka'ili, Ph.D. Anthropologist Kahuku		9/4/16
	(Signature)	Date
Kenneth M. Walsh Fisherman Surfer		
	(Signature)	Date
Captain Steve Shiraishi Haleiwa Fisherman		
	(Signature)	Date
Rusty Jose Fisherman		
	(Signature)	Date
Leslie Ann H. Jose Haleiwa Small Boat Harbor Worker		
	(Signature)	Date

Laine Close
Close Inc
Contractor, Surfer



9/3/16

(Signature)

Date

Robin Obata
Concerned Surfer



9/3/16

(Signature)

Date

Julie Cooke
Kuilima

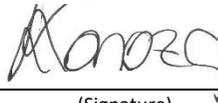


9/5/16

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Date

Leslie Konoza
Mokuleia

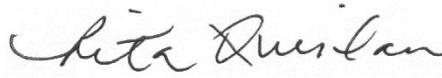


Aug 31, 2016.

(Signature)

Date

Rita Chang Quinlan
Waterwoman
Velzyland



9/5/2016

(Signature)

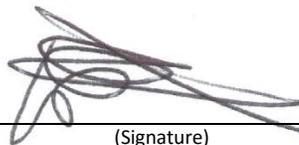
Date

Debbie Herrera Malama na Honu VEC

(Signature)

Date

Lono Guerre-Rothman
Hui O He'e Nalu (Da Hui)
Sunset Beach



9/3/16

(Signature)

Date

Kaipo Lynn Doorley
Da Hui, Inc.

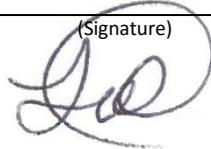


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Date

Todd Dunphy
Sport Karate Da Hui

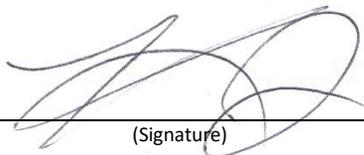


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Date

Kawika Urso
Carpenter

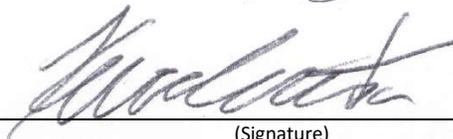


9/4/16

(Signature)

Date

Kiron Costa



9/5/16

(Signature)

Date

Donald Roth
Fisherman



(Signature)

Date

Kerry Germain
Haleiwa

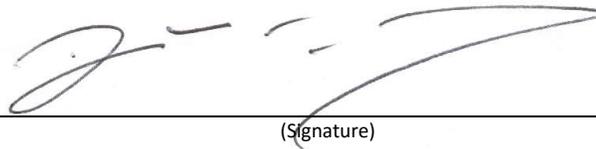


(Signature)

9/5/16

Date

Roberto P. Lopes (R) PB
Team Real Estate, Inc., COO



(Signature)

9/6/2016

Date

CC: Dr. Ernest Moniz, Secretary of the U.S. Department of Energy, The.Secretary@hq.doe.gov (Thank you for your ongoing efforts to help Hawai'i meet our clean energy targets. Please assist BOEM with their development of onshore alternatives to their proposed Ka'ena Point at-sea wind farm, such as solar PV with battery storage).

CC: Alexis Strauss, Acting Regional Administrator, US EPA Pacific Southwest, Region 9, 75 Hawthorne St., San Francisco, CA 94105 (Please enforce NEPA).

CC: Dr. Christy Goldfuss, Managing Director, Council on Environmental Quality, 722 Jackson Place, Washington D.C. 20006 (Please assist DOI/DOE cooperation to address a solar PV with battery storage alternative).

CC: Our receptive friend in Congress, Representative Tulsi Gabbard, 300 Ala Moana Boulevard, Room 5-104, Honolulu, HI 96850.

CC: Senator Brian Schatz, 300 Ala Moana Boulevard, Room 5-104, Honolulu, HI 96850.

CC: The Honorable David Y. Ige, Governor, State of Hawai'i Executive Chambers, State Capitol, Honolulu, Hawaii 96813

CC: Our advocate, State of Hawai'i Senator Gil Riviere, Hawaii State Capitol, Room 217, 415 S Beretania St, Honolulu, HI 96813.

CC: Our advocate, Representative Lauren Kealohilani Matsumoto, Hawaii State Capitol, Room 303, 415 S Beretania St, Honolulu, HI 96813.

CC: Our advocate, Honolulu City Council Chair & Presiding Officer Ernie Martin, City and County of Honolulu, Honolulu Hale, Room 203 Honolulu, HI 96813.

CC: Honolulu Mayor Kirk Caldwell, 530 South King Street, Room 300, Honolulu, Hawaii 96813

Appendices: Our letter summarizes a subset of the concerns our community has with the proposed action and we provide a subset of environmentally superior alternatives to the proposed action. Opponents of the Ka'ena (*Oahu North*) wind farm development represented herein include the fifty-five community groups and individuals who have joined us in signing this letter, in addition to over 500 members of the affected communities voicing concerns via facebook and the 317 people supporting our Change.org petition online. The Change.org petition letter is a previous version of this letter. Almost all of these opponents expressing opposition to the wind farm on facebook and Change.org are local - from the North Shore and West O'ahu communities. Facebook comments and a list of individuals opposing this wind farm on facebook, and the Change.org petition with comments and signatures are appended to below.

Recipient: John.Romero@boem.gov and Karen.Herrera@boem.gov

Letter: Greetings,

RE: Comments on Hawaii EA; Oahu North Site

August 14, 2016

Regional Director

BOEM Pacific OCS Region

760 Paseo Camarillo

Suite 102

Camarillo, California 93010

Dear BOEM Regional Director:

We are writing to express our concern regarding your proposal to consider leasing ocean waters off Ka'ena Point for wind farm development – our comments are limited to the O'ahu North portion of your proposed action. We will do everything practicable to block wind turbine installation at Ka'ena. A wind farm at this location would be an affront to our kānaka māoli, bar us from important fishing grounds, ruin our sunsets, rob ocean energy and disturb our world-class west and north swells, reduce our financial net worth, mar our night sky with industrial red blinking lights, contaminate our ocean, kill our wildlife, cause fear and stress in the dying moments of all O'ahu kānaka māoli. We believe any purpose or need you may have for a wind farm in our ocean could be met, without these adverse environmental and cultural effects, with installation of solar and grid-level battery storage; comparable battery storage + solar PV would cost approximately \$161 Million less than the proposed Ka'ena Point wind farm. Kamehameha Schools, residents, and businesses in Hawaii are being blocked from installing solar PV by our utility company – while you consider authorizing development of this egregious project - 'A'ole! E mālama nalu.

In August 2015, the North Shore Neighborhood Board informed the wind farm developer the North Shore would not allow wind farm development off Ka'ena Point; you and your applicant have met in private with the North Shore Neighborhood Board President and other leaders of our community. At your agency's July 21, 2016, well-attended public meeting on the North Shore, all speakers and, in two votes, all public attendees, unanimously opposed any further consideration of the Kae'na (Oahu North) site. On page 6 of your March 7, 2012 Hawaii Task Force PowerPoint <a...

Comments

Name	Location	Date	Comment
Dawn Bruns	Haleiwa, HI	2016-08-14	The ocean waters off Ka'ena Point are not the place for industrial wind farm development. Please remove this site from further wind farm consideration.
Celene Roberts	Waialua, HI	2016-08-14	Because they already wrecked Pupukea/Waimea.
Cindy Covell	Waialua, HI	2016-08-14	The windmills will be bad for the albatross, bad for the migrating fish, bad aesthetically, and have NO value to the North Shore residents or tourists. We DO NOT want these monstrosities in our back yard. Pursue solar more aggressively to meet clean energy targets.
makai mcnamara	Haleiwa, HI	2016-08-14	NO NO NO NO
Jim Covell	Millington, TN	2016-08-14	I'm am opposed to the windmills. They are not good for the local environment!
Brent Schlea	lahaina, HI	2016-08-14	This project is insane. The adverse effects more than outweigh the benefits. Off shore wind farm developed in an area with the largest waves in the world is a disaster waiting to happen, to say nothing of the blatant disrespect of Hawaiian values it would have.
Brent Schlea	lahaina, HI	2016-08-14	I am curious as to know who the engineer who came up with the idea has actually seen 20 foot swell at 18 second intervals with the west-southwest winds and have any idea what's it going to do to these tall somewhat wind resistant structures floating out there, just waiting to get blown off their mooring only to wash ashore who knows where, Kaena, Mokuleia, or even Makaha. They might last awhile, but bumbye, guaranteed some going get loose. Lose money, and piss off plenty Hawaiians in the process. Give it up already!
Cole Doeh	Haleiwa, HI	2016-08-14	this is a terrible location for a wind farm!
Bill Yeo	Haleiwa, HI	2016-08-15	I'm signing because I am a Hawaii resident from 1977 to the present and I agree with all the facts presented in this petition keep Hawaiian lands in Hawaiians hands!! Aloha Nui to all Hawaiians!!!
laurie puglia	kahuku, HI	2016-08-18	The wind turbines do NOT belong off the North Shore of Oahu! This is an endangered bird sanctuary and whale migration area. Swell heights can reach dangerous levels that can compromise these structures and could have devastating oil leaks. Our ocean wildlife is at stake. NO NO NO!!! We should use solar farms. It takes more carbon emissions to make wind turbines than they will ever even generate. Wind turbines are a SCAM!
Rexann Dubiel	Haleiwa, HI	2016-08-18	We said, "No", last year. We mean it. We do not want windmills off Kaena Point ever! Go somewhere else with your greed and shortsighted project.
Ayesha Liquorish	Haleiwa, HI	2016-08-18	NO MEANS NO
GREG HUNGERFORD	Waialua, HI	2016-08-18	We support clean energy, but not at this great cost to these things we hold sacred. Please hear us this time - no means no.
elizabeth merrill	Haleiwa, HI	2016-08-19	As before there are so many reasons why the wind farm is being rejected by our community, and yet the people and the reasons are NOT BEING HEARD. So I stand with my neighbors yet again and say NO AGAIN
Rexann Dubiel	Haleiwa, HI	2016-08-23	We need solar! Windmills will begin rusting and corroding immediately. The environment will be ruined!
Erika Dittmar	Haleiwa, HI	2016-08-27	There are so many reasons to petition wind turbines off the coast of kaena point. My top concern is wildlife - sea birds and aquatic animals. We have the resources and thousands of roofs for solar panels, s much safer alternative.
Jade Sun	honolulu, HI	2016-08-27	This is the most ridiculous idea ever. Solar all the way. Malama ka aina!

Name	Location	Date	Comment
Caroline Cummings	Kahuku, HI	2016-08-27	i do not believe in this project.. once again it ruin the eco system on that area of the island
Melissa Lewis	Honolulu, HI	2016-08-27	Wtf. Stop this madness!!
Karen Stokely	Haleiwa, HI	2016-08-27	protecting the environment as it is, is soooo important. changing the water, air, land is not responsibly managing this beautiful aina. please don't make the most beautiful view, and sacred place on the planet a wind farm. too much has been built already.
Robert Caton	Waialua, HI	2016-08-28	I oppose this with every ounce of my being. Wind farms can not and have not been proven to provide the energy that sole can. The only reason this is being pushed by the state is due to the fact that they can make a buck off of the taxpayers which we be forced to find this abomination
Chance King	Haleiwa, HI	2016-08-28	These wind farms would put protected birds in danger, and limit fishing grounds in this area. this is a horrible idea and i oppose this to the fullest
Claudia Ferrari	Haleiwa, HI	2016-08-28	seriously?? who's idea was that so I make sure NOT to vote for him/them??!!!!
Nathan Amatore	Haleiwa, HI	2016-08-28	I'm down for alternative energy, but this is ridiculous! Fuck No to these windmills!!!
teresa berthiaume	Haleiwa, HI	2016-08-28	We should do more solar....it is Hawaii for goodness sakes....wind too large, expensive, ugly and will ruin any ocean view as well as harm the fish, and we get no benefit it seems.
Denice Kuehu	Waialua, HI	2016-08-28	In agreement with my community and conditions of this petition I oppose development of the windfarm. Our lives depend on this decision. Clean energy requirements of our state can and will be met. This location has been protected by our community and we will continue to do so. The enviornment at Kaena point is not an adequate location for your project but it does provide another necessity... Life. By land and sea. To propose a wind farm so close to a sanctuary, taking the risk of polluting our ocean, investing money in an unpredictable enviornment, and going against the host communities decision of refusal will not be supported. Again, our clean energy requirements can and will be met by exploring other options at another location. No Wind Farms.
Sean Quinlan	Haleiwa, HI	2016-08-28	This project is harmful to our community and should not move forward.
Casey Bassett	Honolulu, HI	2016-08-28	I completely agree with everything said here.
Carolyn Sandison	Haleiwa, HI	2016-08-28	We should invest in solar power and preserve the beauty of our islands.
mike mcneace	waiialua, HI	2016-08-28	Kaena Point is a seabird protection area . Please solar !
Alana Barrera	Haleiwa, HI	2016-08-28	Thus is the dumbest idea! It would deface a main national iconic tourist spot. The state always harps on doing things for the betterment of tourism. Put solar farms on the old c&h sugar field. Protect our land and sea!
Sunshine Williams	Waialua, HI	2016-08-28	I love the island that I was born and raised on, that my children were born and are being raised on. This change is WRONG! Native wildlife live there, historical sites are there, & prestine untouched mother nature thrives there. Somethings, especially here, are meant to stay untouched. Please stop disturbing the past present and future of the aina! Mahalo!!!☐
Nathan Heid	Haleiwa, HI	2016-08-28	I've said this before but....The only people that will make money on this is the builder and the company that gets the service/maintenance contract. The public will never see the savings
Claudette Forrest	West Palm Beach, FL	2016-08-28	Please do not ruin this beautiful area that I am blessed to visit by putting in a Wind Farm. Thank you.

Name	Location	Date	Comment
Jacob Shannon	Waialua, HI	2016-08-28	This disruption would ruin the beautiful view I look at every night. I am a local physician and would seriously consider moving away if this went through as it is obviously not in the best interest or desires of the North Shore community and would prove that the big business/government connection could care less about the will of the people.
Stan Espinosa	Waialua, HI	2016-08-28	Why don't you put this out Waikiki? They are the ones who are going to use all the power?
Denice Kuehu	Waialua, HI	2016-08-28	If you are reading this to find out more information to make a decision. Those who push this project do not live on or near the North Shore of Oahu. The other properties proposed did not get approved due to tourism and its effects on scenery and experience. Visitors expected will decline if this is in view. Now we the North Shore community must fight to keep it out of our back yard. The requirements to meet Hawaii's clean energy needs has limited our defense to an environmental assessment. Full disregard to the voices of the host communities decision of refusal more than once. Every arrangement made by BOEM to reach out to the community they were told NO WINDFARM. This project is not self sufficient. We will pay for it ...twice. By taxes and monthly electric bills. Remember we have already made our contribution with wind farms, we do not need any more. Remember the only information that will be included in the submission of final findings will be in support by identifiable ancestral sites, and cultural artifacts. Full disregard of the bird sanctuary. The fish this place provides our community. We still actively gather to feed our families and neighbors. We are still able to gather clean untainted sea food and salts from this specific location. The reefs are just now beginning to regenerate. Help Protect it from all industrial interests. Communities like ours are disappearing.
Noel Mackisoc	Kailua, HI	2016-08-28	So few natural areas left on Oahu, leave Kaena Pt alone.
Braden Smith	Waialua, HI	2016-08-28	The constant growing of infrastructure on this island need to be slowed down. Its getting out of hand. I believe its time to stop making more, and start appreciating what we already have.
Burt Sutherland	Haliwa, HI	2016-08-28	The North Shore already has 36 industrial wind turbines. Why can't the next 36 be placed somewhere on Oahu other than here on the North Shore? The majority of electrical uses reside on that side of the island. Better to put the generation closer to the users.
Angela Woolliams	Honolulu, HI	2016-08-28	Kaena Point is one of the last untouched portions left on our island-home. It's a common place where our local fishermen, our endangered Hawaiian monk seals and birds at the protected sanctuary congregate. It will especially threaten those birds flying into the protected bird sanctuary. Any loss of these beautiful creatures or limiting access to this coast line for our native, endangered animals is unacceptable.
Benjamin Puccetti	Honolulu, HI	2016-08-28	We don't need this eyesore!
Luwella Leonardi	Waianae, Hawaii, HI	2016-08-28	I attended 6 BOEM meetings
Dana Ishii	Haleiwa, HI	2016-08-28	Residents haven't seen benefits of the 2 windfarms we already have on island, and it's questionable how many birds and bats those kill. Government making it difficult for people to put solar on homes, has a poor excuse of a recycling program and really shouldn't be encouraging another big industry to come in and change the land. On top of the harm and potential harm they could/would cause to the wildlife and oceans. Let's clean up and make better the systems we have in place before we add to the mess.
Lance Walters	Newcastle, CA	2016-08-28	Keep da country country!!

Name	Location	Date	Comment
Michell Gulden	Honolulu, HI	2016-08-29	I would like to see the land preserved and not have this eye sore like on the other side of North Shore.
Charlotte Kamauoha	Kahuku, HI	2016-08-29	No more wind turbines in the north shore! There are better methods of clean, alternative energies that will not harm people, fish and wildlife; and do not trample on our cultural values and our way of life. NO MORE WIND TURBINES!!!
ana benchimol	haleiwa, HI	2016-08-29	This is so sad.
Angela Burley	Waialua, HI	2016-08-29	I know this plan is not in the best interest's of the people, wildlife and environment and all in the community agree. This plan of a wind farm in this particular area will cause more harm than good for the future of the island. .
Danielle Erickson	Mililani, HI	2016-08-29	They will destroy the beautiful view with their ugly blinking red lights and what will they do the the albertrouses.
Shelley Boling	Waialua, HI	2016-08-29	They are an eye sore and right near a bird nesting refuge? Is this a joke or are these people that bought out & trying to slip this over our heads again!??
Aleui Lyman	Waialua, HI	2016-08-29	Its my backyard and its an ridiculous proposal!
Olympia Frink	Waialua, HI	2016-08-29	This island gets more sun than wind, solar energy!
Colleen Carswell	Waialua, HI	2016-08-29	The full letter explains, in great detail, the reasons why we oppose a Ka'ena Point wind farm. It also offers alternative, cost-effective, clean energy solutions. The requests are valid and logical. Choose solar battery storage instead.
Deanna Sabido	Mililani, HI	2016-08-29	It will take away the beauty. Also, who companies profit from this never giving back to the community.
Kayne Kuewa	Redmond, WA	2016-08-29	Born and raised on the Northshore . i cant imagine a beautiful place is gonna get destroyed by WIND FARMS quit building its damaging our landscapes ▯ NO WIND TO FARMS
Jackie Burtch	Temple, TX	2016-08-29	Hawaii is not some random land to be for science projects. All the natural beauty of Hawaii is being destroyed by these man made projects. I understand the concept of progress however; enough is enough, its time to work on preservation of the land. Hawaii needs to be left alone; at this point be recognized for it's natural beauty or what's left of it.
Felicita " Ku'uipo" Garrido	Waialua, HI	2016-08-29	The wind mills kill native birds and bats. Not pono! Solar panels are less invasive.
Jasmine Owens	Wahiawa, HI	2016-08-29	I'm signing because enough "modernization" has been done to Hawaii. This not only subjects the Tourism business (most of Hawaii's income) to be lessened, but it also obstructs the view of the beautiful north shore. Enough has been done to it. It wrecks havoc on the eco-system for both fish and bird, human and nature. Families have swam and fished out here for literally hundreds of years. If you keep trying to do things like these and "plan for the future", there will be no more future for Hawaii. It'll be just like the mainland. Crappy and filled with a bunch of people who have no more "aloha" spirit to give because you took away everything "aloha" stood for.
Melissa Meek	Waialua, HI	2016-08-29	Not a good idea
Wesley Liquorish	Haleiwa, HI	2016-08-29	The North Shore of Oahu is one of the most beautiful places in the world. It should not be turned into an industrial zone!
kristie Doss	Aiea, HI	2016-08-29	I thik they should leave the aina, especially the ocean, alone! Don't ruin the picturesque beauty of this side of the island with unnecessary wind farms!
Luana Nery	Vancouver, VA	2016-08-29	I am a former North Shore resident - born and raised. Wind turbines are an eyesore and interrupt the beautiful island views.

Name	Location	Date	Comment
otis schaper	Wahiawa, HI	2016-08-29	Wind farms are obsolete technology
Doug Groenveld	honolulu, HI	2016-08-29	There are better places for wind farms on or around the island. Let's keep ka'ena point sacred like the people before us. Respect
Beverly Paracuelles	Wahiawa, HI	2016-08-29	They don't need unnecessary
Harold Losano	Wai'anae, HI	2016-08-29	I am sign it cause it's a scared place do your research
Diane O'Neal	Richmond, VA	2016-08-29	Ka'ena point is one of the most beautiful places I've been. I can't imagine the skyline filled. It would be a devastation of natural beauty.
Joshua-David Hemakanamaikakua Holley	Waialua, HI	2016-08-29	A'OLE!!!, KEIA HEWA LOA, E HO'OKANO KE WIND FARM KA'ENA. Na Ka'ena WAHI PANA O O'AHU NA AHUPUA'A!!!. DO NOT BUILD THIS DISGUSTING WIND MILL!!!. It is a sacred place, not only for iwi (bones) but for i'iwi birds as well!!!. HELA PELA OE E KAKI'O OUKOU!! Me ka NUI KAUMAHA!!!. i rebuke this HEWA!. NO WINDMILLS!. E MALAMA O KE KAI NA HE'E NALU O KA'ENA!.
Linda OBrien	Wahiawa, HI	2016-08-29	It is an insult to all Hawaiians that the dlnr feels it has the right to sell out our nature preservation sites!
Natasha Koa	Wai'anae, HI	2016-08-29	The placement of windturbens will pollute and effect not only marine life, but our aina and ways and means of catching our food in its whole of purity. That includes fishing, diving and so on. Kaena point are one of a few untouched places and it should stay that way. There are many other places windturbens can be placed for wind energy. It is a part of mine and many other Hawaiians culture to have sacred places to go to and practice our culture. Please leave kaena point alone and find somewhere else to put windturbens. Mahalo!!!
Raelyne KaMaKa	Waiana, HI	2016-08-30	There are other means of converting energy for consumption. Solar technology of harnessing the sun is readily available almost every day of the year. Hawaii needs clean beaches not only to enjoy a day with the family but also for those families that rely on the ocean's treasures for substability.
Karilynn Kuewa	Haleiwa, HI	2016-08-30	I signed because, born n raised in Haleiwa should stay just as it was, n is..country! NO MEANS NO! Its Hawaii! Please!!!!...leave what's left of our aina just as it is! #Hawaiianislands #keppdacountrycountry! Aloha da aina! MAHALO
Keala Apuakehau-Smith	Waialua, HI	2016-08-30	We do not need those in our ocean!!! I fish in that area and I would not want to see that in the ocean. I want to see just ocean.
Jennifer Macagnone	Honolulu, HI	2016-08-30	I am concerned with the negative impact it will have on the enviornment!
Jason Lee	Wahiawa, HI	2016-08-30	Im signing because we don't need or want a wind farm in our waters outside of kaena point or around any of our islands. You will damage way more marine life and our way of life by installing a stupid wind farm that does nothing for the island residents.
Michale Martin	Haleiwa, HI	2016-08-30	This is in ethical and not helping the environment. Yes we need different energy sources. Solar works just fine. How can you lease wind? No one owns it. The government is getting to nuts.
Lori McKeown	Mililani, HI	2016-08-30	I was born and raised in Waialua, and respect what natural habitat we have left on the North Shore. No wind farms, please!
grace morgan	Culver City, CA	2016-08-30	Leave the island ocean and all inhabitants alone.
Tracy Walker	Haleiwa, HI	2016-08-30	I do not support ocean wind farms!
Charlie Walker	Haleiwa, HI	2016-08-30	I do not support a Ka'ena Pt. wind farm.

Name	Location	Date	Comment
Pattie Wright	Haleiwa, HI	2016-08-30	I'm signing for so many reasons. The windmills in Kahuku failed, the Haleiwa windmills offer no benefit to the community. Enough with putting up these tower of metal that deface our island. Nuff already!!!
lokepa- Lopaka Suyat	Carrboro, NC	2016-08-30	I am born and raised in waiialua and Kaena point is sacred spot for our people! We have lwi kupuna All the grounds ,and its a bird safe haven pulse its gonna look abstract like the one u put up on Waimea! U cut all our Hawaiian Indangered Trees Koa trees Ohi tree Milo and K'o trees which can never grow back! So yeah take it to your house and put it in your yard!!! And I'm also a Native Hawaiian and America has Over stayed there time Beat it!
jim mincher	wbch, NC	2016-08-30	I spend 3 months on the beautiful North Shore and call it my second home! Please DO NOT BUILD A WIND FARM !!
Traci Rambo	Nemo, SD	2016-08-30	Extremely opposed.....
Wendy Barnfield	Haleiwa, HI	2016-08-30	what disturbs me greatly is the disregard for the view plain of the islands no matter where you are located. The islands are what they are for their beauty and to put windmills up out at sea from Ka'ena Point would be raping that view plain. Absolutely no more windmills.
Sheldon Plentovich	Honolulu, HI	2016-08-30	Kaena Point is an important area for nesting seabirds. The community has supported the restoration of this area and a wind farm off the point will be a step in the wrong direction. A solar alternative is preferable.
Shauna Parsons	Charleston, SC	2016-08-30	It is a beautiful nature sanctuary. I have seen animals there that I have not seen anywhere else on the island.
Elisa Felgen	Las Vegas, NV	2016-08-30	I lived in Haleiwa for many years, and my family still lives there. Windfarms are ugly and harmful. Please do not ruin the beauty of Ka'ena Point. I
Kenneth Lasbury	Kahuku, HI	2016-08-30	It violates the environment in many ways and in perpetuity. It is a visual blight day and night.
Barbara Santanna	Waialua, HI	2016-08-30	There is a better solution..we live in one of the most Beautiful places on Earth..that should take priority over having to see these wind towers.
Nadia Le Bon	Berkeley, CA	2016-08-30	We need to keep Kaena point wild.
Sean Tiwanak	Kapolei, HI	2016-08-30	Wind farms destroy the beauty of the land. The current technology is bulky. I have driven through palm desert and it is an eyesore. Also there are major problems with power storage and batteries. I like the idea of offshore wind turbines. Also development of new designs based on closed systems like jet engine turbines. The habitat in Kaena should not be ruined with mediocre t each and benefit
Randall Scott	Kahuku, HI	2016-08-30	While I support renewable energy, it should only be located in areas away from population centers or out of sight. Sight and noise pollution is no different than obnoxious carbon emissions.
Lisa McDaniel	los Angeles, CA	2016-08-30	I'm am AGAINST the Ka'ena Point Wind Farm. There is no reason to use this archaic technology when so many better ones now exist. The likelihood of them surviving for long in that area is farfetched at best - and it will negatively impact our ocean, seabirds, migratory animals like whales and on and on. It is also a sacred area and a devastating affront to Native Hawaiians. And we don't know how it might effect surfing or fishing. This is a terrible idea, and would be a visual blight in this beautiful area, which will likely effect tourism, and definitely bum out all the locals. Please do NOT build this awful wind farm!

Name	Location	Date	Comment
Will Scott	Kailua, HI	2016-08-31	When there are many more feasible options available, why keep pushing for the ugliest choice? What happens if these things break down, and there's no way to just repair the damage, thus potentially causing another toxic spill in a large body of water? The windfarm won't even be in any of our bays (we don't want them there, either), meaning that the spill will only spread outward into the ocean. When there are always more ecologically-conscious and financially stable ways to get what we want, why go for the worst combination of both? Stop trying to get this s*** in the water, no means no!
Zoe K	Mililani, HI	2016-08-31	It is a complete destruction of environment and beauty, solar power can easily help as a renewable energy source instead.
Diane Quilinderino	Waialua, HI	2016-08-31	I live here!! What happen to paradise leave it as is!! It looks ugly so does Waimea valley who benefits from that I'm sure not the community
Francesca Battaglioli	Waialua, HI	2016-08-31	This is my favorite spot in the island, the sunset view would be forever ruined!
Pi'ilani Lua	Hana, HI	2016-08-31	it's wrong. Ka'ena has always been a sacred leaping off point for the souls as they transition into the next life. Isn't that sacred enough for you????
Carrie Tiffe	Haleiwa, HI	2016-08-31	I'm signing cause I am against the wind mill farm at ka'ena point. We need to preserve our land please NUFF no more windmills Mahalo
Angelique Amour	Bronx, Australia	2016-08-31	I'm signing because I support my Hawaiian brothers and sisters, it is the spirit of all Pasifika people to unify and help protect what is sacred and of greater value than material wealth. Once we lose these sacred treasures we can never get them back. They will be lost forever.
Deborah Andrade-Bajo	Haleiwa, HI	2016-08-31	To protect our sacred aina!!
Lara Sennett	Wahiawa, HI	2016-08-31	Don't want more windmills on the North Shore! Also, it will affect my husbands commercial fishing!!
Donn Peiler	Waipahu, HI	2016-09-01	It's the right thing to do
Shalei Meneses	Waialua, HI	2016-09-01	This can not happen! I've lived NORTHSORE all my life. This place is about the ocean and our amazing views. The wind farm will ruin it! There is a bird sanctuary out there. Leave us alone! Go make a wind farm in fucking Hawaii Kai!!!!!!
Sheryl Sanchez	Mililani, HI	2016-09-01	I'm signing because I was born and raised in Haleiwa/Waialua I grew up on these beach's we fish these waters, my kids do to we survive off of the ocean it's our playground, this would ruin our waters and food supply of fresh fish... Please don't ruin our Hawaii we do not need more technology ruining our islands natural beauty, go build this in your backyard where you grew up!!!
mariah white	honolulu, HI	2016-09-01	its a BLIGHT on the view, and environment. No matter what these companies say-- our bills don't go down. They make money off running our land. the omen and time would be better spent EDUCATING the public about USING LESS Electricity - instead of upping consumption and production so companies can make profits. And even IF our bills went down NO amount of money is worth ruining the land, soil and environment! The windmills at Kahuku leaked toxic crap-- and the ones above Waimea canyon are an insult to Hawaiian culture and that valley. ENOUGH ALREADY.
Rey Antonio	Waialua, HI	2016-09-02	WE DON'T NEED WIND FARMS!!! WE HAVE ENDANGERED WILDLIFE IN KAENA & WINDFARMS DOESN'T HELP ANYWAYS!!!
Sarah Teske	Haleiwa, HI	2016-09-02	Please don't take away this natural habitat or destroy the beauty of the North Shore with these windmills!
Janine Bolan	Mililani, HI	2016-09-02	Keep the country , country. We don't need big ugly wind mills, why! keep it low and hidden. don't block the beauty of Hawaii

Name	Location	Date	Comment
Wendy Riley	Peoria, AZ	2016-09-03	This can't happen
Liana Cortez-Kekawa	Waianae, HI	2016-09-04	We do not know the environmental impact it will make ... and we on the Westside tired of being the ones to have to deal with BS already. Sorry No.
Kelly Chadderdon	Paradise Valley, AZ	2016-09-05	My parents live there. I work in the solar industry, First Solar, and know for a fact there is a better and more eye appealing way to handle the electrical demands.

Signatures

Name	Location	Date
Chris Bruns	Haleiwa, HI, United States	2016-08-14
Jennie Sauter	Haleiwa, HI, United States	2016-08-14
Dawn Bruns	Haleiwa, HI, United States	2016-08-14
Celene Roberts	Waialua, HI, United States	2016-08-14
Star Harthern	Haleiwa, HI, United States	2016-08-14
Nicole Nestel	Haleiwa HI, HI, United States	2016-08-14
Cynthia Covell	Waialua, HI, United States	2016-08-14
makai mcnamara	Haleiwa, HI, United States	2016-08-14
Jim Covell	Waialua, HI, United States	2016-08-14
Bboy Schlea	Lahaina, HI, United States	2016-08-14
Cher Pendarvis	San Diego, CA, United States	2016-08-14
Jamie Sabatini	Waialua, HI, United States	2016-08-14
John Moses	Hauula, HI, United States	2016-08-14
Christophe Frat	Waialua, HI, United States	2016-08-14
Cole Doeh	Haleiwa, HI, United States	2016-08-14
Lara Bollinger	Haleiwa, HI, United States	2016-08-14
Vero M.	Waialua, HI, United States	2016-08-14
Nani Hicks	Waialua, HI, United States	2016-08-14
Bill Yeo	Soquel, CA, United States	2016-08-15
Katie Murphy	Haleiwa, HI, United States	2016-08-15
Laurie Puglia	Waialua, HI, United States	2016-08-18
Kristy Gabriel	Waialua, HI, United States	2016-08-18
Rexann Dubiel	Haleiwa, HI, United States	2016-08-18
Ayesha Liquorish	Haleiwa, HI, United States	2016-08-18
Melanie sens	Berlin, MD, United States	2016-08-18
Vera Williams	Kahuku, HI, United States	2016-08-18
GREG HUNGERFORD	Waialua, HI, United States	2016-08-18
M D	Haleiwa, HI, United States	2016-08-18
Cori Webb	Haleiwa, HI, United States	2016-08-18
thomas mullett	Waipahu, HI, United States	2016-08-18

Name	Location	Date
Robert Hayes	Haleiwa, HI, United States	2016-08-18
Frances Parker	Kauhku, HI, United States	2016-08-19
Pamela Boyar	Kailua, HI, United States	2016-08-19
Diane Anderson	Haleiwa, HI, United States	2016-08-19
Susan Williams	Waialua, HI, United States	2016-08-19
Ed Shanahan	Haleiwa, HI, United States	2016-08-19
Chris Parker	Haleiwa, HI, United States	2016-08-19
Janice Henkel	Hauula, HI, United States	2016-08-19
Karen Stokely	Haleiwa, HI, United States	2016-08-19
elizabeth merrill	Haleiwa, HI, United States	2016-08-19
Gitte Gonzalez	Haleiwa, HI, United States	2016-08-20
Jasmine Moriaz-Amakos	Haleiwa, HI, United States	2016-08-21
Erika Dittmar	Haleiwa, HI, United States	2016-08-27
Donna Tully	Kaneohe, HI, United States	2016-08-27
Amy Hart	Waialua, HI, United States	2016-08-27
Lisa Siradas	Chicago, IL, United States	2016-08-27
Jade Sun	honolulu, HI, United States	2016-08-27
Jerry Miller	Haleiwa, HI, United States	2016-08-27
Caroline Cummings	Kahuku, HI, United States	2016-08-27
Melissa Rosen	Honolulu, HI, United States	2016-08-27
Love Hodel	Haleiwa, HI, United States	2016-08-27
Christopher Formulak	Waialua, HI, United States	2016-08-27
Robert Caton	Waialua, HI, United States	2016-08-28
gerald douglas	north hollywood, CA, United States	2016-08-28
Chance King	Haleiwa, HI, United States	2016-08-28
nick loewenstine	Kogarah Bay, HI, Australia	2016-08-28
Claudia Ferrari	Haleiwa, HI, United States	2016-08-28
Carl DeForest	Haleiwa, HI, United States	2016-08-28
samantha wurtz	Wahiawa, HI, United States	2016-08-28
John Sullivan	Holland, MN, United States	2016-08-28
Nathan Amatore	Haleiwa, HI, United States	2016-08-28
teresa berthiaume	Haleiwa, HI, United States	2016-08-28

Name	Location	Date
Amy Marquardt	Waialua, HI, United States	2016-08-28
eliane zurowski	itanhaem, HI, Brazil	2016-08-28
Denice Kuehu	Waialua, HI, United States	2016-08-28
Benjamin Moe	Mililani, HI, United States	2016-08-28
Sara Perry	Waianae, HI, United States	2016-08-28
Lara Zierle	Portland, OR, United States	2016-08-28
Wes Linn	Oakdale, CA, United States	2016-08-28
Sean Quinlan	Haleiwa, HI, United States	2016-08-28
Olivia Harkins	Waialua, HI, United States	2016-08-28
Jack Bennett	Honolulu, HI, United States	2016-08-28
Jerold Ragusante	Waialua, HI, United States	2016-08-28
Kent Fonoimoana	Kahuku, HI, United States	2016-08-28
kevala jokiel	Honolulu, HI, United States	2016-08-28
Melanie Halsey	Ewa Beach, HI, United States	2016-08-28
Elizabeth Rago	Laie, HI, United States	2016-08-28
Carolyn Sandison	Haleiwa, HI, United States	2016-08-28
mike mcneace	waiialua, HI, United States	2016-08-28
Alana Barrera	Haleiwa, HI, United States	2016-08-28
Finn Armstrong	Haleiwa, HI, United States	2016-08-28
Max Bozeman	Waialua, HI, United States	2016-08-28
Leif Howes	Haleiwa, HI, United States	2016-08-28
Imiko Maki	Waipahu, HI, United States	2016-08-28
Riley Silva	Forest Grove, OR, United States	2016-08-28
Sunshine Williams	Waialua, HI, United States	2016-08-28
Jerry Burdine	Waialua, HI, United States	2016-08-28
Nathan Heid	Haleiwa, HI, United States	2016-08-28
Rachel Gray	Honolulu, HI, United States	2016-08-28
Alex Durant	Waialua, HI, United States	2016-08-28
sascha Schindler	Waialua, HI, United States	2016-08-28
Charity Kahunahana	Waialua, HI, United States	2016-08-28
Caitlin Albert	Haleiwa, HI, United States	2016-08-28
riordan pringle	Haleiwa, HI, United States	2016-08-28

Name	Location	Date
Joy Silver	Haleiwa, HI, United States	2016-08-28
Claudette Forrest	West Palm Beach, FL, United States	2016-08-28
HELEN MOHN	Augsburg, Germany	2016-08-28
Jacob Shannon	Waialua, HI, United States	2016-08-28
ashley robello	santa cruz, CA, United States	2016-08-28
Jessica McNeace	Waialua, HI, United States	2016-08-28
Steven Kean	Hāna, HI, United States	2016-08-28
Frances Hodge	Waialua, HI, United States	2016-08-28
Pia Ruisi-Besares	Honolulu, HI, United States	2016-08-28
Nicholas Bowman	Wahiawa, HI, United States	2016-08-28
philip liborio	Las Vegas, NV, United States	2016-08-28
Natalie Tiralongo	Waialua, HI, United States	2016-08-28
Gopal Butler	Haleiwa, HI, United States	2016-08-28
Thomas Kerian	Honolulu, HI, United States	2016-08-28
Allysa Lapine	Honolulu, HI, United States	2016-08-28
Keone Amundson	Haleiwa, HI, United States	2016-08-28
Stan Espinosa	Waialua, HI, United States	2016-08-28
Tammy Tualau	Haleiwa, HI, United States	2016-08-28
Carol Philips	Haleiwa, HI, United States	2016-08-28
Laxmi Diaz	Waialua, HI, United States	2016-08-28
Karen Fitzgerald	Kahuku, HI, United States	2016-08-28
katie hartzog	westville, FL, United States	2016-08-28
Ximena Wunderlich	Waialua, HI, United States	2016-08-28
Lani Minihan	Hana, HI, United States	2016-08-28
Lane Davey	Kahuku, HI, United States	2016-08-28
Noel Mackisoc	Kailua, HI, United States	2016-08-28
Gerold Wunderlich	Waialua, HI, United States	2016-08-28
tyler chock	Kaneohe, HI, United States	2016-08-28
Joe Wilson	Haleiwa, HI, United States	2016-08-28
Carl Lawson	Colorado Springs, CO, United States	2016-08-28
Amy Wiech	Waialua, HI, United States	2016-08-28
P Wahilani	Waianae, HI, United States	2016-08-28

Name	Location	Date
Burt Sutherland	Haleiwa, HI, United States	2016-08-28
Angela Woolliams	Honolulu, HI, United States	2016-08-28
Benjamin Puccetti	Honolulu, HI, United States	2016-08-28
Luwella Leonardi	Waianae, Hawaii, HI, United States	2016-08-28
Dana Ishii	Haleiwa, HI, United States	2016-08-28
Dillon Rowley	Waialua, HI, United States	2016-08-28
Mariah Sanborn	Waialua, HI, United States	2016-08-28
Suzanne Swartz	Haleiwa, HI, United States	2016-08-28
Lance Walters	Newcastle, CA, United States	2016-08-28
Angelica pelekai	Haleiwa, HI, United States	2016-08-28
Zandra Merseburgh	Wahiawa, HI, United States	2016-08-29
Rubyann D. Gaglio	El Paso, TX, United States	2016-08-29
Janice Barit	Waialua, HI, United States	2016-08-29
Michelle Gulden	Honolulu, HI, United States	2016-08-29
Chanelle Naki	Wahiawa, HI, United States	2016-08-29
Melissa Erickson	Waialua, HI, United States	2016-08-29
Daisy kaczmarek	Buffalo, NY, United States	2016-08-29
leila alli	Haleiwa, HI, United States	2016-08-29
Jonah Keoholapu	Wahiawā, HI, United States	2016-08-29
Charlotte Kamauoha	Kahuku, HI, United States	2016-08-29
Felita Reed	Kahuku, HI, United States	2016-08-29
ana lucia benchimol	Haleiwa, HI, United States	2016-08-29
Maria Louise	Middletown, CT, United States	2016-08-29
Jerry Gebhard	Honolulu, HI, United States	2016-08-29
Tēvita O. Ka'ili	Kahuku, HI, United States	2016-08-29
Gerald Formulak	Chino, CA, United States	2016-08-29
Angela Burley	Waialua, HI, United States	2016-08-29
Holly Harding	Haleiwa, HI, United States	2016-08-29
Holly Johnson	Haleiwa, HI, United States	2016-08-29
taylor swanson	waiialua, HI, United States	2016-08-29
Mark Malohifo'ou	Salt Lake City, UT, United States	2016-08-29
Olin Thomson	Waialua, HI, United States	2016-08-29

Name	Location	Date
Danielle Erickson	Mililani, HI, United States	2016-08-29
Shelley Boling	Waialua, HI, United States	2016-08-29
Aleui Lyman	Waialua, HI, United States	2016-08-29
Olympia Frink	Waialua, HI, United States	2016-08-29
Colleen Carswell	Waialua, HI, United States	2016-08-29
Stephen Cook	Waialua, HI, United States	2016-08-29
Deanna Sabido	Haleiwa, HI, United States	2016-08-29
Krystalee Krey	Haleiwa, HI, United States	2016-08-29
Kayne Kuewa	Redmond, WA, United States	2016-08-29
Matthew Eder	West Covina, CA, United States	2016-08-29
Brandi Burdine	Waialua, HI, United States	2016-08-29
Jackie Burtch	Temple, TX, United States	2016-08-29
Felicita " Ku'uipo" Garrido	Waialua, HI, United States	2016-08-29
Jasmine Owens	Wahiawa, HI, United States	2016-08-29
Melissa Meek	Waialua, HI, United States	2016-08-29
Alison Ross	Haleiwa, HI, United States	2016-08-29
Wesley Liquorish	Haleiwa, HI, United States	2016-08-29
kristie Doss	Aiea, HI, United States	2016-08-29
Shannon Nery	Cypress, TX, United States	2016-08-29
Luana Nery	Vancouver, WA, United States	2016-08-29
Kathryn O'Donnell	Santa Monica, CA, United States	2016-08-29
Osta Lange	Waimea, HI, United States	2016-08-29
otis schaper	Wahiawa, HI, United States	2016-08-29
Lia Nery	Vancouver, WA, United States	2016-08-29
Eleni Galiza-Foster	Haleiwa, HI, United States	2016-08-29
Paula Maloney	Kapolei, HI, United States	2016-08-29
Joli Johnston	Corvallis, OR, United States	2016-08-29
Sara LeCheminant	Windsor, CA, United States	2016-08-29
earl stone jr	Honolulu, HI, United States	2016-08-29
Jennifer Damm	Haleiwa, HI, United States	2016-08-29
Doug Groenveld	Haleiwa, HI, United States	2016-08-29
Beverly Paracuelles	Wahiawa, HI, United States	2016-08-29

Name	Location	Date
Margaret Keehn	Beaverton, OR, United States	2016-08-29
Roberto Lopes	Haleiwa, HI, United States	2016-08-29
Harold Losano	Wai‘anae, HI, United States	2016-08-29
Diane O'Neal	Richmond, VA, United States	2016-08-29
Daniel Sabido	Haleiwa, HI, United States	2016-08-29
Joshua Holley	Aiea, HI, United States	2016-08-29
Linda OBrien	Wahiawa, HI, United States	2016-08-29
Linda Mclver-Lorne	Haleiwa, HI, United States	2016-08-29
Racquel Achiu	Waialua, HI, United States	2016-08-29
Hannah Smith	Haleiwa, HI, United States	2016-08-29
Kristi Dabin	Waialua, HI, United States	2016-08-29
Natasha Koa	Wai‘anae, HI, United States	2016-08-29
Megan Williams	Haleiwa, HI, United States	2016-08-29
Eric Hill	Carrboro, NC, United States	2016-08-29
Joell Andrade	Waialua, HI, United States	2016-08-29
Karilynn Kuewa	Haleiwa, HI, United States	2016-08-30
Gayann Pang	Waialua, HI, United States	2016-08-30
Linda Clark	Kula, HI, United States	2016-08-30
Raelyne KaMaKa	Waianaes, HI, United States	2016-08-30
Myrna Ramiscal	Sacramento, CA, United States	2016-08-30
Blossom Kawahakui	Waialua, HI, United States	2016-08-30
jennifer freitas	Haleiwa, HI, United States	2016-08-30
Dallas Butler	Haleiwa, HI, United States	2016-08-30
Keala Apuakehau-Smith	Waialua, HI, United States	2016-08-30
Jennifer Macagnone	Honolulu, HI, United States	2016-08-30
Davilyn Sato	Mililani, HI, United States	2016-08-30
Jason Lee	Wahiawa, HI, United States	2016-08-30
Robin Jandle	Waialua, HI, United States	2016-08-30
Michale Martin	Haleiwa, HI, United States	2016-08-30
Lori McKeown	Mililani, HI, United States	2016-08-30
Cathy Shanley	Haleiwa, HI, United States	2016-08-30
Joni Shiraishi	Waialua, HI, United States	2016-08-30

Name	Location	Date
grace morgan	Culver City, CA, United States	2016-08-30
Kimberly Smith	Wahiawa, HI, United States	2016-08-30
Kelly Tsutsui	Hana, HI, United States	2016-08-30
Alex Lebon	Waialua, HI, United States	2016-08-30
Kristin Qureshi	Haleiwa, HI, United States	2016-08-30
James Merseburgh	Wahiawa, HI, United States	2016-08-30
Amber Rollison	Honolulu, HI, United States	2016-08-30
Monta Koch	Haleiwa, HI, United States	2016-08-30
Tracy Walker	Haleiwa, HI, United States	2016-08-30
Brian Bowman	Haleiwa, HI, United States	2016-08-30
Charlie Walker	Haleiwa, HI, United States	2016-08-30
Norma Balidoy	Waialua, HI, United States	2016-08-30
Pattie Wright	Haleiwa, HI, United States	2016-08-30
Julian Lazar	Waialua, HI, United States	2016-08-30
Samantha Canon	Waialua, HI, United States	2016-08-30
Matt Tomkins	Haleiwa, HI, United States	2016-08-30
Emily Turner	Haleiwa, HI, United States	2016-08-30
Kamomi Laimana	Kaneohe, HI, United States	2016-08-30
Iokepa Suyat	Carrboro, NC, United States	2016-08-30
james mincher	Wrightsville Beach, NC, United States	2016-08-30
Gigliola Belotti	Italy	2016-08-30
Sam Steeles	Louisville, KY, United States	2016-08-30
Traci Rambo	Nemo, SD, United States	2016-08-30
Megan Bark	Palos Verdes Estates, CA, United States	2016-08-30
Wendy Barnfield	Haleiwa, HI, United States	2016-08-30
Sheldon Plentovich	Haleiwa, HI, United States	2016-08-30
Philip Pendleton	Honolulu, HI, United States	2016-08-30
Tim Warren	Mililani, HI, United States	2016-08-30
Shauna Parsons	Charleston, SC, United States	2016-08-30
Darshielle Manners	Mililani, HI, United States	2016-08-30
Elisa Felgen	Las Vegas, NV, United States	2016-08-30
Ken and Stephanie Lasbury	Kahuku, HI, United States	2016-08-30

Name	Location	Date
Noel Marchan	Mililani, HI, United States	2016-08-30
Barbara Santanna	Waialua, HI, United States	2016-08-30
Nadia Le Bon	Berkeley, CA, United States	2016-08-30
Angela Barnfield	Haleiwa, HI, United States	2016-08-30
Steven Brown	Haleiwa, HI, United States	2016-08-30
Sean Tiwanak	Kapolei, HI, United States	2016-08-30
Sean Moody	Waialua, HI, United States	2016-08-30
Randall Scott	Kahuku, HI, United States	2016-08-30
Pumehana Iani	Waipahu, HI, United States	2016-08-30
Marie Louise Hicks	Honolulu, HI, United States	2016-08-30
Natasha Gilbert	Kahuku, HI, United States	2016-08-30
pierre pang	honolulu, HI, United States	2016-08-30
Lisa McDaniel	los Angeles, CA, United States	2016-08-30
Rachel LaRosa	New York, NY, United States	2016-08-30
Will Scott	Kailua, HI, United States	2016-08-31
Zoe K	Mililani, HI, United States	2016-08-31
Diane Quilinderino	Waialua, HI, United States	2016-08-31
Joelle Strain	Cloverdale, CA, United States	2016-08-31
David Starr	Honolulu, HI, United States	2016-08-31
Derrick Manners	Waialua, HI, United States	2016-08-31
Lynette Gay	Ridgefield, CT, United States	2016-08-31
Jenny Angulo	Huntington Beach, CA, United States	2016-08-31
Francesca Battaglioli	Waialua, HI, United States	2016-08-31
martha Stanwood	Hauula, HI, United States	2016-08-31
Kiana Betancourt	Waialua, HI, United States	2016-08-31
Pi'ilani Lua	Hana, HI, United States	2016-08-31
Joanne Liotta	San Ramon, CA, United States	2016-08-31
Dora Doroha	Waialua, HI, United States	2016-08-31
Carrie Tiffe	Haleiwa, HI, United States	2016-08-31
Angelique Vanisi - Rangihuna	Australia	2016-08-31
Jason Fernandez	Mililani, HI, United States	2016-08-31
Deborah Andrade-Bajo	Haleiwa, HI, United States	2016-08-31

Name	Location	Date
Lara Sennett	Wahiawa, HI, United States	2016-08-31
Tami Nakamura	Haleiwa, HI, United States	2016-08-31
Heidi Apau	Waialua, HI, United States	2016-09-01
Mark Yokotake	Mililani, HI, United States	2016-09-01
Donn Peiler	Waipahu, HI, United States	2016-09-01
Mele Coloma	Waialua, HI, United States	2016-09-01
Ryan Suda	Mililani, HI, United States	2016-09-01
Shalei Meneses	Waialua, HI, United States	2016-09-01
Karese Poulos	Mililani, HI, United States	2016-09-01
Micah Hatchie	Haleiwa, HI, United States	2016-09-01
Sheryl Sanchez	Mililani, HI, United States	2016-09-01
wayne mizusawa	Mililani, HI, United States	2016-09-01
Mariah S White	Honolulu, HI, United States	2016-09-01
Michelle Knoetgen	Haleiwa, HI, United States	2016-09-01
Lynette Landon	Haleiwa, HI, United States	2016-09-02
Rey Antonio	Waialua, HI, United States	2016-09-02
Shori Patten	Haleiwa, HI, United States	2016-09-02
Sarah Teske	Haleiwa, HI, United States	2016-09-02
Tony Agsalda	Waialua, HI, United States	2016-09-02
Janine Bolan	Mililani, HI, United States	2016-09-02
dawn tiffe	Haleiwa, HI, United States	2016-09-02
Amanda Hallam	Glendale, AZ, United States	2016-09-03
Yvette Kama	Haleiwa, HI, United States	2016-09-04
Darrin Whittaker	Waialua, HI, United States	2016-09-04
Liana Cortez-Kekawa	Waianae, HI, United States	2016-09-04
Mariah Metzger	Haleiwa, HI, United States	2016-09-04
Kelly Chadderdon	Phoenix, AZ, United States	2016-09-05
Joan Llovet López	Sant Vicent del Raspeig, Spain	2016-09-05

Over 500 People Expressed Opposition to Wind Farm Development Within the “Oahu North” Portion of the “Oahu Call Area” via the Facebook North Shore Community Hub and posts shared to individual facebook pages (by neighborhood): 359 (members of the North Shore community), 107 (location not identified), 37 (Surfers with San Diego connections)

359 Members of the North Shore Community Opposed This Wind Farm Via Facebook North Shore Community Hub:

Melissa Sunny Erickson, Haleiwa, HI
Coel Doeh, Sunset Beach, HI
Brenda Lerch, North Shore, HI
Antya Miller, Haleiwa, HI
Ed Shanahan, North Shore, HI
Melissa Valerio Meek, Haleiwa, HI
Julis Sterling Weldon, Sunset Beach, HI
Sean Quinlan, Haleiwa, HI
Tim Shanley, Sunset Beach, HI
Mick O’Brien, Sunset Beach, HI
Patti Anstett and Jeff Anstett, Sunset Beach, HI
Lyndy Gasior, Sunset Beach, HI
H Gordon Arrendale III “Are you kidding me!?”
Josh Lindner “This island is going to sink.”
Linda Reuter “Just say no”
Ronald Anderson “That would really SUCK!!”

Ben Fassbaugh “Stupid. Put it in the middle of the ocean somewhere where no one can see it”

Rand R. Olsen “OMG. This is madness! Can’t happen!”

Richard Vattuone “I remember driving down a dirt road in 2009, North Shore, Oahu. I stopped my car, got out, and what I saw was gasly unreal....40ft sets coming in like clockwork out at Ka’ena Point. Looking at the jagged rocks, the bend around the point leading to Makaha....thinking....this is a supernatural force of nature. What a shame it would be to see this remarkable untouched land get stained by a bunch of power hungry opportunists.”

Brett Bennett “They’re testing a floating wind farm way of the coast of Japan, no need to put this ugly shit close to any land mass”

Jimbo Yarborough, Sunset Beach, HI
Blake McElheny, Pupukea, HI
Kelly Jenking Jones
Abby Parker, Haleiwa, HI
Maka O Kalani Minihan, Haleiwa, HI
Iwalani Siu Uin Sanders

Donna May PeBenito, Haleiwa, HI
Frances Hodge
Angelika Dorothe Veach
Laura Doyel, Haleiwa, HI
Alan Villagas
Zenna Galagaran, Haleiwa, HI
Will Kaholi Roldan
Sheen Lopes
Pauline Sato
Kamaka‘āina Seipp
Savannah Close-Ige
Ed Shanahan
Josh Reese
Kalua Ellis
Kekoa Pasion Almeida
Carol Philips, Haleiwa, HI
Claudia Ferrari
Kanoelani Carvalho-Ackerly
Evelyn Holm Barry
Jay Felix
Max Bozeman
Nathan Heid
Cristin Alexandra Garroway
Alexandra Davletshina
Joycelyn Gutierrez, Sunset Beach
Kalani Nakoa
Daniela Andrade
Jason Biligad
April Woolley
Ellie Williams
Mariah Melanie Metzger
Darrell Ayonon
Brady Phillips
Jennifer Homcy
Kevin Chadick
Stephanie Artis, Haleiwa, HI
Natasha Naki
Kaimana Merrill
Sean McCaul
Leif Howes
Daniel Lowery
Ara Bian Knight
Eric Basta
Greg Suenaka
Eric Steinke
Ka‘imi-Julie Ke-a

Douglas Correia
John Canner
Edward Okami
Jennifer Kamalani-vida
Krystalee Krey
Kaala Kawahakui
Kanani Wilkins
Kahila Caracol
Shelley Muneoka
Acorda Gerika
Rachel Baclaan
Kiana Kawohikukapulani Johnasen
Brenda Rogers
Michael Jutt
Daniel Leigh
Tonya Reid, Sunset Beach, HI
Breanna Tidball
Joshua Ferreira
Deb Donohue
Nick Keitzer
Jarren Kauwalu
Micah T. Arnold, Haleiwa, HI
Brendon Wallis
Abraham Rodrigues
Jesse Molton
Matthew Gambone
Brian Plouffe
Jay Vilander
Alex Ortega
Charity Kahunahana
Kaori Muto
Joelle Rattanaphosy
Jeremy Jonathan
Branden George Galapia
North Shore Surf Film Festival
Jonathan McOsker
Kel Nery
Gina Hungerford “Opposed”
Kiley Iona
Vera Stone
David Hal Sanchez
Lokahi Herrod Jr.
Chris‘Ron Haupu
Mickey Friedman
Katz Edayan
Jamie Yagi

Donna Moore, Haleiwa, HI
Matt Evans
Honap‘a Todd White
Melanie Sens
Christina Noel Hilfiker
Camille Kirk, Sunset Beach
Momo Sakuma
Melanie Paulo Nistal
Bonnie Brady
Kayen K Kuewa
Andy Collins
Jason Bison Friedmann
Jodi Liu
Dawn Moore Johannesen
Josh Troyer
Nicole Nestel
Melissa Valerio Meek
Bud Kaku
Shantee Kalulu Morrissette
James Frisbie, Haleiwa, HI
Kimberly Leonard Walsh, Pupukea, HI
Patrick Mullins
James Smith “No wind farm. Bad idea.”
Kawai Wong
Austin Wakinekona
Klee Kuewa
Pamela Brainin Boyar
Cindy Jughes Ingleton
Leigh Helms Anstey
Jeff Fetterly
Wayne Warrington
Steve Brown
John Medrano
Mike Mcneace, Waialua, HI
Litasha Johnson
Kiyoko Fiser
Sash Kau‘I Fitzimmons
Shawnee Lyman
Gopal Butler
Joli Johnston
Colleen Chapman
Arfie Theodocious
Kelly Lucero
Dori Carmichael
Vicki Wells
Kanani Oury

Tina Grace
Donna Marie
Cristina Marques Cunha
Kelly Ramstead
Scott Brown
Will Schoettle
Amy Humble Hart
Kati-Kealohanuikēanu Alapa-Hirayama Alo Felix
Carol Pierce
Pops Pawlowski, Haleiwa, HI
Steven Kean
Lisa McDaniel
Alejandro Rafael Nava Ortuno, Haleiwa, HI
Luann Casey
Lokahi Herrod
Raul Buenrostro
Helene Wagner
Joy Dawn
Bellodgia Yamamoto
Sharyn Bemiller
Lori Henning
Kristi Gabriel
Johnny Garcia
Connie Durant
Megan Dalton
RandyNkehau Poopaa-Hoopai
Norman Allen
Cindy Covell
Taylor Smith
Matthen Savage, Sunset Beach
Ikaika Auwae
Star Harthern Jacobsen
Danielle Erickson
Hannah Elizabeth Smith
Victoria Garden
Jess Nāpua Casson “I just sent you a message. Mahalo for this post”
Sally Greene
Anuheā Lindo
Jessica Dos Santos
Kelly Grant Tsutsui, Waimea/Sunset Beach, HI
Sharon Renee Sanchez, Haleiwa, HI
Todd Ehle
Steven Dempsey
Robert Mcmillen
Tae Basta
Noel Mackisoc

Bebby Fowler-Cox
Laurie Hunt Puglia, Haleiwa, HI “NO OFFSHORE WIND FARMS!”
Beth DeLong
Jade Sun
Sonya Salazar
Pati DeSoto
Leslie Witten
Summer Mocha
Matt Maletta
Loyd Ray Carroll
Kori Ann Harvey
Christina Noel Hilfiker
Steven Kalulu Jr.
Jamie Yagi: Just stop killing our island.

Stacy Kuulei-Kahoonei Lopez: That’s a point for preserving endangered Hawaiian birds.
Kainalu Suan – Can’t Happen. Com On Jack.

Mai Tani Waye – Omg no... the reefs and waters suffering enough already... seems water would be super hot around these and fortet that they are a horrible eye sore.
Enough is enough already.

Zane Dillon
Jon Pyzel, Sunset Beach, HI “This seems king of crazy”

Damian Antioco “Windmills are eye sores and they don’t benefit the average individual.
That would ruin the northsores beautiful sunset view”

Phil Perry, Sunset Beach, HI: This is a very rough part of the ocean. Why here? Build solar instead

Young Shin “No No never!”
Susan Petty
Billy Barker
Chance Boyer
Gary Coccaro
Justin Cote
Javier Rodriguez
Kaimi Pekelo “Enough with the wind farms!”
Kai Doorley
Jack Frisbee
Dana Wolfe, Sunset Beach, HI

Elgin Onaga “This is getting crazy, you see these windmills pop up... they say only a few... but every time I paddle out to jacos, lanis or Himalayas I see more windmills till now there is like 50 windmills, where is the electricity, now they want more, pretty soon our island will fly away with all the propellers...”

Robert Nicoll

Leiana Helms “Please no. There are too many as it is.” “I don’t think they should put anything in the ocean. There are enough poisons screwing up our ecosystem. I believe there has been some fuel that leaked into the ocean recently and is now killing our sacred treasures beneath the sea... No pono for the aina. Humans need to respect what surrounds us more often or we are weakening the walls of survival and that will cause a domino effect in our damaged

Alan Sitt, Sunset Beach, HI

David Jr Kikuchi “Dis no can pa'i sandwich these fakas!!! #home #sacredland #leaveitalone”

North Shore Outdoor Circle

Kerry Germain, Sunset Beach, HI

Anna Ramiscal

Jannet Aceret DuFour

Thomas Nistal

Reginald Remingio

Lawrence and Jess Luning Sanchez

Shane Hurst

Sheldon Haupu

Sharon Renee Sanchez

Ronnie Noble

James Merseburgh

Gerry Richards “Why not put solar panels on more rooftops?”

Thomas T Shirai Jr

Rex Dubiel, Sunset Beach, Hawaii “Solar is better!” “I left a message at the DC office to call me. We’ll see.” “We said “No”, last year. We mean it. We do not want windmills off Kaena Point ever! Go somewhere else with your greed and shortsighted project.” “We need solar! Windmills will begin rusting and corroding immediately. The environment will be ruined.”

Bill Yeo, Sunset Beach, HI “I am a Hawai’i resident from 1977 to the present and I agree with all the facts presented – keep Hawaiian lands in Hawaiian’s hands!! Aloha Nui to all Hawaiians!!!”

Mimi Leeds “So much... sooooo much more energy produced from solar. Super cheap, too, for a small 2kW system. It is all you need and it is expandable. Plug your car in and good to go. Off-grid rules!”

Keith Grisman “There are so many more proven and better technologies than these and even so more places for these to go that on a pristine island point like Kaena”

Alvin Farmer

Riordan Pringle “Current whale sanctuary border ends at Haleiwa – we need to have this extended to include Kaena Point”

Richard Ciesco
Ryan de Seixas
Tiago Prospero
Joli Johnston
Ginai Hill “Argh!!!”
Celiamarie Moore, Mokuleia, HI
Marcus Griego, Mokuleia Rock Climber, HI
Keely Ramstead
Normal Allen
Moana Bjur
Kenneth Capes “I really hope they don’t do this!”
Kathleen Ells “No no no”
Laine Close, Mokuleia, HI
James Elder, Sunset Beach, HI “Those things suck anyway”

Angela Huntemer “I wasn’t able to access the website to submit comments listed on the sign at Thursday’s meeting. I type in the BOEM number and it says there is nothing there.”

James Frisbie “There are other options.”

Paul Amerson “It’s all about liquid fluoride thorium reactors. Check it out”

Cindy Covell, Waialua, HI “”It appears we North Shore residents are NOT being heard. How many times do we have to say NO to these monstrosities.....bad for the fish, bad for the Albatross, more money to be made in increasing solar vice building these ugly things off our beautiful coast.....”

Geoff Biehl “I’m all for wind energy too but putting huge towers off of Kaena Point is crazy. In addition, how about requiring conservation? Or using small wind turbines elsewhere? I wouldn’t even object to big turbines in [other] locations, depending on the site. But not off Kaena Point! That would be like allowing oil derricks in Balboa Park.”

Greg Hunderford, Waialua, HI “We support clean energy, but not at this great cost to these things we hold sacred. Please hear us this time – no means no.

Ayesha Liquorish, Haleiwa, HI “No means no”
Cole Doeh, Haleiwa, HI “This is a terrible location for a wind farm!”
Makai McNamara, Haleiwa, HI “NO NO NO NO”
Elizabeth Merrill, Haleiwa, HI “NO means NOOO!!!”

Tim McCleery, Haleiwa, HI “Since when does what the people want matter? Read Edward Abbey's books, start with The Monkey Wrench Gang. I'm not saying give up, but just words don't do the trick. Keep on top of these plans like

hawks. IMHO, what is being proposed may not even be feasible. Not my field completely but have been electrician for over 30 years. Stick together!”

Richard Hoapili “The last board meeting BOEM couldn't answer any questions that were asked and it sounds like they still have no answers for us. The biggest question is "WHO ARE THEY GOING TO LEASE THE OCEAN FROM THE UNITED STATES OF AMERICA OF THE KINGDOM OFF HAWAII? AND IF BUILT WHO WILL BENEFIT FROM THESE UGLY THINGS (WINDMILLS) RUINING OUR BEAUTIFUL OCEAN ?” “The people of BOEM should put these windmills in their own back yard where ever they come from take their brite ideas back to there own homeland dont come here and ruin my homeland”

Christopher Taloa They want to put these things in the water but the ones on the land don't work? Fix what you already put up. Wasting money as usual. Just like the rail.

Shannon Nery “ This will Totally not only mess up the nice scenery but mess up the nice waters of the Northshore, these people can say all they want that it won't but that's BS. I am originally from HALEIWA Born and Raised and now living in Houston Texas working offshore in the Gulf of Mexico, every time I go to work I pass these ugly looking ocean windfarms in Louisiana, and no counting how many times these things caught on fire or even had environmental impacts. So yeah there you have folks it will damage our environment and have an impact on ocean life... Photo:.



Carlos Mozo: so what are the steps to make sure this doesn't happen other than say it on facebook. Where do we go from here?

Cherie Patterson “I'm with Christopher. Fix the ones on the land first. Do They realize that tons of birds hang out in that area, and that's where the whales play. What is wrong with people? The Ocean will claim anything like that quickly, then they will spend tons of money cleaning up their mess. That's try to think ahead just a little.”

Jaqueline Favreau-Martindale: This is a sanctuary for the albatross. Those windmills kill so many birds. But Kaena point needs to remain a safe haven for wildlife that depend on this area for breeding and nesting. ENDANGERED SPECIES!!! Ok great humpback whales and the albatross. Done deal. Now leave Kaena point alone.

Laurie Puglia, Kahuku, HI “The wind turbines do NOT belong off the North Shore of Oahu! This is an endangered bird sanctuary and whale migration area. Swell heights can reach dangerous levels that can compromise these structures and could have devastating oil leaks. Our ocean wildlife is at stake. NO NO NO!!! We should use solar farms. It takes more carbon emissions to make wind turbines than they will ever even generate. Wind turbines are a SCAM!”

Celene Roberts, Waialua, HI “Because they already wrecked Pupukea/Waimea.”

Dawn Bruns, Haleiwa, HI “The ocean waters off Ka’ena Point are not the place for industrial wind farm development. Please remove this site from further wind farm consideration.”

300

Julie Patacchia
Choon James
Bonnie Howland
Steve Montgomery
Ana Lucia Benchimol
Charlie De Morais Teixeira
Chantelle Naki
John Chuck Falter
Stephanie Ann Garcia
Blake Samuel Kniffing
Alyssa Gordon
Philip Flop Liborio
Frances Hodge
Afton Daffodil
Marie Neidermeier
Cady Albert
Raye Teyssier
Alex Durant
Kat Bollock Aikau
Leif Howes
Max Boxeman
Star Harthern Jacobsen
Jewel Csiszar
Carolyn Sandison
Kevala Rama
Deborah Bradley
Gitte Hansen Gonzalez
Colby Brady
Jing Dingdingboy
Tiffany Schnittger

Kelly Ramstead
 Teresa Vigneri-Berthiaume
 Jenny Dyer
 Tony Kawaguchi
 Glennel Warren
 Shaun Coon
 Claudia Ferrari
 Drake Hickman
 Bill Howes
 Nick Loewenstine
 Robert Caton
 Israel Rearick
 Pati DeSoto
 Karen Stokley
 Christopher Formulak
 Summer Mocha
 Kelly Jenkins Jones
 Love Hodel
 Maka O Kalani Minihan
 Colleen O'Connor Collins
 Paul Fahlbeck
 Amy Hubble Hart
 Donna Raquel Tully
 Necce Kuehu
 Ashley Robello
 Riordan Pringle
 Nathan Amatore
 Doug Falter
 Chance King
 Jim Covell “There is no one on the North Shore who I know of that wants this to happen!
 NO!!! ,“I am opposed to the windmills...”

Tom Pohaku Stone: It'll be the continue desecration of spiritual and physical representation of our sacred places. The plantations/missionaries come in and completely disregard our traditional physical architecture that culturally represents our connection to our history, the land/sea, and gods. They begin the wanton destruction of our physical and cultural space. Following suit would be the US military and communications corporations that further destroy what we are trying to save. Now what we have left at Kalae Ka'ena faces another attack by this wind farm that will further desecrate this sacred place. This is where our spirits have come to begin their journey to return to the place of the gods. Why is it that these developers always want our sacred places for their profits? I'm so against such development. We should be rebuilding these cultural spaces to share our knowledge and history. I know that place better than anyone alive today, culturally. I will fight to halt any further development out at Ka'ena.

35 of Tom Pohaku Stone's Contacts Also Expressed Opposition to the O'ahu North wind farm development:

James Donnelly
Andrew Kaahanui
Helene M Asasio
Carson Gibbs
Rafael Cruet
Pono Kealoha “EO !!!”
Jesse Juan
Kauai Auwae
Vincent Pohaku
Guy Hawkes
Benton Pang
Larry Pierce
Halona Kaupuiki



David Kuwada
Dan O’Donnell “Do not do this on Hawaiian sacred land!”
Kioni Crabbe
Shawn Alladio

Miguel Leonel Espinal Soza
Scott Kikiloi
Ana Lucia Benchimol
Jonathan Beteta
Helene Spencer
Andy Lillestol
Joseph E'ale
Alvin W Kaniho
Ric Leyva
Kalei Ho'opai
Pete Sayer
Manutahi Mairau
Ku'ualoha Ho'omanawanui
Ka'iulani Manuwai
Maka O Kalani Minihan
Frank Perales
Bob Measel Jr

Clayton Okuma “Isn't Kaena point a sacred place? My grandpa told me a story about when he worked construction. The operators moved 3 big boulders because it was in the way of the architects design. The next morning when they arrived back at the site the boulders were back in the original location. The bosses wanted the operators to move the boulders again but they all said NOPE! So the architect had to change the plan and go around it.”

107 Additional Opponents:

Aubrey Boswell
Cody Lee
Steve Cortes
Debbie Meyer Zahner
Kahuku Community Association
Bryan L Talisayan
Charlotte Kamauoha
Maka O Kalani Minihan
Helen Sanjume
Dinah Smith Weatherby
Gregory Mendiola
Alvin Domingo
Keana-Kanoa Aniya
Lathrop Joseph
Cyrus Jones
Kakoa Labang
Shawn Briley
Justin Stevens
Russell Ramelb
Kalei Ho'opai

Santa Cruz Surf Shots

CJ Pouliot

Brandi Lau

Amana Hicks

Nicholas Dean Turner

Kyle Kiff

Michelle Hein

Jacy Shimahara

Kilinoemailani Okami

Cyrus Jones

Acorda Gerika

Ryan Eichner

Sean Mccaallee

Nora Husted Sanford

Ethan Asuncion

Lizzy Kauealu

Adrienne Blythe Baraona

Ivon Pacheco (surfer)

Ines De Sampaio Pacheco (surfer)

Lena R Jurio “Keep the country COUNTRY!”

Leian Helms

Unpa Nunpa

Ryuji Kano

Shawn McCaul

Shai Pniel

Kai Bartlett

Kristine Chuang

Monk Marin

Ed Francis

Curtis Lowe

Rodrigo Osborne

Robby Young

Jeff Lee

Paulo Schlogl

Michael Shaw

Bokal Med

Reef Takoyaki-bar

Hisaharu Tomita

Ivon Pacheco

Stanley E Willey

Matt Aldridge

Yound Shin

Alvaro De la Fuente

Chispa Andres De LaTorre

Fredy Castellano Hernandez

Darron Fredericksen

Tomer Reveya
Joao Oppenheim
Yasuo Maeda
Lionel Ortiz
Reenie Hutchins
Gandy Yacapin
Linda Hutchinson-Fulp
Terrence Aaron
Kekoa Schanafelt
Judy Saizon
Fayrene Buentipo
Kalani Simbre
Ryan Comilang
Teo Faleofa
Johnathan Lorian
Freeman Marieiro
Brock Benny Wagner
Robin Leachman
Robin Leachman
Phyllis Johnson
Jason Lee

Brian Ciseau “When will they learn... Holland has one of the highest number of these eye sore turbines with hundreds in the seas, over the beautiful country hills and still only produces less than 30% of their power... worse still the carbon footprint to manufacture, transport and install them makes the gains inconsequential... Wave power I say”

Rusty Slater
Ron Tyler
Darlene Jessee
Alvin Farmer

Sam Chung-Hoon “Kaena is a very sacred place in Kanaka Maoli culture. It is the point where the spirits depart.”

M Nels Gyland
Frank Curti
Laura Crowell
Paige Martin (seabird biologist)
Rob Turan
Dori Carmichael
Frances Tapongco Tyrell
Michael Adair
Angela Yogi
Micah T. Arnold
Noah-David Arnold

Angie Garcia
Karen Borger

Brent Schlea, Lahaina, HI “This project is insane. The adverse effects more than outweigh the benefits. Off shore wind farm developed in an area with the largest waves in the world is a disaster waiting to happen, to say nothing of the blatant disrespect of Hawaiian values it would have. I am curious as to know who the engineer who came up with the idea has actually seen 20 foot swell at 18 second intervals with the west-southwest winds and have any idea what's it going to do to these tall somewhat wind resistant structures floating out there, just waiting to get blown off their mooring only to wash ashore who knows where, Kaena, Mokuleia, or even Makaha. They might last awhile, but bumbye, guaranteed some going get loose. Lose money, and piss off plenty Hawaiians in the process. Give it up already!”

Additional Wind Farm Opponents – 37 Surfers and Supporters with connections to Hawai'i via San Diego connections

Bird Huffman “When will the Madness End? Please spread the word.”

Joe McDaniel

Ryan Wilson

Terry Snyder

David Hatch

Mylinda Carter

Ck Littlewood

John Brush Ayres

Greg Webster

Susan Toyama

Don Abreu Sipperley

Doug Harley

Dawn Zolezzi

Patrick Cinco

Jeff Feehley

Michael Hanson

Beverly Barnard Warrington

Susan Savage

Barb Lawrence

Drew McDaniel

Brett Bennett

Deborah HC

Richard Vattuone

George Blair

Richard Galligan

Keith Grisman

Sarah Love

John Abell

Darin Snodgrass

Valerie Jackson Juboori

Alvin Farmer
Geoff Biehl
Ronald Anderson
Robert Goodman
Chris Miller

Dennis H Burrows “Your comments relay the thoughts of so many that have experienced the beauty and those of millions still hoping to. THANK YOU!”

Justin Walczyk “Thank you”

Robert Ruesterholtz, San Diego, CA [strongly worded opposition]



NORTH SHORE NEIGHBORHOOD BOARD NO. 27

c/o NEIGHBORHOOD COMMISSION • 530 SOUTH KING STREET ROOM 406 • HONOLULU, HAWAII 96813
PHONE (808) 768-3710 • FAX (808) 768-3711 • INTERNET: <http://www.honolulu.gov/nco>

August 29, 2016

Karen Herrera
Renewable Energy Specialist
Pacific Office of Strategic Resources
Bureau of Ocean Energy Management
Office: (805) 384-6263
Cell: (805) 437-9170
karen.herrera@boem.gov

Aloha Ms Herrera -

For your official record and to be included in the requests for comments on the Alpha Wind Project off of the North Shore of Oahu.

On Tuesday, August 25, 2015, The North Shore Neighborhood Board No. 27, an official advisory board of the City and County of Honolulu, and representing for the North Shore community, held a community meeting on the Alpha Wind project off of Kaena Point on Oahu's North Shore. The presentation was given by Mr. Jens Petersen of Alpha Wind and was attended by at least 100 community residents.

During the course of the approximately 2.5 hour meeting, not one member of the community supported this project or thought it was a good idea. The North Shore Neighborhood Board No. 27 then voted on a motion to oppose the project and the vote was unanimous in opposition.

Mahalo for your time.

Kathleen M. Pahinui
Chair, North Shore Neighborhood Board No. 27

**Special Meeting Agenda
Tuesday, August 25, 2015
Waialua Elementary School
6:30pm – 9pm**

- I. Call to order – 6:30pm pledge and Hawaii Pono I**
In attendance: Sharlyn Foo, Leif Anderson, Moana Bjur, Kathleen Pahinui, Jake Ng, Mike, Jack, Bob Justus, Thomas Shirai, Bob Leinau, Kanani Oury, Bryan Phillips, Blake, Carol Phillips.
- II. Board Business**
 - A. Presentation of North Shore – *Peterson* from Denmark. Options for renewable energy. Is offshore wind something that can help renewable energy in Hawaii. 45 minute presentation in 10 minutes. Visual impression AW Power point. Developer in solar and wind. Project Development from cradle to grave. Very few windfarms have been decommissioned. Biggest market has been Ireland (Islands). Feasibility studies at this point. Started looking at Hawaii in 2005. Met with many on Molokai and realized this type of project would never happen there. Max capacity is 100mw which has been done. Looked at solar cannot hit 100% capacity. To hit the 100% have to look at the ocean (wave energy – no where near mature enough to be the backbone. Deep ocean geo – operate for at least 10 years before it can be funded. Algae production. Wind can be done offshore – very big in Europe all anchored there on the ocean floor. Have to look at floats for this area as it is too deep to anchor.**

Barbers Point - Install a drydock on Oahu. Order materials from someplace in Asia, build turbines in drydock and then upright in the harbor fully commission and then float them out to the ocean. Preinstall anchors and tug out to location. 24 hours from dock to set location and operating. Production 4000 mega hours/mw.

At least 5 years away. Very lengthy and complicated process.

At about 20 miles out the curvature of the earth starts to have an effect on the visibility.

Status – legally qualified, financially qualified. Bureau of Ocean Management – proposal has been put forth listing NS Oahu as an option. If offshore wind has to come in? If this looks feasible then have to go out to see if there is any other entity that could provide such a development, and if there is then it would go to auction. Expect the process to get to auction about a year. The auction will cost between \$2-10 million. Then \$5-10 million to conduct surveys \$2 billion to build.

If you go the path of renewable energy it is very important that we maintain control. Want to make sure that we maintain control over whatever happens on the ocean. Offer has been made to make sure that the control remains here, has offered to have anyone who would like to participate in this process to do so.

AWE - Provide link to Power Point

Questions:

How many? - 52

Kristin - restricted water rights

- B. Henry Curtis - Ililani Media - Life of the Land Advocacy - Blogging on energy issues. Met Yens 2-3 years ago. Have met a lot of companies this particular developer has been very open to the community. There are a lot of people eyeing the ocean. The technology is very new first commercial wind went in in 2001 2008 first floating offshore wind. Rhode Island 1st offshore taking 7 years to get to operational . Wave, wind, solar, and other options. There are other developers looking at wind as well. There are the cables etc. visual impacts, bird impacts, fish impacts. The best place is off Black Point to put wind. The band extends from Black Point to Aina Haina and then Haunama Bay.**
- C. Thomas Shirai - Involved with this project since the 90's since Puena Point issue, they won. Community participation is very important. Sending Kudos to the young people that are coming to the meeting to share how they feel. Verification and procedures change with each generation, need to document, etc just to be recognized. Come from a very steadfast deep rooted family in Waialua, land owners of a very large land mass - great grandmother whose parcels extend throughout Waialua. Strategically placed, some of the most culturally sensitive sites. Kaena Point is one of them Land grant 1665 John Keahipaka - Clara Keao. Parcel current condition - it has taken our community a long time to work there to clean up military remnants. Feasibility study to build a highway around Kaena Point. Sought to protect land at the point and NOAA made the bottom of the ocean restricted ground. Two coast lines North Shore Paalaa - Kaena - carbon dating arch. Studies. Mokuleia 750-100 AD. Habitation along this coastline a lot earlier then Waianae Coast or Waimea Bay. Description of fresh water feeding into the ocean feeding sea life etc. Kaena Point has several fishing grounds. Maui fished up the Hawaiian Islands from Kaena point. Kumihuiakea - large goat fish cut up put the**

pieces back into the water and abundant fish. Past Camp Erdman before Lyman – used to see water Waiakea Spring – history of Hi'iaka. Water sources coming from this place – Hi'iaka a deity.

Questions

Willie – How deep is the plateau?

A. About 100 meters

Spoke to someone in Holland the noise factor, a lot of dead birds, this would interfere with the migration of the birds. The Noise factor – a lot of water under the turbines will effect the fish population. It is also a case of sweet water use. Drinking water from the ocean floor. Biggest concern the whole concept – this is gigantic, worried that once this is finished...

Steve Wartovich

Live in Mokuleia drive to kaena point – You have no clue what you are asking the people of Hawaii, the views, the ocean, impact on marine life, quality of life, what we hold dear, you have come from a different planet. We gave up mauka not about to give makai.

Kiersten Bumgartner –

Impact on navigation to those who sail, fish, how will it limit access to recreation. Given the high cost of the development, how will this not be passed off to the consumer?

A. Peterson – Navigation no major impacts, will be means to navigate around the turbines, Might not be final call. Should be able to sail and fish right up to them. They will be visible so can navigate around them. Of course they will be passed on to consumer. The rate is about .15 we are currently paying .34. If cannot give you cheaper power then we should not do this. Currently rate payers pay about \$3billion to the utility.

Earl Dahlin – We look at the mountain we have windmills staring at us. With the Gov's plan for renewable energy. During the summer we have yellow fin tuna comes up pacific side. They span here lay eggs, go to equator then come back. Fish has dissipated a lot in the past 20 years. Can you guarantee we can fish the project area. To put a restriction on an area that we have been fishing over 100 years. Best place for wind is East side put it out there. Do your homework, cost – we will be paying for it like the rail as it goes along we will be in it more and more and more.

Peterson – This is why we have local experts – the next 5 years we will have these experts research to see if we can do this. No one can guarantee no restrictions, other authorities may have a different opinion

Jess Lundgrin

Do they kill birds? A. Yes we have documented in California, Spain, and? Massive amount of birds flying in and out, the migrating birds have not been significant.

What about the construction, maintenance, removal, when outdated materials how much will that cost? How long does it take to recover money? What about jobs?

A. Henry

right about the original turbines took birds.

Peterson

Asked to come out early to do the research.

Q. Kevin Kelly – Waialua

Doing a little math, all agree we want to be renewable by 2045, big ? is how do we get there? From 19 miles off if you had towers that were 250-275' won't see at all. 675' needs to be about 30+miles offshore. Can they really be free floating? Looking for solutions about how we want to power island. People come for the beauty, the view plane. Can we put them around the deeper horizon?

A. Peterson

Yes we could put them further away the cost goes up.

Q. Marilyn Walsh – Papailoa

Kaena is her Diamond Head, Mokuloas, respect knowledge about this project. We already have 4 projects. Biggest travesty Waimea Valley. North Shore has done our duty when it comes to windmills. They might be great but we need to put them someplace. The North Shore people truly love the land. Thank you Mr. Shirai I have learned a lot about the land.

A. Henry

Personally think it was a travesty putting up windmills at Waimea Valley.

Q. Kent Fonoimoana – Kahuku

Have experience with wind turbines, thank you Yens, not often you have a windmill developer that will be honest. Word of fair warning, there is someone coming in behind him. The 1st developer got the permits and sold them to someone else at Kahuku. Advise if you are opposed one way or another start a group now. We petitioned the PUC to be at the meeting HECO PUC Developer said no. Not even comments. Were blocked from even offering comments.

Q. Mike Dixon- NS since 1979

Thank you for a very clear presentation. First still need to accept the fact that power needs to come someplace. Solar batteries solar power. Mike has done off shore cannot hear the windmills from upwind. Possibility about night the ones in ostender are not lit. They are anchored to the bottom the north seas is extremely rough. If we can't hear them, see them this project might have legs. They are great fishing. Lights – project needs to be investigated. Need electricity from someplace other than oil.

Q Shelby – Waialua

Respect to you for coming out to present to us, but this is not going to happen here. Our marine life and marine boards, the ocean takes up 70% of earth, everything we do to this effects us. This is the whale highway, the birds – we used to run our cattle up at Kahuku – so many birds that are taken but small area that we are looking at. Home to albatross, shearwaters, Monk seals, watch the whales during the winter, people from around the world this is our last piece of country on the north shore on Oahu lets keep it that way.

Q. Anne Grommers

Can you distribute studies of the Whale migration on the north sea? When you showed the pic of the turbines – this is a very active migration area – birds, whales, fish are here which attracts birds. We want extensive studies done from Europe. Know we need to do something to extend our life here. Lied to about Waimea Valley – not your fault.

Q. Bill Martin

From this point on if everything was moving forward what kind of studies and how much would that cost? Is this something that you would do if you get a green light? If the community opposes this project could this still take place? Mentioned bigger longer blades not moving as fast as before How fast are they actually moving? Save your money - don't bother

A. Peterson

Full EIS above and below – 7 years to process. \$2million min. Studies have to be done first. Before we could even apply. 22 km/ hour about 130 m/hour.

Q. Diane Anderson

So frightened for this project moving forward primarily vision impact. Thank you for the honest presentation. Most encouraging thing heard is that you could put them further out. Fishing – can't speak about. Not Hawaiian and knew that Kaena Point is the jumping off point when one passes on into the next dimension. How could you even consider this spot, it is astounding.

Q. Dan Benedict

Encouraged and appreciate saying that “you need as a community to have control of this” not sure what that means. Think globally act locally, hearing a lot of voices act locally we need to think globally which means we can no longer use the way we have, fuels that pollute the whole planet. How do we fuse global, local, cultural. The fture of oahu is bleak because the global outlook is bleak

A. Peterson

If this is controlled by someone else they would control the power point. Need to make sure from the outside that you control the process, how they are built, operated, control the asset from cradle – grave.

Henry

Brunt of renewable energy is rural areas. Don't go to Waikiki and see solar. No panels on Kahala Mall, Needs to be through of regionally as well. Cannot be that the NS puts all the renewables in so Waiakik gets the power

Q. Ken Martin

Are you open to meeting later for tech questions. Do you control the LLC. Will you personally commit to the people here on the NS to have an unbiased EIS. Need more energy solar seems better. Waves corrosives, people need to think about the following issues, how is this going to work if they live 20 years or not. Surf is our lively hood these things cannot have any impact on the surf. The aspect of the visibility

A. Peterson

Yes will guarantee, and will meet with you personally.

Q. Sharlyn Foo

Thank you for being open and honest, we are a very tight spot as all renewable energy has been pushed to rural. States commitment to 100% renewable is a tall order on small plot of land. Don't think we can avoid this talk. When you say take control does that involve money? Who are you leasing what from?

Peterson

Can find ways to fund the project, but you can maintain control, need to raise funding to maintain control. Lease process means outside of 12 miles anywhere in the US, it is controlled by federal govt BOEM controls access, cables, etc.

Q. Makani Ortogero

Thank you for being here tonight thank you Henry I enjoy your blog. Currently is there any other renewable energy tools that your company invests in? Working with BOEM right? BOEM was formed as a mining oversight. BOEM and MESI were split due to their conflicting missions. Believe there are 5 other sources of energy. Law of the Sea argument was that they have the inherent right to mine where they want when they want. It is the potential mining of minerals that Hawaiian waters are rich in.

Peterson – Solar.

Henry – Federal. Mineral mining involves only fed. BLNR would have to issue permits for the cables.

Q. Ryan Hopper

Proposed zone is our summer ahi zone we get a day a week maybe a month. We go through that zone hoping waiting wanting. One day a year runs the boat they go right where the project is. A guy has never gone out in a year throws his pole out. Whether it is off Kaena Point. Penguin. If you plant these here you would kill our whole summer time fishing and throughout the rest of the year. All of the fish that we fish for are there.

A. Peterson – will you take me out there, so I can see from your side?

Q. Bob Leinau

Thing with control is interesting when the feds or DLNR, still going to have waters, PUC sets the rates, don't see how we can have any more control than we have right now. It sounds good.

A. Henry

Some discussion about some kind of renewable energy plant for the NS. What if the NS had it's own coop grid on the NS. And tis energy was routed into the grid and this was energy provider

Q. Shelby

Contorl sounds good but practical sense how would that happen. How are we in control now? This is why you are getting a lot of this feedback seems like a lot is being assumed. Open space open ocean is not the ame thing as open space. For us that is not empty space, fish birds, wind, sun this is already occupied space. Whether I can see it from house kahaluu. The area functions well without our intervention. We do not need fish aggregation device people have been successfully fishing the area for hundred of years.

A. Peterson

Increase of wildlife growth, how is that going to change the total impact

Q. Kawika Au Pres Hawaiian Waialua Civic Club

Said that if the people here did not want you here, what would that take to happen? Diane touched on the cultural impact, there is a huge cultural impact. Even if I couldn't see them knowing that they are there would be a huge offense to myself and my ancestors. Talk to the people of the lands, how will this mpcat out society, well being.

Q. Lily

Don't think that we should touch North Shores beaches because it is home to. Don't want to ruin animals homes, and nature.

Q. Carol Phillips

Appreciate you aking time to come here, are you familiar with the tradeind studies that they have been declining. 1970's sudy shows decline at 35%. Winds are dying. Can the windmills work without wind. If the people don't want that is that the people at the state capitol, the people.

A. Will do a extensive search – if it doens;t pay the price we can accept then they will not do this. Have to put that back to you, cannot make those calls, you having a say it is important that you are involved.

Henry – PUC has been very selective about who they will let into proceedings. One thing that should be considered is how the neighborhood boards are positioned.

q. Thomas

Because of community concerns DOI within is Office of Native Hawaiian - this name was not put on the list.

Henry

Penguin Bay – was a project a while ago that needed federal approval, NOAA stepped in and said nothing is going into Penguin Bay.

Q. Earl Dahlin

One gentleman said birds do not have anything to do with this. The birds come when the fish are present. Birds gonna have lua. When fish are in the zone you have hundreds of birds. Problem starts with the government. Came out on the news saying we need more houses. How many houses can we grow? Put something up on new homes. Every home big or small should be made to be solar. Helps out. Problem is HECO have to go through an act of congress to get the grid up. If everyone had rooftop solar would'nt that help out.

Q. Willie

Answer the question about what are you going to do for air safety? Explain to the people about the cost of the maintenance. If you don't use in 10 years feds take the money back.

A. Peterson

FAA would decide how they would be marked. Need to work to design so they will not be as visible from shore at night. Birds are always an issue, yes there will be more birds and more fish. Hopefully life of turbines can be extended. Once they are obsolete and they need to be decommissioned there is money in the steel.

Q. Jess

Is anyone going to organize our opinion? This is a problem with the NS it is not a cohesive group as it is transition. From my understanding the materials, transport, build using lots of fossil fuels. When do we start to see payback? Do you have monies to remove these turbines?

A. Peterson – 6 months into operation turbines have covered the cost of production

Henry – Green house stats – After you have dug a hole on land you have to fill the holes with cement which is the single most impact. Both solar and wind payback quickly. Money for decommission will be set aside as a requirement. Corrosion is a big issue.

A. Kathleen

Please sign in with email address and you will be placed in database.

Q. Bryan Phillips

Where are the connection points on the land? What upgrades will be needed on our current grid? Is there a description of the Diamond Head proposal available?

Peterson

Had to find a strong power point most likely Kahe which is the strongest, barbers point, or middle of island. Technical answer – do not need to upgrade but it is how to balance wind into the grid.

Henry

both Kahe and Barbers point are strong enough. Alt is to land it in Haleiwa and send up to Wahiawa.

Q. Bob Justus

Have you done your research? We have the world class surf spot. We have huge swells how can we guarantee they won't break loose?

A. Peterson

Portugal is a project site with big waves and these have survived there for years. Biggest concern is how can we survive a hurricane. Not sure how they could effect surf. They are 18-19 miles from the coast.

Q. Makani Ortogero

Mention that when we have fish aggregates, we already have fishponds, a traditional way of fishing, currently our shore development has negative impact on this, Going out on the ocean you will have an even more negative impact. There are alt. sources without having to put in such large infrastructure. Downward hill water flushing through it providing homes with energy. 30% of the power is used for cars.

Q. Chance

Have you done any study on waves and how they will impact the windmills, what would the envirimnermtlnal impact? Chords won't they have an impact on fish wildlife etc. Extremely oppose think it will have an extremely negative impact environmentally.

A. Never imagined turbines 30 miles off shore could impact the surf. If we had a catastrophic problem twith the turbines and they disenegrate. They would sinkg. We need to study this very carefully. We need to look a the cables and how they would impact fish.

Q. Kanani

Have you made this presentation to Honolulu. Why would you come here first when Honolulu has a more viable resource, closer power, we are kind of tapped as it is. Why come here when we have cultural and historical? Why did you come the NS first? On that note will we be forming an adhoc committee?

Peterson

Not yet.

Kathleen – Thomas and Blake brought this forth in May, we are being proactive not reactive.

Henry

Hope that we look at everything here so that before someone gets another land project

Q. Les Choi

Tsunamis – how would that effect the project. This is not Europe, we cherish our land, ocean, Hawaiians navigated stars. Did you go to Waianae Neighborhood? When you say you need to check on your researches, when you select those people can it be kupuna from all islands, not from the mainland they don't know anything about our culture. Need kupuna and civic clubs involved.

Peterson

A couple of meters the turbines would absorb that. Happy to go talk to others. Not trying to sneak anything in the back door Very sorry about the hill. Need to be able to be sustainable. You are pretty far away from being there right now. This was put out in February and has been contacted by more than 100 from the mainland and all have been rejected. This is a Hawaiian project it should be the people from here to extend their knowledge going forward.

Henry – as the coast becomes very steep, what could be 100' tsunami on the coast only a couple of inches 30 miles out.

Kathleen –Contact all effected neighborhood boards.

Blake

When we found out in July, you pledged to stop work immediately if the public doesn't want. This unsolicited bid triggered a request for bid for 10000 acres of ocean from top to bottom. Govt and citizens control. In the dialect he asked that they consider is because he had reached out the community.

Motion made by Blake 2nd by Carol. made motion– NSNB moves to express opposition to DOI 13-0

Henry – has spoken to BOEM normally when someone proposes it is for that area or adjacent. For Oahu it was stated that we couldn't handle more than one. It isn't that one developer that could say we want the place off Kaena. Barbers Point and Kaena being looked. At.



[Surfrider Foundation Oahu Chapter](#)
Web: oahu.surfrider.org
Contact: rbergstrom@surfrider.org
Mail: P.O. BOX 283092 Honolulu, HI, 96828

September 7, 2016

Regional Director
BOEM Pacific OCS Region
760 Paseo Camarillo
Suite 102
Camarillo, California 93010

Dear BOEM Regional Director,

The Surfrider Foundation's O'ahu Chapter would like to thank you for the opportunity to submit comments on the proposal to consider allowing wind farm development in the waters off Ka'ena Point on the North Shore of O'ahu. We would also like to acknowledge that we are very grateful for the continued due diligence that is being done to engage the local stakeholders on the issue.

Our chapter leaders were given the opportunity months ago to meet with your representatives to gain insight into the project plans. Despite these early meetings and your continued efforts to engage we are writing now to express concerns with the location of this initial potential project plan.

The Surfrider Foundation is a 501(c) 3 non-profit environmental organization dedicated to the protection and enjoyment of the world's oceans, waves and beaches for all people. As a grassroots organization, Surfrider's efforts include promoting the right of low-impact, free and open access to the coastal environment. The Surfrider Foundation is represented by over 50,000 members in the United States and the O'ahu Chapter represents one of the strongest and most active groups in the country.

Many of our volunteers, advocates, and founding partners are members of O'ahu's North Shore community. While our State moves towards its goal of 100% renewable energy, it is important that we consider many avenues to reach such a lofty goal. Wind power is certainly a viable opportunity to contribute to this energy production and our members and volunteers are aware of this. However, it is very clear from correspondence and public meetings with our North Shore residents that this project is not supported by the community. We urge you to consider this.

The North Shore of O'ahu is already home to the island's wind projects which have lacked transparency and have not been well received. While this region is certainly part of the island's energy consumption, it is the city of Honolulu that consumes nearly all of the island's energy. Future projects need to consider that impacts of big wind should be absorbed by the population that uses them most.

The coastline and nearshore waters adjacent to the project site proposed off Ka'ena Point are regularly used by Surfrider Foundation members for a variety of activities, including surfing, cultural practices, kayaking, diving, kite boarding,

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boating, beachcombing, photography, fishing, recreational sailing, and aesthetic enjoyment. Surfrider members may be impacted by the project through diminished aesthetics, recreational opportunities, environmental quality, and loss of traditional cultural practice.

Ka'ena Point is a sacred area to Native Hawaiians for cultural and environmental reasons. Protected by the State, the area serves as the breeding grounds and sanctuary for endangered Hawaiian wildlife that include the Laysan Albatross, Wedge-tailed Shearwater, the Hawaiian Monk Seal, and migrating Humpback Whales. The impact on this wildlife from a large array of 600-foot-tall wind turbines and their undersea cables has the potential to be severely detrimental to these species.

In addition to the potential wildlife impacts, the recreational impacts could be harmful as well. Given that such large projects with floating wind turbines have never been undertaken, this is not the place to try to experiment with a new technology that is still unproven.

Each year, thousands of people flock to the North Shore to witness one of earth's most amazing spectacles in the form of large near-shore waves that are ridden by some of the most fearless athletes on the planet. The big-wave season is one of the largest economic generators for our State and the impacts to wave pattern by the wind turbines are unknown. If this large-scale project did effect the wave patterns it would be highly detrimental to a culture that gives O'ahu its identity.

Ultimately, a project of this size and scale does not belong in the waters off of Ka'ena Point and our community has spoken loudly on this issue. Our friends and neighbors there have provided a more extensive list of potential impacts and alternative measures that Surfrider hopes you will review carefully. We encourage you to listen to this voice and consider other options and areas for your project site.

Mahalo for taking the time to listen to our concerns and please do continue to engage with all stakeholders as you move forward.

With Aloha,

Rafael Bergstrom
O'ahu Chapter Coordinator, The Surfrider Foundation
rbergstrom@surfrider.org
808-445-2085

Deleted: yet

Sunset Beach Community Association
P.O. Box 471
Haleiwa HI 96712

6/02/2015

Mr. Jens Petersen
AW Hawaii Wind LLC
BOEM company number 15043
501 Ave. D
Bovina TX 79009

Dear Mr. Petersen,

The Sunset Beach Community Association takes great interest in the progress of your lease application for the Oahu Northwest Project. As noted in your application, the effects of the undersea power cables on Elasmobranchs and other marine species, sand wave effect, impact on marine life, including coral reefs, maritime cultural assessment, and visual impact are factors that carry great importance in our community.

Your outreach efforts included many agencies and entities, as well as meetings with local groups and individuals on Lanai and Molokai. Should this project progress to the next phase, the SBCA asks that we be included in community meetings and information sharing, as this is a huge project slated for our offshore waters, and at this time we view it with grave concern.

Sincerely,



Andrea Woods
Corresponding Secretary
Sunset Beach Community Association

cc: John Romero, Public Affairs Officer: Bureau of Ocean Energy Management
North Shore Neighborhood Board
Council Chair Ernie Martin
Senator Gil Riviere

Sunset Beach Community Association
P.O. Box 471
Haleiwa HI 96712

07.24.2016

Congresswoman Tulsi Gabbard
300 Ala Moana Blvd.
5-104 Prince Kuhio Bldg.
Honolulu, HI 96850

Senator Brian Schatz
300 Ala Moana Blvd., Rm 7-212
Honolulu, HI 96850

Dear Congresswoman Gabbard and Senator Schatz,

The Sunset Beach Community Association joins many other organizations on the North Shore of Oahu as well as the Waianae community in being opposed to the proposed wind turbine project off the coast of Ka'ena Point. The Bureau of Ocean Energy Management held 2 meetings in June for both communities, and there was no support for the project in addition to a list of very substantial concerns. The SBCA members share those concerns, ranging from environmental dangers to marine and sea life, to fishing rights, to Hawaiian cultural practices.

To keep moving ahead with the process when the communities most directly impacted are against it seems at the least to be a waste of government resources. As noted in the meetings, perhaps more attention could be given to rooftop PV energy, and solving the current problems with our utility provider being able to incorporate that model into the existing energy grid.

We urge you to treat this BOEM permitting process with attentiveness, and to consider the concerns of the community.

Sincerely,



Andrea Woods
Corresponding Secretary
Sunset Beach Community Association

cc: Karen Herrera, BOEM
Representative Feki Pouha
Senator Gil Riviere
North Shore Neighborhood Board

Waialua Hawaiian Civic Club
P.O. Box 102
Waialua, Hawai'i 96791

“To perpetuate the traditions and customs of our Hawaiian ancestors”

September 1, 2016

Regional Director
BOEM Pacific OCS Region
760 Paseo Camarillo, Suite 102
Camarillo, California 93010.

Re: **Comments on Hawai'i EA**
Strong Opposition to AWH Oahu Northwest Project

Aloha kākou;

The Waialua Hawaiian Civic Club was organized in 1934 to perpetuate the traditions and customs of our Native Hawaiian ancestors and to promote the educational, social and civic advancement of the Native Hawaiian community. Our members are composed of elders, scholars, educators, cultural practitioners and students from the Waialua district.

We have deep concerns regarding the proposed wind farm development off our coastline that has the potential to negatively impact our right to continue our traditional and customary practices. Waialua is a rural community where Native Hawaiian religious, cultural and subsistence activities continue to be an important part of our everyday life.

Traditional Cultural Properties (TCP) and Cultural Land and Seascapes

The National Register indicates a traditional cultural property “can be defined generally as one that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community’s history, and (b) are important in maintaining the continuing cultural identity of the community”.

The ahupua‘a (land districts) of Ka‘ena and Kuaokalā are highly significant traditional cultural properties that are well documented by Native Hawaiian and Western scholars. Ka‘ena is the site of our sacred Leina a ka ‘uhane, for centuries the locus of Native Hawaiian spiritual concepts regarding death and afterlife. On every island there existed at least one prominent bluff pointing westward where souls would leap into the afterlife. Our mo‘olelo (history) reports that when the soul left the physical body at death it would travel the path of the spirits, awaiting assistance from ‘aumakua (ancestral gods) to complete the journey and return to the land of the ancestors. Seven story wind turbines within view of this incredibly spiritual place would desecrate the landscape and

negatively impact continuing Native Hawaiian religious and cultural practice.

Renowned literary traditions of akua (goddesses) Pele and sister Hi'iaka place them at Ka'ena as they depart to Kaua'i. Demi-god Maui is associated with this land and seascape as oral traditions retell the casting of his magic fishhook to the island of Kaua'i in his attempt to unite the islands. The sacred kupuna stone of Pōhaku o Kaua'i sits offshore. This oral history recalls the strong and close bond between Waialua and Kaua'i that included visual, spiritual, genealogical and auditory connections between the two islands. The construction of wind turbines between O'ahu and Kaua'i will permanently sever these meaningful connections that have been in place for centuries.

Several heiau (religious temples) were constructed on the landscape and have alignments and ritual functions regarding the rising and setting of the sun. Ka'ena is also the site of an ancient fishing village listed on the Hawai'i Register of Historic Places. Historical remembrances regarding the size of native kūmū (goatfish) from monstrous proportions to the fish we currently see in our coastal waters are part of the oral traditions of this land and seascape.

Therefore, any construction of wind turbines between O'ahu and Kaua'i will have significant negative impacts to the religious practices, cultural traditions and archaeological resources of the Native Hawaiian community.

Subsistence/Gathering Activities

There is an abundance of traditional fishing ko'a (shrines) on land and in the ocean along this coastline. These ko'a were built by our ancestors to attract fish and bring life to the land. The offshore waters of Ka'ena were productive fishing grounds in the past and continue to be a source of subsistence fishing for our community. The Ka'ie'ie Waho channel between O'ahu and Kaua'i is an outlet for freshwater springs that originate in Wai'anae. The upwelling contributes to a rich marine environment and biological diversity. We know several species of pelagic fish that have migrated through the Ka'ie'ie Waho channel for millennia. These fish species are important to our diet and cultural traditions. The construction of 51 floating platforms in the channel will negatively impact and/or block the migration of these pelagic species we count on for subsistence practice and survival.

Therefore, the construction of wind turbines in the rich fishing grounds between O'ahu and Kaua'i will negatively impact Native Hawaiian cultural traditions and subsistence practice.

Traditional Practice

Surfing is a Native Hawaiian traditional practice that continues into modernity. The North Shore of O'ahu was a well-known traditional surfing coastline, with numerous named surf breaks that have been transmitted from generation to generation. During our wet season, powerful storm generated waves travel 2,500 uninterrupted miles across the expansive Pacific, until they encounter our shoreline. There are numerous references to the thunderous waves of our coastline in traditional Hawaiian poetry and mele (songs).

The epithet “O Waialua kai leo nui” was well known in traditional culture and the loud voice of the sea of Waialua was often heard in the uplands of Wahiawā. The waves that impact our coastline move from deep ocean to the steep near-shore slope causing significant height increase due to shoaling and refraction. Winds that blow from northeast to east-northeast against the northwesterly swell creates the ultimate environment for nalu pi‘i (climbing surf). These factors make the north shore of O‘ahu the surfing capitol of the world and the resulting surf industry generates revenue for our local economy.

Therefore, what impacts will occur to the ocean energy of northwesterly swells and the winds that contribute to our exceptional surf conditions with the assemblage of platforms, anchors, and blades of the proposed wind turbines?

Sailing and navigation are traditional cultural practices that have been revived in the Native Hawaiian community. Contemporary navigators utilize way-finding methodologies based on ancestral knowledge and observation of the sun, planets, and constellations. Our modern day navigators also rely on winds, ocean swells, cloud formations, reflections and the presence of terrestrial and marine animals to inform their sailing decisions.

Therefore, what negative impacts from the blinking lights of the 600-foot tall turbines have on our ability to perform astronomical observations from Ka‘ena? What impacts to seabirds that are imperative to navigation occur from the massive, spinning blades? What impacts to ocean swells and currents will the platforms have? Will cloud formations and ocean reflections be impacted by the turbines?

Natural Environment and Wildlife

Ka‘ena is one of the last few remaining and easily accessible wilderness areas on O‘ahu and the site of one of the last intact dune ecosystems in the main Hawaiian islands. Ka‘ena Point was designated a Natural Area Reserve in 1983 and contains one of the largest seabird colonies in the main Hawaiian Islands. The reserve provides refuge and a nesting area for the Laysan Albatross, Wedge-tailed Shearwater and White-tailed Tropicbird. Ka‘ena is also a nesting site for the endangered green sea turtle and Hawaiian monk seal. During the winter breeding season, humpback whales frequent the waters surrounding the point. A healthy society is based on healthy, protected ecosystems.

Therefore, what effects to these migrating seabirds and marine mammals will the blades, platforms, anchors, transmission lines and chemical lubricants have on their populations? You cannot mitigate the demise of any animal species.

As stewards of the lands and waters of Hawai‘i nei, we insist that BOEM, an agency of the federal government perform due diligence and follow all applicable Federal, State and County laws. Below is a list of federal laws that we believe are relevant in protecting our rights as Native Hawaiians:

National Environmental Policy Act of 1969
National Historic Preservation Act of 1966
American Indian Religious Freedom Act of 1978
Archaeological Resources Protection Act of 1979
Archaeological and Historic Preservation Act of 1974
Native American Graves Protection and Repatriation Act of 1990

We understand the proposals seek to meet Hawai'i's clean energy needs BUT there are viable, clean alternatives like Solar PV with battery storage that will not harm the cultural and natural environments of our homeland. Aloha no,

Maka Valdez, President
Cynthia Puha-Nichols, Vice-President
Malia Evans, Secretary
Christina Mackey, Treasurer



W A I K I K I I M P R O V E M E N T A S S O C I A T I O N

Regional Director,
BOEM Pacific OCS Region,
760 Paseo Camarillo, Suite 102,
Camarillo, California 93010.

September 6, 2016

Regarding: Environmental Assessment for Commercial Wind Leasing and Site Assessment Activities on the Outer Continental Shelf (OCS) Offshore the Island of Oahu, Hawaii; MMAA104000. [Docket No. BOEM–2016–0049]

Aloha:

The Bureau of Ocean Energy Management (BOEM) has announced its intent to prepare an Environmental Assessment (EA) of potential commercial wind leasing and site assessment activities on the O’ahu Call Area (OCA) offshore the island of Oahu, Hawaii.

This letter represents the views of the Waikīkī Improvement Association (WIA), a nonprofit organization representing 175 leading businesses and stakeholders in Waikīkī. Since its founding in 1968 the WIA has worked to accomplish the organization’s objectives “to improve, enrich and beautify Waikīkī for the benefit of residents and visitors alike, to promote conditions conducive to the economic and cultural good and for the betterment of the entire community.”

The Waikīkī Improvement Association is alarmed that BOEM is considering leasing a site for a commercial wind energy project off Waikīkī. The visual blight that such a project creates would be a major disaster. A wind energy operation would scar the natural beauty of a seascape that attracts over 5 million visitors a year endangering over \$7 billion dollars a year in visitor expenditures.

Further we have grave concerns of the financial and practical viability of a commercial wind energy project given the development and maintenance costs of operation in Hawai’i’s challenging physical environment. A failed operation even if fully bonded would take time to remove and a derelict project would only add to the visual blight.

The Waikīkī Improvement Association also has concerns regarding the ability of such a project to withstand severe storm conditions and the increasingly frequent hurricanes. Damage to the off shore facility could cause floating debris that would be a danger to ocean activities and end up on Waikīkī’s beaches.

WIA believes that commercial wind leasing that would be visible off Waikīkī’s south shore is a bad proposal that should be abandoned.

Mahalo,

Rick Egged
President, Waikīkī Improvement Association



WAIKIKI BEACH SPECIAL IMPROVEMENT DISTRICT ASSOCIATION

September 5, 2016

MEMORANDUM

TO:

Regional Director,
BOEM Pacific OCS Region,
760 Paseo Camarillo, Suite 102,
Camarillo, California 93010.

FROM:

Rick Egged, President
Waikī Beach Special Improvement District Association
Waikī Shopping Plaza
2250 Kalakaua Ave. Suite 315
Honolulu, Hi 96815

SUBJECT: Environmental Assessment for Commercial Wind Leasing and Site Assessment Activities on the Outer Continental Shelf (OCS) Offshore the Island of Oahu, Hawaii; MMAA104000. [Docket No. BOEM-2016-0049]

The Bureau of Ocean Energy Management (BOEM) has announced its intent to prepare an Environmental Assessment (EA) of potential commercial wind leasing and site assessment activities on the O'ahu Call Area (OCA) offshore the island of Oahu, Hawaii. The EA will address environmental impacts and socioeconomic effects related to the proposed action, issuance of one or more commercial wind energy leases and approval of site assessment activities on those leases. The proposed action that will be the subject of the EA consists of (a) the issuance of a wind energy lease or leases within some or all of the Call Area (see below) offshore the island of Oahu; and (b) the approval of site assessment activities on the lease or leases. BOEM will also consider the environmental impacts associated with potential site characterization activities.

The Waikī Beach Special Improvement District Association (WBSIDA) was established by City and County Ordinance in 2014. The WBSIDA was created for the purpose of managing and financing supplemental services and beach improvements to Waikiki Beach. The WBSIDA is a non-profit established to manage and support beach improvement projects in the Waikī district as a public-private partnership. The WBSIDA represents the interests of the broader Waikī community but specifically the commercial sector members of the WBSIDA.



WAIKIKI BEACH SPECIAL IMPROVEMENT DISTRICT ASSOCIATION

The WBSIDA offers the following comments and concerns regarding BOEM's intent to prepare an Environmental Assessment of potential commercial wind leasing and site assessment activities on the O'ahu Call Area (OCA) offshore the island of Oahu, Hawai'i.

1. The visual impact on the horizon is a serious concern shared by many of the WBSIDA's members and Waikikī community in general. The WBSIDA has concern over any visual impact for the Oahu South Call area and recommends alternative sites outside the visual range of south O'ahu shoreline be considered. The same may hold true for North Shore, stakeholders for the Northern Call area.
2. A very detailed visual impact assessment will need to be carried out by the developer with a dedicated stakeholder/community outreach effort to inform the process as to community sentiment and acceptability for visual impacts. Height and angle to the horizon will need to be taken into account for visual impact assessments. We recommend visual representations be developed as part of the initial EA to help inform stakeholders to the actual visual impression of the windmills on the horizon.
3. The WBSIDA recommends BOEM consider an adequate requirement for a security bond for the full cost of removal of the equipment if the project were to fail and be abandoned. Past wind energy projects in Hawai'i that have been abandoned by the operators have been left to rust onsite. The WBSIDA requests the project operator would be required a post a secured performance bond for the cost of removal if it is abandoned.
4. Alternative site locations and wind farm configurations as well as design heights should be part of the eventual Environmental Assessment for the proposed Oahu Call Area and specifically the South O'ahu site.
5. The WBSIDA is particularly interested in learning more about visual impact assessments and outcomes for the offshore projects that have been built in the United States. What was the community outreach and education process like for the projects that have been implemented so far in the US? What are some of the major lessons learned from these other projects?
6. The design tolerances and resilience of the offshore wind platforms to coastal natural hazards such as tsunamis, hurricanes and storms should be able to withstand probabilistic storm and tsunami events.
7. The WBSIDA is interested in the cost differential for an offshore vs onshore wind farm.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

SEP 07 2016

Comments on Hawaii EA
Joan Barminski, Regional Director
Bureau of Ocean Energy Management
Pacific OCS Region
760 Paseo Camarillo, Suite 102
Camarillo, California 93010.

Subject: Notice of Intent to Prepare an Environmental Assessment for Commercial Wind Leasing and Site Assessment Activities on the Outer Continental Shelf Offshore the Island of Oahu, Hawaii

Dear Ms. Barminski:

The U.S. Environmental Protection Agency has reviewed the above-referenced document. Our comments are provided pursuant to the National Environmental Policy Act, Council on Environmental Quality Regulations (40 CFR Parts 1500-1508) and our NEPA review authority under § 309 of the Clean Air Act.

The EPA strongly supports the state of Hawaii in reducing reliance on fossil fuels and meeting 100 percent of Hawaii's energy needs using clean energy by 2045. The development of offshore wind can help Hawaii attain its clean energy goals, while reducing greenhouse gas emissions. Accelerating the development of renewable resources like offshore wind will help Hawaii meet its energy demand, reduce dependence on imported oil, create new jobs, and provide for increased energy security.

Reducing the environmental impacts associated with the deployment of this technology is critical for accomplishing these objectives. To assist in the scoping process for this project, we have identified several issues for your attention in the preparation of the Draft Environmental Assessment. These issues include: impacts to air, water, biological resources and habitat, among others.

We appreciate the opportunity to review this scoping notice and are available to discuss our comments. Please send one hard copy of the Draft EA and one CD ROM copy to the address above (mail code: ENF-4-2). If you have any questions, please contact me at (415) 972-3545, or contact Scott Sysum, the lead reviewer for this project. Scott can be reached at (415) 972-3742 or sysum.scott@epa.gov.

Sincerely,

A handwritten signature in black ink that reads "Ann McPherson".

Ann McPherson
Environmental Review Section

Enclosures: EPA's Detailed Comments

U.S. EPA DETAILED COMMENTS ON THE NOTICE OF INTENT TO PREPARE AN ENVIRONMENTAL ASSESSMENT FOR COMMERCIAL WIND LEASING AND SITE ASSESSMENT ACTIVITIES ON THE OUTER CONTINENTAL SHELF OFFSHORE THE ISLAND OF OAHU, HAWAII, SEPTEMBER 7, 2016

Purpose and Need

The Draft Environmental Assessment should clearly identify the underlying purpose and need to which the Bureau of Ocean Energy Management is responding in proposing the alternatives (40 CFR 1502.13). The *purpose* of the proposed action is typically the specific objectives of the activity, while the *need* for the proposed action may be to eliminate a broader underlying problem or take advantage of an opportunity. When formulating the need, identify and describe the underlying problem, deficiency, or opportunity that the action is meant to address. The purpose then defines the measurable objectives to be used for evaluating the effectiveness of potential alternatives toward meeting the need.

Alternatives Analysis

The National Environmental Policy Act requires evaluation of reasonable alternatives. Reasonable alternatives should include, but are not necessarily limited to, alternative locations within the project area, alternatives that identify environmentally sensitive areas or areas with potential use conflicts, alternative technologies, and alternative configurations of key components. The Draft EA should provide a discussion of the reasons for the elimination of alternatives which are not evaluated in detail.

A reasonable range of alternatives will include options for avoiding environmental impacts. The alternatives analysis should describe the approach used to identify environmentally sensitive areas and describe the process that was used to designate them in terms of sensitivity (e.g. low, medium, and high). The Council on Environmental Quality Regulations for Implementing NEPA state that alternatives should include appropriate mitigation measures not already included in the proposed action or alternatives (40 CFR 1502.14(f)).

Site Characterization Surveys and Site Assessment Activities

The Draft EA should provide detailed descriptions of the proposed site characterization surveys and site assessment activities that will be conducted over the next five years and also discuss alternative methods of characterizing or assessing the site(s). The Draft EA should describe the type of data that will be collected and identify the area over which effects may occur in order to better inform baseline data collection. The Draft EA should provide an evaluation of wind and wave conditions during hurricanes and tsunamis.

Description of Technology to be Deployed

The Draft EA should provide a clear description of the technology most likely to be deployed, including different options for anchoring floating offshore wind turbines and potential cable routes. Understanding the technical aspects of the proposed project is critical in determining what types of characterization surveys and site assessment activities are needed.

The Draft EA should describe the type of mooring system to be used for the meteorological towers/buoys, number of anchors and cables, method for inserting the anchors and any potential benthic or water column impacts.

Onshore/Port Activities

The Draft EA should describe the onshore and offshore activities associated with the construction, storage and transport of the meteorological tower/buoys and subsequent site characterization activities. The Draft EA should describe the staging areas, existing facilities, and port(s) to be used for the proposed project, including any new construction or expansion that may be required, both onshore and offshore. The Draft EA should discuss the presence of corals in the proposed project area and describe potential impacts to them.

Water Quality

The Draft EA should also address the potential effects of project discharges on ocean water quality, including wastewater discharges from shipping/survey vessels, meteorological towers or meteorological buoys.

Air Quality

The Draft EA should provide a detailed discussion of ambient air conditions (baseline or existing conditions), National Ambient Air Quality Standards, nonattainment areas, general conformity requirements and potential air quality impacts of the project, including cumulative and indirect impacts, for each fully evaluated alternative.

The Draft EA should discuss how the meteorological tower or meteorological buoys will be powered and whether renewable energy or diesel generators will be used. The draft EA should discuss the types and size of vessels to be used for transportation/surveys, the fuels being used, number of trips and provide estimates of emissions.

Biological Resources and Habitat

Species and Habitat Protection

The Draft EA should identify all petitioned and listed threatened and endangered species and critical habitat that might occur within the project area. The Draft EA should describe site characterization and assessment activities that will be conducted in the project area to identify threatened and endangered species and critical habitat. Emphasis should be placed on the protection and recovery of species due to their status or potential status under the federal or state Endangered Species Act legislation. Analyses of impacts should include:

- Identification of the area over which biological effects may occur.
- Baseline conditions of habitats and populations of covered species. Developing sufficient description of some species may require multiple years of monitoring.
- Distribution, abundance, and associated trends of covered marine species within the area of potential effect.
- Understanding of the connectivity of the proposed wind energy site(s) with key protected populations.
- A clear description of how avoidance, mitigation and conservation measures will protect and encourage the recovery of the covered species and their habitats in the project area.

- Monitoring, reporting and adaptive management efforts to ensure species and habitat conservation effectiveness.

The Draft EA should discuss the potential collision risk or displacement for seabird species that occur in the proposed area. Flight height and spatial distribution should be monitored as this data may be useful for the development of seabird collision risk models.

The Draft EA should indicate what measures will be taken to protect important wildlife habitat areas from potential adverse effects of proposed activities. For example, areas of conservation importance and sensitivity should be identified and avoided. Grouping turbines to avoid alignment perpendicular to main flight paths or migrations corridors can also reduce fatalities.

The Draft EA should describe the type of mooring system to be used for the meteorological towers/buoys, number of anchors and cables, method for inserting the anchors and any potential entanglement risk for marine mammals or birds.

The Draft EA should evaluate the risk to marine mammals, sea turtles and fish from collision and disturbance related to vessel movements during surveying and installation activities. Timing construction to avoid sensitive periods and organizing maintenance trips to reduce disturbance from vessels should reduce risk.

The Draft EA should discuss potential activities that may result in disturbance to the seabed or corals, including installation of undersea cables and anchors.

Noise

Since many of the survey methods employed will place sound in the water, this should be discussed and described as well as any possible impacts to biological species. The Draft EA should discuss whether underwater sound levels are likely to reach dangerous levels or mask acoustic communication of marine mammals. If so, noise reduction techniques should be considered.

The Draft EA should discuss whether pile driving will be utilized or seismic surveys conducted, and, if so, describe potential impacts to marine mammals and fish.

Fishing and Recreation

The Draft EA should describe the extent that the proposed project area is currently utilized for fishing and recreation and discuss potential impacts that the proposed project might have on these activities.

Electromagnetic Fields

The Draft EA should discuss whether cables transmitting the produced electricity will also emit electromagnetic fields, and if this could affect the movements and navigation of species that are sensitive to electro-or magnetic fields.

Cumulative Impacts

Cumulative impact analyses describe the threat to resources as a whole, presented from the perspective of the resource, instead of from the individual project. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR §1508.7). Discussions of cumulative impacts are usually more effective when included in the larger discussions of environmental impacts from the action (the environmental consequences chapter), as opposed to locating cumulative impact analyses in a separate chapter.

The Draft EA should describe the methodology used to assess cumulative impacts. We recommend the methodology developed jointly by EPA, the Federal Highway Administration, and the California Department of Transportation, available at: http://www.dot.ca.gov/ser/cumulative_guidance/approach.htm. While this methodology was developed for transportation projects, the principles and steps in this guidance offer a systematic way to analyze cumulative impacts for any project.

Climate Change Effects

We recommend the Draft EA include an estimate of the greenhouse gas emissions associated with the project, qualitatively describe relevant climate change impacts, and analyze reasonable alternatives and/or practicable mitigation measures to reduce project-related GHG emissions. In addition, we recommend that the NEPA analysis address the appropriateness of considering design changes that may result in further reductions of GHGs or that provide greater resilience to foreseeable climate change impacts. The Draft EA and Final EA should make clear whether commitments have been made to ensure implementation of measures to reduce GHG emissions or to adapt to climate change impacts.

Hazardous Materials/Waste Management

The Draft EA should address potential direct, indirect and cumulative impacts of waste generation, including hazardous waste, from vessel traffic, construction and operation. The document should identify projected waste types and volumes, including from maintenance vehicles, and identify expected storage, disposal, and management. Identify the applicability of federal hazardous waste requirements. The generation of hazardous waste should be minimized.

Non-Routine Events

The Draft EA should discuss the potential impacts of non-routine events such as severe storms, ship collisions, and spills.



United States Department of the Interior



NATIONAL PARK SERVICE
Pacific West Region
333 Bush Street, Suite 500
San Francisco, CA 94104-2828

IN REPLY REFER TO:
1.A.2 (PWR-NR)

Memorandum

Date: September 7, 2016
To: Joan Barminski, BOEM Pacific OCS Regional Director
From: Chip Jenkins, Deputy Regional Director
Subject: Comments on BOEM Notice of Intent to Prepare Compliance and Call for Information and Nominations for Commercial Wind Leasing Offshore the Island of Oahu, Hawaii; MMAA104000

The National Park Service (NPS) has reviewed the Bureau of Ocean Energy Management's (BOEM) Notice of Intent (NOI) to prepare an Environmental Assessment (EA) and Call for Information and Nominations for Commercial Wind Leasing on the Outer Continental Shelf (OCS) offshore the Island of Oahu, Hawaii. The NPS appreciates the opportunity to engage and submits the attached general scoping comments for your consideration in the preparation of the appropriate compliance documents. The NPS has served on the Hawaii Renewable Energy Task Force since its inception, and was involved in the development of the Hawaii Clean Energy Programmatic EIS, as well as the Hawaii Energy Office's energy permitting guide.

The NPS joins BOEM in supporting the Department of the Interior's effort in landscape-scale planning and permitting of renewable energy projects to ensure that they are sited, constructed, and operated in a manner that is protective of the units of our National Park System, and the National Natural Landmark and National Historic Landmark programs. The NPS is also fully supportive of Hawaii's goals to achieve 100% renewable energy use. We note that no commercial wind energy projects are yet operating in U.S. waters, and no utility-scale floating turbine wind energy projects exist anywhere. In the absence of short and long-term data from existing sites, the actual short and long-term impacts associated with floating wind turbine projects are unknown, as are the efficacy of proposed mitigation measures. The NPS therefore urges a cautious approach in considering granting leases for the siting of such untested facilities in waters where nationally significant resources will be impacted.

The NPS Organic Act of 1916 requires the NPS ". . .to conserve the scenery and the natural and historic objects and wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." The NPS is concerned that the future development of utility-scale wind turbines in the Oahu Call Area may impact natural resources (including migratory birds and marine mammals), cultural resources, recreational opportunities, and

visual resources at NPS units and other lands and sites where the NPS has a stewardship responsibility.

The NPS requests to serve as a cooperating agency under the National Environmental Policy Act (NEPA) on the EA. The NPS appreciates the opportunity to provide special expertise for the Oahu Call Area with regards to project siting, design features and mitigation measures that could avoid, reduce, or offset potential impacts to NPS resources and seascapes. BOEM and the NPS have worked cooperatively together on the Atlantic Coast to site offshore wind leasing areas and protect NPS resources, and we look forward to working in the same cooperative vein in the Pacific.

The NPS thanks BOEM for consulting with us as a member of the Hawaii Task Force and for the opportunity to provide these comments. If you have any questions regarding our comments or concerns, or if you need additional information, please contact Melia Lane-Kamahele at (808)-541-2693 x729, or Lara Rozzell at lara_r_rozzell@nps.gov or (415) 623-2205.

Attachments:

General Comments

List of Oahu National Historic Landmarks

ACHP Policy Statement on the ACHP's Interaction with Native Hawaiian Organizations

NPS NRSS "Guide To Evaluating Visual Impact Assessments for Renewable Energy Projects"

cc: Patty Neubacher
Melia Lane-Kamahele
Cathleen Bailey
Daniel Kawaiaea
Rhonda Loh
Danielle Foster
Richard Gmirkin
Elizabeth Gordon
Sarah Quinn
Lara Rozzell
Mary Krueger
Denise Louie
Jay Goldsmith
Bryan Faehner
Doug Boren
Mark Eckenrode

Attachment 1

NPS Scoping Comments

Notice of Intent (NOI) to Prepare an Environmental Assessment (E A) and Call for Information and Nominations for Commercial Wind Leasing on the Outer Continental Shelf Offshore the Island of Oahu, Hawaii (Call)

September 2016

The NPS offers these comments on the NOI and the Call to help ensure BOEM is fully informed of the outstanding, federally significant resources and values that may be affected by wind energy development in the Oahu Call Area. In addition to the land and resource stewardship responsibilities at NPS units near the Call Area, the NPS also has special responsibilities to advocate for the protection of National Historic Landmarks and National Natural Landmarks, and special responsibilities for migratory birds under Executive Order 13186, and special responsibility for Marine Protected Areas under Executive Order 13158.

NPS units and other sites of national significance

Valor in the Pacific National Monument. World War II Valor in the Pacific National Monument, Pearl Harbor is located in Joint Base Pearl Harbor-Hickam. The Pearl Harbor area was designated a National Historic Landmark in 1964 for its strategic importance related to the United States' annexation of Hawai'i, and for the December 7, 1941, Japanese attack during World War II. Within close proximity to downtown Honolulu and the resort area of Waikiki, the Pearl Harbor site is the most visited destination on Oahu.

Honouliuli National Monument. Honouliuli is nationally significant for its central role during World War II as an internment site for a population that included American citizens, resident immigrants, other civilians, enemy soldiers, and labor conscripts co-located by the U.S. military for internment or detention.

Kalaupapa National Historical Park. When Hansen's disease (leprosy) was introduced to the Hawaiian Islands, King Kamehameha V banished all afflicted to the isolated Kalaupapa peninsula on the north shore of Molokai. Since 1866, more than 8000 people, mostly Hawaiians, have died at Kalaupapa. Once a prison, Kalaupapa is now refuge for the few remaining residents who are now cured.

In addition to the abundance of cultural resources, Kalaupapa National Historical Park is also home to an abundance of geological, terrestrial, aquatic, and marine resources. The plants and animals identified in the park comprise nearly 30 federally listed threatened and endangered species. Kalaupapa is one of the 34 NPS units in the National System of Marine Protected Areas (MPA's), as the Park includes marine waters within the boundary. Significant marine resources include monk seal, humpback whale, green sea turtle, and well-preserved coral reef communities and fish resources. Geological resources within the park include Molokai north shore cliffs that are some of the highest sea cliffs in the world. The intervening valleys, volcanic

crater and crater lake, lava tubes, caves, and offshore islets provide numerous habitats from ohi'a rain forest to coastal spray areas to freshwater streams.

In addition to the National Historical Park designation, Kalaupapa Leprosy Settlement National Historic Landmark was designated in 1976, and the North Shore Cliffs of Molokai were listed as a National Natural Landmark in 1972.

Diamondhead Natural National Landmark. The unique profile of Diamond Head (Lē'ahi) sits prominently near the eastern edge of Waikiki's coastline. Hawaii's most recognized landmark is known for its historic hiking trail, stunning coastal views, and military history. Diamond Head State Monument encompasses over 475 acres, including the interior and outer slopes of the crater. A portion of the Monument was designated a National Natural Landmark (NNL) in 1968. The NNL program was established to encourage and support the conservation of sites that illustrate the nation's geological and biological history, and to strengthen the public's appreciation of America's natural heritage. NNL's are selected for their outstanding condition, illustrative value, rarity, diversity, or value to science and education. The NPS administers the NNL program, reports on the condition of the properties, acts as an advocate for protection, and supports landowners and managers in their efforts to protect these nationally significant sites.

National Historic Landmarks Oahu holds 15 National Historic Landmarks (NHL) in addition to Pearl Harbor (see attached). The NHL program, established by the Historic Sites Act of 1935, recognizes historic buildings, sites, structure, objects, or districts that represent an outstanding aspect of American history and culture. NPS, on behalf of the Secretary of the Interior, is the repository of information on the location, boundaries, significance, integrity, and current condition of NHLs. The NPS administers the NHL program, reports on the condition of the properties, acts as an advocate for protection, and supports landowners and managers in their efforts to protect these nationally significant sites. Section 110 of the National Historic Preservation Act (NHPA) identifies lead agency and Consulting Party responsibilities for adverse impacts to NHL's. NPS recommends early coordination during development of the Draft EA to coordinate NHL recognition, generate project alternatives, and protect resources.

Marine Protected Areas. Executive Order 13158 "Marine Protected Areas" cites the NPS Organic Act and directs agencies "to enhance or expand protection of existing MPAs". The NPS is mindful of the Executive Order's directive to "avoid harm" to the natural and cultural resources protected by MPA's. The NPS stewards a number of MPA's protecting resources that may be impacted by wind facility development and operation in the Oahu Call Area. For instance, the Kalaupapa Marine Protected Area frequently hosts humpback whales that also use the Hawaiian Islands Humpback Whale National Marine Sanctuary and the Call Area. Recent research (Block et al. 2011) indicates that apex marine predator white sharks, the federally endangered leatherback sea turtle, the black-footed albatross, and possibly other species move among Hawaii waters and NPS MPAs in the California Current Large Marine Ecosystem. Because the impacts upon these species are unknown in the absence of existing floating wind turbine projects and related research, the NPS recommends a precautionary approach.

Cooperating agency relationship

The NPS requests to become a cooperating agency on the EA process, as described in the Federal Register notice. The NPS supports BOEM's approach to landscape (seascape) scale planning, in accordance with Secretarial Order 3330. The NPS is currently developing guidance for Department of Interior personnel concerning the management of cultural resources and

mitigation of adverse effects as part of a broader approach to managing public lands and waters at the landscape (seascape) scale, and offers special expertise in cultural resource management in addition to our specific cultural resources responsibilities in Hawaii.

In addition to agency coordination during the development of the EA and Record of Decision, the NPS recommends that BOEM create a Technical Advisory Committee or similar body for future oversight of the Call Area.

Considerations for Hawaiian cultural resource protection under NEPA and NHPA

Hawaiian cultural resource framework. The Native Hawaiian perspective defines cultural and natural resources differently than the commonly used federal demarcations between the two, and includes a biocultural continuum. Recent work by the Pacific Island Climate Change Cooperative (PICCC) Culture and Community Working Group (CCWG) defines a biocultural resource as: "Any physical, biological, and human elements that strengthen a people's evolving relationship with a defined place, and maintain their unique set of customs, beliefs, language, traditional knowledge, objects and built environment." Another definition is "the tangible and intangible cultural heritage relating to human interaction with the natural environment, and the organisms, ecosystems, and geophysical components within that environment which are essential to such cultural heritage."

The Advisory Council for Historic Preservation (ACHP) has recognized the unique status of Native Hawaiian traditional cultural knowledge, beliefs, and practices and recognizes their value in the understanding and preservation of historic properties in Hawaii. The NPS recommends that BOEM coordinate early and closely with Native Hawaiian Organizations (NHO's) as part of complying with Section 106 of the National Historic Preservation Act for the Oahu Call Area because of Native Hawaiians' perspective on their relationship to the land (and sea), to nature's forces that affect the land (and sea), and to the *kuleana* (responsibility) of all Native Hawaiians to be *pono* (proper as in follow correct or proper procedure) as Native Hawaiians. The NPS also recommends that BOEM follow the ACHP policy (attached) on consultation with NHO's in the Section 106 review process.

In addition to the biocultural continuum, another Hawaiian perspective influences landscape-scale perspective and management. Traditional Cultural Properties, because they are identified and evaluated with the National Register of Historic Places (NRHP) criteria, tend to be physical, bounded places that a land manager can recognize as a kind of historic property. But in Hawaiian culture, intangible resources may be just as important as tangible resources, the small as important as the monumental, and all are sacred. Tangible historic properties represent only some aspects of culture, and other intangible aspects of culture may also be of vital importance in maintaining the integrity of a social group. The NPS urges BOEM to fully consider tangible and intangible cultural resources in planning and decision making for the Oahu Call Area.

Unique Hawaiian land and sea management system. Over the generations, the ancient Hawaiians developed a sophisticated system of land and resource management which included larger districts and smaller regions. Unlike western land and ocean use practices, the 'Aha Moku system is based on observational knowledge that provides a management system of proper stewardship of both land and ocean resources. Land use was determined by the availability of *wai ola* (life-giving water). Hawaiian terms for land divisions such as *mokupuni*, *moku*, and *ahupua'a* are given to these land and ocean areas. Each district is known by its natural features, place names and environmental conditions. Specific areas have diverse natural resources and are therefore managed in different ways. The 'Aha Moku system is the foundation which provides *kānaka maoli* (Native Hawaiians) a lifetime reverence for self-

sustainability. For *kānaka maoli*, this system continues today and into the future. *Wao Akua*, *Wao Kele*, *Wao Kanaka*, *‘Ae Kai*, *Kai Malolo*, and *Kai Uli* are names for zones of different sea depth, identified in Hawaiian culture to assure that proper practices, uses and care are established within each *moku/ahupua‘a*.

Of all the land divisions, perhaps the most significant management unit was the *ahupua‘a*. *Ahupua‘a* may be generally compared to pie-shaped wedges of land that extended from the ocean fisheries (the wide section) fronting the land unit, to the mountains (the narrow section) or some other feature of geological significance such as a valley, hill, or crater. The boundaries of the *ahupua‘a* were generally defined by the topography and cycles and patterns of natural resources occurring within the lands. The *ahupua‘a* are in contrast to the modern system of land management which generally draws a boundary along the water line rather than perpendicular to the water lines. The NPS recommends consultation with NHO’s to determine the relationship between land and sea areas within *ahupua‘a* that may be affected by wind turbine construction in the Oahu Call Area.

The Hawaiian trail system. Throughout the years of late prehistory, A.D. 1400s-1700s, and through much of the 1800s, transportation and communication within the Hawaiian kingdom was by canoe and by major trail systems.

Established in 2000 for the preservation, protection and interpretation of traditional Native Hawaiian culture and natural resources, Ala Kahakai National Historic Trail (NHT) is a 175 mile corridor and trail network of cultural and historical significance. The NHT traverses through hundreds of ancient Hawaiian settlement sites and over 200 *ahupua‘a* (traditional sea to mountain land divisions). While the land-based portion of the Ala Kahakai NHT may not be directly affected by wind turbine facilities in the Oahu Call Area, the NPS recommends consultation with NHO’s regarding traditional inter-island canoe routes that were functional extensions of the land-based NHT.

For background information on existing conditions, the NPS recommends use of the study “Report Hiala-17K Nā Ala Hele Ma Kai O Kohala Hema (The Coastal Trails Of South Kohala) Archival-Historical Documentary Research, Oral History–Consultation Study, And Limited Site Preservation Plan Kawaihae-‘Anaeho‘Omalu Trail Section (attached).

Other NPS resource responsibilities

Migratory Bird Protection. Executive Order 13186 states:

Migratory birds are of great ecological and economic value to this country and to other countries. They contribute to biological diversity and bring tremendous enjoyment to millions of Americans who study, watch, feed, or hunt these birds throughout the United States and other countries. The United States has recognized the critical importance of this shared resource by ratifying international, bilateral conventions for the conservation of migratory birds. Such conventions include the Convention for the Protection of Migratory Birds with Great Britain on behalf of Canada 1916, the Convention for the Protection of Migratory Birds and Game Mammals-Mexico 1936, the Convention for the Protection of Birds and Their Environment- Japan 1972, and the Convention for the Conservation of Migratory Birds and Their Environment-Union of Soviet Socialist Republics 1978.

The Executive Order then directs federal agencies to "develop and implement a Memorandum of Understanding (MOU) with the Fish and Wildlife Service (Service) that shall promote the conservation of migratory bird populations." As required in Executive Order 13186, the NPS has signed and is implementing an MOU with the U.S. Fish and Wildlife Service to promote conservation of migratory birds. The MOU requires that NPS protect natural habitats of migratory bird species within park boundaries and "address transboundary stressors such as air, noise, energy development, and light pollution that may impact those habitats."

The NPS recommends that migratory bird fly-ways be identified and considered in the planning process, and that BOEM assess risks to migratory birds with due caution, given the precedent-setting size of wind turbine facilities contemplated in the Call Area. In addition, consideration should extend to federally listed bird species, regardless of whether or not they are considered under the Migratory Bird Treaty Act.

Several potentially affected bird species are federally listed as endangered, threatened or candidates for listing in accordance with the Endangered Species Act. Species may also be listed by the State of Hawaii, in the Migratory Bird Treaty Act, or identified under other management plans as needing special protection. Many of these species have been documented as being negatively impacted (direct strikes) by wind turbines. Species that may be impacted should be thoroughly researched and discussed with the U.S. Fish and Wildlife Service, the State of Hawaii, and other appropriate agencies and organizations. Appropriate mitigation measures should be developed to minimize any impacts. Offshore islets and other key areas, such as Kaena Point, are used for breeding, but seabirds also typically traverse large areas of ocean for feeding and could be impacted by structures placed in formerly open ocean, particularly when flying in poor weather, dusk/dawn light conditions, or at night. Protected species that may transit the area including but are not limited to, wedge-tailed shearwater, sooty tern, Bulwer's petrel, Laysan albatross, red-footed booby, and many others (<https://oahuseabirdgroup.org/about-seabirds/>).

Any compensatory mitigation measures must be adequate to counter the anticipated take. Efforts to bolster reproduction for impacted species may need to be quite substantial due to the delayed age at first breeding for some of the listed species, as well as the low annual reproductive rate and long lifespan of many of the species, and the resultant multiple years of delay before improvements in numbers may manifest themselves in the breeding populations. Additionally, the NEPA process must address how to monitor and quantify results of minimization and mitigation efforts.

The NEPA process will evaluate the adequacy of avoidance, minimization and compensation actions at least in part through population and spatial modeling. Some data may only be available through management agency offices, including Hawaii national parks. Therefore, it is highly recommended that these offices be contacted for information. We suggest thoroughly testing all models and seeking their independent review by other knowledgeable modelers. Additionally, to facilitate informed public review and comment, we recommend identifying all sources of input data and using "plain language" to clearly explain the rationale for model selection (if applicable) and the assumptions and limitations of each model used.

The NEPA process should provide avenues for information feedback during the term of the wind lease so future information (including data accumulated and analyzed during the course of the lease) can inform and improve models and ongoing management and mitigation efforts. To this end, the process should include provisions for more formal periodic reviews of plan effectiveness (e.g., at 5 or 10 year intervals).

If any night lighting is necessary in addition to FAA-required turbine lighting, we recommend that dark sky lighting protocols be followed. This will protect threatened and endangered animals such as the green sea turtle and hawksbill sea turtle, as well as nocturnal seabirds that may be transiting the area, such as the endangered Hawaiian petrel, the threatened Newell's shearwater, and the band-rumped storm-petrel (candidate for listing), just to name a few. Seabird species fly to and from nesting colonies after dark and could be disoriented by artificial lights that are not properly shielded. In order to protect night skies and night-active animal species, it is recommended that only full cut-off, amber (560 nm or longer wavelength), downward directional lighting be considered for this project if lighting is necessary.

Marine Mammals and Sea Life. The NPS recommends analysis of tangling risk for anchoring lines from floating wind turbines, as well as analysis of potential undersea community composition changes due to the presence of hundreds of new anchoring lines.

The NPS is also concerned about undersea noise effects on marine mammals and other sea creatures. For marine mammals, as well as for some other aquatic animals, sound is the primary means of learning about the environment and of communicating, navigating, and foraging. Human-generated noise that harms marine mammals or significantly interferes with their normal activities is an issue of increasing concern (Weilgart 2007). Noise and its potential impacts have been regulated since the passage of the Marine Mammal Protection Act of 1972.

A number of factors affect the response of marine mammals to sounds in their environment: the sound level and other properties of the sound, including its novelty; physical and behavioral state of the animal; and prevailing acoustic characteristics and ecological features of the environment in which the animal encounters the sound. Critical issues about what determines effects of and responses to intense transient sounds and what are the effects of long-term anthropogenic sound on individuals and populations remain unanswered. The indirect effects of anthropogenic sound on marine mammals via effects on their predators, prey, and other critical habitat elements are largely uninvestigated. The NPS recommends careful analysis of potential noise sources and effects from construction, from wind turbine operation including anchor cable noise generation, and from decommissioning.

Visual Resources. On the Atlantic Coast, BOEM included coordination with the NPS at the planning and the lease sale stages for offshore wind. The NPS requests a similar approach to coordination for the Oahu Call Area, including the opportunity for NPS personnel to give presentations to potential lessees at upcoming meetings. The NPS Resource Report "Guide to Evaluating Visual Impact Assessments for Renewable Energy Projects" (attached) details appropriate visual simulations and assessments for determining impacts to NPS resources. The NPS is available to discuss the relevant sections of the document and to identify Key Observation Points for visual resource analysis. The NPS was also involved in BOEM's "Gulf Island National Seashore Information to Lessees" (ITL). Under the ITL, BOEM reviews any lessee's plans in the area of concern to determine if visual impacts are expected to cause serious harm and if any additional mitigative action is required. Avoidance and minimization measures that could be applied at the plan stage could include requested changes in location, modifications to design or direction of proposed structures, pursuing joint use of existing structures on neighboring blocks, changes in color design, or other plan modifications. This is consistent with the NPS proposed management strategy for maintaining optimal night sky viewing conditions, which include cooperating with partners to minimize intrusion of artificial light into the night scene, and evaluating the impacts on the night sky caused by offshore wind facilities.

The 750-foot wind turbines proposed by Alpha Wind would be visible for up to 62 miles. The NPS requests that BOEM coordinate with the NPS in advance of Draft EA publication to develop visual perception surveys as part of the preparation of the EA, as applied to visitors to national park units, National Historic Landmarks, and National Natural Landmarks.

When considering potential impacts and methods of assessing the visual impact at night, an analysis must account for how the eye sees differently in low light. For example, at night, foveal vision (pertaining to the center of focus) is greatly diminished and peripheral vision is enhanced. As a result, the visual scene is dominated by objects off the center of focus. A flashing beacon, such as those typically installed on wind turbines, is easily noticed as much as 80° off axis of sight. Because people tend to rely more heavily on peripheral vision at night, the portion of the horizon affected by the wind turbines in terms of night time visibility will seem larger. Basically, regardless of where a visitor looks (in the general direction of the turbines), their peripheral vision will pick up the light from the turbines.

Flashing lights will draw a visitor's attention to a greater degree than a constant light source. The flash of a strobe will be perceived as motion. Humans are sensitive to perceived motion in their environment. To enjoy the night skies, visitors require low light levels that allow full adaptation to scotopic (night) vision. Exposure to turbine anti-collision lighting can disrupt this process. The simulations depict red obstruction lighting. Although some bird species can be disoriented by red lights, human scotopic vision is less disrupted by red light. However, human perception of flashing beacons in this area will present a challenge to mitigate that may not be entirely successful given the lighting patterns that safety considerations may dictate.

Impacts would not be limited to wind facility operation. As construction would likely be ongoing throughout the night, substantial impacts could be expected from construction lighting under standard practices. The reflective nature of water exacerbates the scattering of construction lighting more so than an equivalent project on land.

Movement of blades and sun reflection would impact daytime and nighttime visibility. Just as one cannot fully understand the effects of more than 130 red lights flashing in unison thirty times a minute at night without seeing the videos, similarly, the visual effects of movement of the blades and sun glare cannot be understood without an animation. NPS recommends such animations are included in future visual simulation studies in this area.

It is very important that the limitations of using visual simulations be highlighted. No matter the quality of the simulation when those components are added that they are based on photographs or videos, and, ultimately, what they simulate is a photograph or a video of the proposed project, not the actual visual experience a viewer would have in a real landscape looking at the real project (NZILA Education Foundation 2010; Scottish Natural Heritage 2006). Because of the wide range of viewing conditions under which they will be viewed - despite the proper instructions - it should be qualified that the simulations do not necessarily represent a true visual experience. Because of limitations inherent in the photographic medium, simulations are approximations of what the project would look like and are not the same as "being there." Indeed, observations made by Benson (2005) suggest that simulations of proposed wind farms in VIAs often underestimated the impacts compared with field observations of the built projects, in part, because "the windfarm often looked nearer, more visible, and more conspicuous than the photomontage predicted."

NPS comments here have mostly focused on impacts to humans. Impacts to wildlife from changes in the night sky are also of concern.

Infrastructure

Transmission. Early proposals for Oahu-area offshore wind generation included maps showing potential undersea electrical transmission through Pearl Harbor. NPS responsibilities at Valor in the Pacific National Monument include protection of the sunken U.S.S. Arizona. The NPS recommends that BOEM analyze the potential impacts upon Valor in the Pacific National Monument and the Arizona Memorial, if undersea transmission were constructed through Pearl Harbor.

Transmission lines and associated structures and equipment, on land, above, and below the ocean's surface, could also impact special status species, including, but not limited to, Hawaiian hoary bat, green sea turtle, hawksbill sea turtle, humpback whale, and Hawaiian monk seal. All special status or otherwise protected species should be considered and appropriate mitigation measures developed to protect the species. Monitoring should include monitoring above and below the water for impacts (e.g. strikes or other impacts above water or with land-based equipment, and potential changes to fish aggregations, changes in prey base, etc. in the ocean).

For aboveground transmission lines that may be associated with landfall of the transmission lines, the NPS can provide a very good estimate of site specific ambient sound level data, via a geospatial ambient sound model for the entire continental U.S., as well as Alaska and Hawaii. This information is publicly available at the following website: <https://irma.nps.gov/DataStore/Reference/Profile/2217356>.

Transmission construction, terrestrial and marine, brings concerns for invasive species in Hawaii's uniquely isolated and fragile ecosystems. We recommend BOEM recognize Hawaii's unique ecosystems in choosing best management practices for project specifications to minimize the potential for introduction and spread of invasive species that could adversely impact special status or other species. Best management practices should include sanitation procedures for ensuring vehicles, equipment, and materials are free of invasive species, including invasive ants (such as, little fire ants and others), coqui frogs, fungus, invasive aquatic species, and invasive plants. Special care regarding invasive species should apply to both the terrestrial and ocean components of the project.

Port Construction Facilities. The construction or conversion of needed industrial port facilities to assemble and install wind turbines could create significant change to local communities, and to the visitor experience for visitors to NPS units. The NPS requests that BOEM work with NPS to analyze likely changes to the visitor experience.

Local Organizations and Resources

The NPS has found partner work with the following organizations valuable, and recommends that BOEM actively work with these partners for further information on resources likely to be impacted.

- The Pacific Island Climate Change Cooperative - a self-directed conservation alliance made up of local, state, federal, indigenous, and non-governmental member organizations from the US-Affiliated Pacific Islands.
- The Polynesian Voyaging Society - Founded on a legacy of Pacific Ocean exploration, the Polynesian Voyaging Society seeks to perpetuate the art and science of traditional Polynesian voyaging and the spirit of exploration through experiential educational

programs that inspire students and their communities to respect and care for themselves, each other, and their natural and cultural environments.

The NPS has participated in a number of initiatives to collect Hawaiian knowledge relevant to renewable energy development, and recommends careful review of these existing collections to inform the present analysis. Useful resources include:

- 2014 Ocean Uses Mapping Workshop for the Hawaii Ocean Uses Atlas project, a collaborative effort between NOAA, the State of Hawaii Office of Planning and the Bureau of Ocean Energy Management (BOEM).
- Meeting notes of the Hawaii Renewable Energy Task Force
- Hawaii Clean Energy Programmatic Environmental Impact Statement, completed by the Department of Energy
- Hawaii Clean Energy Permitting Guide, completed by the Hawaii State Energy Office.

References

Benson, J. 2005. "The Visualization of Wind Farms." In *Visualization for Landscape and Environmental Planning: Technology and Applications*, edited by I.D. Bishop and E. Lange, 184-192. Oxford: Taylor & Francis.

Block, B. A., Jonsen, I. D., Jorgensen, S. J., Winship, A. J., Shaffer, S. A., Bograd, S. J., Hazen, E. L., Foley, D. G., Breed, G. A., Harrison, A. L., Ganong, J. E., Swithenbank, A., Castleton, M., Dewar, H., Mate, B. R., Shillinger, G. L., Schaefer, K. M., Benson, S. R., Weise, M. J., Henry, R. W., & D. P. Costa. Tracking apex marine predator movements in a dynamic ocean. *Nature* 475:86-90.

ER - NZILA Education Foundation (New Zealand Institute of Landscape Architects Education Foundation). 2010. Best Practice Guide: Visual Simulations BPG 10.2, accessed June 7, 2013, <http://www.nzila.co.nz/media/53263/vissimbpg102lowfinal.pdf>.

Scottish Natural Heritage (Agency) Staff. 2006. *Visual Representation of Windfarms: Good Practice Guidance*. Perth, Scotland: Scottish Natural Heritage.

Weilgart, L.S. 2007. The impacts of anthropogenic ocean noise on cetaceans and implications for management. *Can. J. Zool.* 85:1091-1116.



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
560 N. NIMITZ HWY., SUITE 200
HONOLULU, HAWAII 96817

September 7, 2016

Ms. Abigail Hopper
Director
Bureau of Ocean Energy Management
United States Department of the Interior
5600 Woodland Rd.
Sterling, VA 20166

Re: Comments pertaining to the Bureau of Ocean Energy Management (BOEM) Notice of Intent to Prepare and Environmental Assessment for Wind Leasing and Site Assessment Activities on the Outer Continental Shelf Offshore the island of O‘ahu.

Aloha Ms. Hopper:

The Office of Hawaiian Affairs (OHA) is providing comments on the aforementioned offshore wind energy initiative as published in the Federal Register on June 24, 2016.

OHA is the constitutionally established body responsible for protecting and promoting the rights of Native Hawaiians. Hawai‘i law mandates OHA to “[s]erve as the principal public agency in the State of Hawai‘i responsible for the performance, development, and coordination of programs and activities relating to native Hawaiians and Hawaiians; . . . and [t]o assess the policies and practices of other agencies impacting on native Hawaiians and Hawaiians, and conducting advocacy efforts for native Hawaiians and Hawaiians.” Hawai‘i Revised Statutes § 10-3.

OHA sits on the Hawai‘i Intergovernmental Renewable Energy Task Force, a non-decisional, intergovernmental group comprised of Federal and state officials and elected local government representatives set up to coordinate and share information on the proposed offshore renewable energy-related activities in Federal waters off Hawai‘i.

Ms. Abigail Hopper, Director, BOEM

September 7, 2016

Page 2

OHA strongly encourages BOEM to ensure that prospective leases and the companies that seek them, be required to undertake early, substantive, and meaningful consultation with our Native Hawaiian community.

Native Hawaiians have a strong affinity to the ocean through a myriad of constitutionally protected rights to subsistence, cultural and religious practices, known as the domain of the Native Hawaiian god, or akua, Kanaloa.

It is imperative that not only governmental bodies mandated with consultation under Federal or State law, undertake such early consultation, but that the private corporations and entities who will directly impact the ocean and the abilities of our Native Hawaiian beneficiaries to exercise their rights conduct meaningful consultation as well.

We look forward to further conversations and exchanges as this process moves forwards and matures.

Mahalo for the opportunity to comment. Should you have any questions, please contact our Compliance Enforcement Manager, Kai Markell at (808) 594-0220 or by email at kaim@oha.org. Mr. Markell also currently serves as OHA's representative on the Hawai'i Intergovernmental Renewable Energy Task Force.

'O wau iho nō me ka 'oia 'i'o,



Kamana'o pono M. Crabbe, Ph.D.
Ka Pouhana, Chief Executive Officer

KC:km

DAVID Y. IGE
GOVERNOR OF
HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

August 31, 2016

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA
FIRST DEPUTY

JEFFREY T. PEARSON, P.E.
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

MEMORANDUM

To: Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands

From:  David G. Smith, Administrator
Division of Forestry and Wildlife (DOFAW) *DBS*

Subject: Comments on Potential Commercial Leasing for Wind Power on the Outer Continental Shelf

RECEIVED
OFFICE OF CONSERVATION
AND COASTAL LANDS
2016 SEP 16 A 10: 04
DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

Thank you for the memo received on July 13, 2016 and the opportunity to comment on the Department of Interior's Bureau of Ocean Energy Management (BOEM) Notice of Intent to prepare an Environmental Assessment on the Potential Commercial Leasing for Wind Power on the Outer Continental Shelf of O'ahu. The proposed action would result in the issuance of one or more commercial wind energy leases and approval of site assessment activities on those leased areas. The two areas being considered for commercial leasing are located approximately 7–24 nautical miles west of Ka'ena Point and 7–35 nautical miles south of Barbers Point on the island of O'ahu. All three proposed actions would require the use of the State Submerged Land to transmit power through the 3-mile conservation zone surrounding the island of O'ahu.

The Hawaiian Islands are home to populations of native seabirds and waterbirds that are known to transit the ocean for migration and/or foraging trips, of which many of these species are state and/or federally-listed as threatened and endangered. Included are the listed Hawaiian petrel (*Pterodroma sandwichensis*), Newell's shearwater (*Puffinus newelli*), Band-rumped stormpetrel (*Oceanodroma castro*), Hawaiian coot (*Fulica alai*), Hawaiian stilt (*Himantopus mexicanus knudseni*), Hawaiian duck (*Anas wyvilliana*), White tern (*Gygis alba*) and many other non-listed native species including the Laysan albatross (*Phoebastria immutabilis*), Black-footed albatross (*Phoebastria nigripes*), Pacific golden plover (*Pluvialis fulva*), Wedge-tailed shearwater (*Ardenna pacifica*), Bulwer's petrel (*Bulweria bulwerii*), as well as several species of terns, boobies and tropic birds.

Wind turbines are known to kill Hawaiian seabirds and waterbirds in Hawai'i as has been documented from land-based wind energy facilities throughout the State. DOFAW believes that wind power off the island of O'ahu will similarly impact transiting seabirds and waterbirds over the open ocean. DOFAW strongly recommends conducting extensive surveys at potential lease locations for seabirds and waterbirds that may be currently transiting the area. DOFAW is also very concerned that the infrastructure of the proposed turbines in the water could create underwater habitat that may attract foraging seabirds to the area once built, there-by creating a potential risk or even a sink to these populations.

Extensive monitoring under wind turbines is necessary to determine impacts to species from project related activity and infrastructure. On land, these monitoring techniques involve transect searches underneath turbines that are accompanied by trials to determine scavenging rates and searcher efficiency in order to accurately estimate project related impacts. DOFAW is concerned that projects over the ocean do not allow for such monitoring and species-specific impacts may be too difficult to assess.

Furthermore, infrastructure related to the proposed project will require the use of State lands to integrate and transmit power to O'ahu's electrical grid system. This may include the construction of cables, powerlines, and other infrastructure. DOFAW requests that project proponents consult with DOFAW to address the potential for seabird collisions with any new powerlines or other infrastructure that would be constructed as a result of the project. If project related activities have the potential for take of a listed species that cannot be avoided, Hawai'i Revised Statute Chapter 195D allows an applicant to apply for an incidental take license accompanied by an approved habitat conservation plan. Furthermore, other permits may be required for project related activities on State lands. We therefore request that the State continue to be consulted on the development of this project.

DOFAW requests that BOEM continue to consult and communicate with DOFAW throughout the planning process to determine how native seabirds and waterbirds may be impacted by this project and to evaluate any relevant information or surveys that DOFAW currently has available to make an informed assessment on the proposed project. DOFAW also requests that BOEM share results of ongoing biological studies that have been or will be conducted related to the proposed facilities.

DOFAW appreciates the opportunity to provide comments and requests that BOEM continue to seek input from the DLNR DOFAW on impacts to wildlife. If you have any questions, please contact James Cogswell, Wildlife Program Manager, at 808-587-4187.

DAVID I. IGE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF AQUATIC RESOURCES
1151 PUNCHBOWL STREET, ROOM 330
HONOLULU, HAWAII 96813

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
NEKO KALUHIWA
FIRST DEPUTY
JEFFREY T. PEARSON P.E.
DEPUTY DIRECTOR - WATER
AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
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CONSERVATION AND RESOURCES ENVIRONMENT
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FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAIHOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

Date: 8/3/2016
DAR # 5342

MEMORANDUM

TO: Bruce S. Anderson, DAR Administrator *BSA*
DATE: Aug 5, 2016
FROM: Catherine Gewecke, Aquatic Biologist *CG*

SUBJECT: Request for Comments for the Call for the Potential Commercial Leasing for Wind Power on the Outer Continental Shelf

Comment	Date Request	Receipt	Referral	Due Date
	7/13/2016	7/14/2016	7/22/2016	8/4/2016

Requested by: DLNR-Office of Conservation of Coastal Lands (OCCL)

Summary of Proposed Project

Title: Bureau for Ocean Energy Management (BOEM) Call for Potential Commercial Leasing for Wind Power on the Outer Continental Shelf

Project by: Bureau of Ocean Energy Management (BOEM)

Location: Outer Continental Shelf, Offshore the Island of Oahu, Hawaii

Brief Description: This Request for Comments from the Office of Conservation of Coastal Lands (OCCL) for the Call for Potential Commercial Leasing for Wind Power on the Outer Continental Shelf includes the Department of the Interior's Bureau of Ocean Energy Management (BOEM):

- (1) Notice of Intent to Prepare an Environmental Assessment;
- (2) Call for Information and Nominations for Commercial Leasing for Wind Power on the Outer Continental Shelf, Offshore the Island of Oahu, Hawai'i [PLEASE see page 41341-

Requested Information from Interested or Affected Parties *]; and
(3) A Map of the Oahu Call Out Area.

The Division of Aquatic Resources (DAR) has received a request for comments from the Office of Conservation of Coastal Lands (OCCL) for the call for the Potential Commercial Leasing for Wind Power on the Outer Continental Shelf by the Department of the Interior's Bureau of Ocean Energy Management (BOEM). BOEM is currently processing three unsolicited lease requests for floating wind energy projects offshore Oahu, Hawaii. The Energy Policy Act of 2005 granted BOEM authority to issue leases for renewable energy projects on the Outer Continental Shelf (OCS), which begins 3 nautical miles offshore the islands of Hawaii. Unsolicited lease requests provide an avenue for developers to seek a federal lease for the development of renewable energy projects.

Generally, the unsolicited lease requests submitted to BOEM propose to lease areas offshore Oahu for the purposes of developing wind energy facilities with a capability of generating approximately 400 MW of electricity. The unsolicited lease requests describe the wind facilities as being based on floating wind technology. Conceptually, the lease requests describe transmission of offshore wind power to the island of Oahu via undersea cable. The three unsolicited lease requests are as follows:

- AW Hawaii Wind, LLC (AWH) proposes to lease an area approximately 17 miles south of Diamond Head in water depths of approximately 300-700 meters (984-2,296 feet). The proposed lease area is 12,099 acres (4,896 hectares).
- AWH has also proposed to lease an area approximately 12 miles northwest of Kaena Point in water depths of approximately 700-1,000 meters (2,296-3,280 feet). The proposed lease area is 11,387 acres (4,608 hectares).
- Progression Hawaii Offshore Wind, Inc. (Progression) has proposed to lease an area approximately 9 miles southeast of Barber's Point in average water depths of 500-1,000 meters (1,640-3,280 feet). The proposed lease area is 77,440 acres (31,338 hectares).

The Call also will ask the public and interested stakeholders to comment and provide information about site conditions and other uses of the requested areas relevant to the potential impacts of leasing and development in the Call area, or portions thereof. BOEM will also issue a Notice of Intent (NOI) to prepare an Environmental Assessment (EA) as required by the National Environmental Policy Act (NEPA) at the same time as the Call. The EA will analyze the site characterization and assessment activities required to collect site-specific data of any proposed Call areas.

BOEM will use the information and expressions of interest received during the Call comment period to gather information about potential multiple uses and environmental concerns and determine whether additional interest exists in leasing in the Call area

Each project proposes an offshore floating wind energy facility with a capacity of approximately 400 megawatts (MW) of renewable energy. The energy generated by the projects would be transmitted to Oahu by undersea cables.

DAR Comments:

Impact to aquatic resources during the staging, transit, deployment, and post-installment phases or areas of the floating wind turbines is the main concern on Division of Aquatic Resources (DAR). DAR requests evaluation and review of the abilities to maintain buoyancy of the components during the staging, transit, deployment, and post-installment phases or areas, to minimize impact to benthic organisms, and maintaining entanglement-free structures of the components during the staging, transit, deployment, and post-installment phases or areas to minimize potential for entanglement of mobile marine organisms. Additionally DAR would request evaluation and review of the potential impact to benthic marine organisms from the total foot print of the wind turbine arrays and the potential impacts caused by the entry or exit locations of the power transmission cables at the shoreline or in shallow reef area and any other structures that may be installed to facilitate these cables in shallow reef areas.

The following are the potential impacts to aquatic organisms that the Call for the proposed Commercial Leasing for Wind Power on the Outer Continental Shelf should take into consideration:

EA considerations:

1. The potential for entanglement or impact of migrating marine mammals or other marine organisms through the use of vertical cables to anchor the floating wind turbines to the benthic substrate and lateral cables (1 mile long each) to transmit power between the floating wind turbines.
2. The potential for impact to photic and mesophotic benthic communities through use of “drift anchors” for wind turbines and through the deployment of ocean floor cables for power transmission.
3. The potential for impact to nearshore benthic organism communities in the entry or exit locations of the power transmission cables at the shoreline or in shallow reef areas and any other structures that may be installed to facilitate these cables in shallow reef areas (e.g.: excavation of receiving pits for breakout points for the transition of subterranean cables to above-ground cables or similar structures).
4. The potential for impact of floating wind turbine operational noise on marine mammal echolocation, communication, navigation and open-water activities of marine mammals.
5. The potential for impact to regular activities and behaviors of marine mammals including, migration, feeding, socializing and mating.
6. The potential for impact on commercial fishermen’s fishing grounds in the event that the access to the floating wind turbine areas become restricted to the public due to security concerns.

7. The potential for wind turbines to break free during tsunami, hurricane or tropical storms and subsequent impacts to aquatic resources (including the potential cumulative impact of 50 + turbines from three different potential areas breaking free).
8. A comprehensive biological assessment of the benthic environment in the proposed array areas, in the areas where power transmission cables will traverse and in the entry and exit areas of near-shore habitat where other power transmission structures may be installed.

Mitigation for Entanglement, Impact to Benthic Organisms and Potential Reduction of Fishing Grounds Area

DAR requests that evaluation and review of mitigative measures and operational contingency plans for staging, transport, deployment and post installment activities proposed be included in the environmental assessment. DAR recommends that BOEM require applicants to guarantee that mitigative measures and best management practices will be employed to avoid potential entanglement of marine turtles, cetaceans, monk seals or any other marine organism or potential impact to marine resources through contact.

Thank you for providing us the opportunity to review and comment on the call for the proposed leases and projects. Should there be any changes, amendments or modifications to the current plans, DAR requests the opportunity to review and comment on those changes.

DAVID Y. IGE
GOVERNOR OF
HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA
FIRST DEPUTY

JEFFREY T. PEARSON, P.E.
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AQUATIC RESOURCES
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FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

REF:OCCL:TM

O'ahu Offshore Leasing

Regional Director
BOEM Pacific OCS Region
760 Paseo Camarillo, Suite 102
Camarillo, CA 93010

SEP - 2 2016

SUBJECT: Notice of Intent to Prepare an Environmental Assessment for Commercial Wind Leasing and Site Assessment Activities on the Outer Continental Shelf Offshore of the Island of O'ahu

Dear Regional Director:

The Department has reviewed the Federal Register Notice and for further background, the unsolicited applications of Progression Hawai'i Offshore Wind Inc. and AW Hawai'i Wind, LLC, for potential leasing of the outer continental shelf offshore of O'ahu, for wind power development. Both applicants propose 600-foot tall floating turbines utilizing the WindFloat technology. Proposed wind turbine sites have been identified approximately 9-17 miles offshore of O'ahu at 3 different call areas with depths of 2,300-3,300 ft. deep.

Both applicants appear to require dedicated space onshore for siting/storage, construction, float and tow capacity in addition to maintenance and repair of the projects components. New port infrastructure may be necessary. In addition, 4 potential power line landing sites have also been identified.

At this time, the Bureau of Ocean Energy Management is seeking comment for determining issues and alternatives to be analyzed in the Environmental Assessment that will consider potential environmental impacts associated with issuing future commercial wind leases and approving site assessment activities within the potential lease areas.

Geologic setting

Expected studies should include the geology of the seafloor, sub-seafloor and cable route, as well as water depths, surface and sub-surface sediment types, seafloor morphology, sub-seafloor stratigraphy and natural or manmade obstructions.

Potential effects of the project on currents, waves, salinity, water temperature, water depth/bathymetry and sediment transport should also be explored. Could the proposal have an

effect on the summer swells during south shore surf season or on the winter swells during north shore surf season?

Wildlife

Potential entanglement and encounters with project components is a major concern. The Department request wildlife surveys, studies and discussions that would include avian and aquatic migrations north to south and between islands be completed. There is considerably uncertainty in the impact of offshore wind energy development on birds. The Department request a risk assessment be done for avian species to reduce uncertainty and to understand the potential harm the turbines may pose to not just migratory species that may fly through the areas but also to Hawaiian seabirds that may forage in the call areas.

Hawai'i fishermen are skilled in using bird spotters to locate fish. Could the proposed turbines potentially affect this relationship? Will the site become a Fish Aggregate Device [FAD]? Could the site attract fish away from other FADs?

We have also attached specific comments from our Division of Aquatic Resources that includes a list of resident populations of cetaceans; researchers of consultation importance; and call areas that may impact commercial fishermen's fishing grounds. [Exhibit 1]

Cultural Impacts

The proposed site off of Ka'ena may impose upon cultural beliefs of the Hawaiian people. Ka'ena is a place noted as a Leina-a-ka'uhane, traditionally recognized as the jumping off point of the spirit into the next realm. To go west is synonymous with dying in the Hawaiian culture and other cultures.

Further the potential imposition of the line of sight to Kaua'i may also impose upon traditional practices. Maluka Heiau above Waimea Bay at Pūpūkea/Paumalū and the Heiau(s) of Wailua on the island of Kaua'i share a relationship. Although Kaua'i is 75-miles away, communication between the two locations traditionally occurred and should be preserved and continue to occur to promote and preserve cultural beliefs and practices.

Tsunami /Tropical Storm/Hurricane Studies

Understanding the power of the ocean during a natural hazard event traveling over the site is vital to insure uninterrupted electrical services to the population. Tsunami, rouge wave, passing Kona storms and hurricanes all present potential challenges to the potential lease sites. Natural hazard events and mitigation must be defined and compared to components thresholds.

Other concerns

The southeast call area appears to be near a former dump site for dredged materials. In addition, there may be unexploded ordinance in either call area. Survey and sweeps of the potential lease areas for hazards should be undertaken.

What type of noise could be produced at the site and underwater during construction and operations? What could be the potential effects on aquatic and avian species? During Kona winds, could this noise be heard on O'ahu?

Discussion of what could be seen from existing view planes and vantage points, including residential neighborhoods should be included. The Department would encourage modeling studies of the 600 ft mock turbines with blinking light to examine view planes from Oahu and potential effects on avifauna for the call areas.

Additional Comments

The Department requests that proper names of agencies be utilized to avoid confusion and to insure that we are all on the same page. Based upon comments received at a Public Hearing in Wai'anae for a different project, environmental justice issues may need to be explored for any large utility/infrastructure proposed within the northern call area.

Should you have any questions regarding this correspondence, contact Tiger Mills of the Office of Conservation and Coastal Lands at (808) 587-0382.

Sincerely,



Suzanne D. Case, Chairperson
Board of Land and Natural Resources

C: DAR/DOFAW

DAVID Y. IGE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF AQUATIC RESOURCES
1151 PUNCHBOWL STREET, ROOM 330
HONOLULU, HAWAII 96813

SUZANNE D. CASE
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BOARD OF LAND AND NATURAL RESOURCES
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KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

Date: 9/1/2016
DAR # 5342 (Part II)

MEMORANDUM

TO: *SM* Bruce S. Anderson, DAR Administrator
DATE: 9-1-16
FROM: Catherine Gewecke, Aquatic Biologist *CG*

SUBJECT: Request for Comments for Notice of Intent to Prepare an Environmental Assessment for the Potential Commercial Leasing for Wind Power on the Outer Continental Shelf

Comment	Date Request	Receipt	Referral	Due Date
	7/13/2016	7/14/2016	7/22/2016	8/30/2016

Requested by: DLNR-Office of Conservation of Coastal Lands (OCCL)

Summary of Proposed Project

Title: Bureau of Ocean Management (BOEM) Notice of Intent to Prepare an Environmental Assessment for Potential Commercial Leasing for Wind Power on the Outer Continental Shelf

Project by: Bureau of Ocean Energy Management (BOEM)

Location: Outer Continental Shelf, Offshore the Island of Oahu, Hawaii

Brief Description: This Request for Comments from the Office of Conservation of Coastal Lands (OCCL) for the Notice of Intent to Prepare an Environmental Assessment for Potential Commercial Leasing for Wind Power on the Outer Continental Shelf includes the Department of the Interior's Bureau of Ocean energy Management (BOEM):

(1) Notice of Intent to Prepare an Environmental Assessment;

EXHIBIT 1

(2) Call for Information and Nominations for Commercial Leasing for Wind Power on the Outer Continental Shelf, Offshore the Island of Oahu, Hawai'i [PLEASE see page 41341- Requested Information from Interested or Affected Parties *]; and

(3) A Map of the Oahu Call Out Area.

The Division of Aquatic Resources (DAR) has received a request for comments from the Office of Conservation of Coastal Lands (OCCL) for the notice of intent to prepare an environmental assessment for the Potential Commercial Leasing for Wind Power on the Outer Continental Shelf by the Department of the Interior's Bureau of Ocean Energy Management (BOEM). BOEM is currently processing three unsolicited lease requests for floating wind energy projects offshore Oahu, Hawaii. The Energy Policy Act of 2005 granted BOEM authority to issue leases for renewable energy projects on the Outer Continental Shelf (OCS), which begins 3 nautical miles offshore the islands of Hawaii. Unsolicited lease requests provide an avenue for developers to seek a federal lease for the development of renewable energy projects.

Generally, the unsolicited lease requests submitted to BOEM propose to lease areas offshore Oahu for the purposes of developing wind energy facilities with a capability of generating approximately 400 MW of electricity. The unsolicited lease requests describe the wind facilities as being based on floating wind technology. Conceptually, the lease requests describe transmission of offshore wind power to the island of Oahu via undersea cable. The three unsolicited lease requests are as follows:

- AW Hawaii Wind, LLC (AWH) proposes to lease an area approximately 17 miles south of Diamond Head in water depths of approximately 300-700 meters (984-2,296 feet). The proposed lease area is 12,099 acres (4,896 hectares).
- AWH has also proposed to lease an area approximately 12 miles northwest of Kaena Point in water depths of approximately 700-1,000 meters (2,296-3,280 feet). The proposed lease area is 11,387 acres (4,608 hectares).
- Progression Hawaii Offshore Wind, Inc. (Progression) has proposed to lease an area approximately 9 miles southeast of Barber's Point in average water depths of 500-1,000 meters (1,640-3,280 feet). The proposed lease area is 77,440 acres (31,338 hectares).

The Call also will ask the public and interested stakeholders to comment and provide information about site conditions and other uses of the requested areas relevant to the potential impacts of leasing and development in the Call area, or portions thereof. BOEM will also issue a Notice of Intent (NOI) to prepare an Environmental Assessment (EA) as required by the National Environmental Policy Act (NEPA) at the same time as the Call. The EA will analyze the site characterization and assessment activities required to collect site-specific data of any proposed Call areas.

BOEM will use the information and expressions of interest received during the Call comment period to gather information about potential multiple uses and environmental concerns and determine whether additional interest exists in leasing in the Call area.

EXHIBIT 1

Each project proposes an offshore floating wind energy facility with a capacity of approximately 400 megawatts (MW) of renewable energy. The energy generated by the projects would be transmitted to Oahu by undersea cables.

DAR Comments:

Impact to aquatic resources during the staging, transit, deployment, and post-installment phases or areas of the floating wind turbines is the main concern on Division of Aquatic Resources (DAR). DAR requests evaluation and review of the abilities to maintain buoyancy of the components during the staging, transit, deployment, and post-installment phases or areas, to minimize impact to benthic organisms, and maintaining entanglement-free structures of the components during the staging, transit, deployment, and post-installment phases or areas to minimize potential for entanglement of mobile marine organisms. Additionally, DAR would request evaluation and review of the potential impact to benthic marine organisms from the total foot print of the wind turbine arrays and the potential impacts caused by the entry or exit locations of the power transmission cables at the shoreline or in shallow reef area and any other structures that may be installed to facilitate these cables in shallow reef areas.

The following are the potential impacts to aquatic organisms that BOEM or applicants should take into consideration when prepare an environmental assessment for the proposed commercial leasing for wind power on the outer continental shelf:

EA considerations:

1. The potential for entanglement or impact of migrating marine mammals or other marine organisms through the use of vertical cables to anchor the floating wind turbines to the benthic substrate and lateral cables (1 mile long each) to transmit power between the floating wind turbines.

Resident populations of 11 species of cetaceans —dwarf sperm whales, Blainville's beaked whales, Cuvier's beaked whales, pygmy killer whales, short-finned pilot whales, melonheaded whales, false killer whales, pantropical spotted dolphins, spinner dolphins, rough-toothed dolphins, and common bottlenose dolphins have been documented in the waters surrounding the Hawaiian islands (Baird et al, 2015). Additional cetacean species utilize Hawaiian waters intermittingly for migration routes or feeding, breeding or birthing grounds, including Humpback whales (Baird et al, 2015). Cascadia Research Collective has identified twenty (20) Biologically Important Areas (BIAs) for these resident populations in Hawaiian waters, and one reproductive area for humpback whales (Baird et al, 2015). Some of these Biologically Important Areas for certain cetaceans overlap with the delineated portions of the maps of the "Oahu Call Out Area" that have been provided by BOEM.

DAR recommends that a comprehensive review and analysis of available local or transient cetacean data and literature (and that of any other marine mammal populations) be conducted by BOEM.

Researchers of consultation importance (that conduct Hawaiian cetacean studies currently) may include, but are not limited to: Robin Baird (Cascadia Research Collective), Ed Lyman (Hawaiian Island Humpback Whale National Marine Sanctuary), Adam Pack (University of Hawaii at Hilo), Rachel Cartwright (Keiki Kohola Project), Jim Darling (Whale Trust), Joseph Mobley (University of Hawaii), Whitlow Au (University of Hawaii-HIMB), Ann Zoidis (Cetos Research Organization), Christine Gabriele (Hawaii Marine Mammal Consortium), Jason Turner (University of Hawaii – Hilo), Greg Kauffman (Pacific Whale Foundation), and Bruce Mate (Oregon State University-Marine Mammal Institute).

2. The potential for impacts to photic and mesophotic benthic communities through use of “drift anchors” for wind turbines and through the deployment of ocean floor cables for power transmission.

There are many researchers in Hawaii that specialize in mesophotic communities and have information about the location of larger areas populated by deep-water corals including black, gold and pink corals, deep-water scleractinian corals, live rock, sponges and other deep-water marine invertebrates. Several deep-water dives have been conducted by Hawaii Underwater Research Laboratory (HURL) Pisces manned submersible and recently by the ROV’s from NOAA’s Okeanos Explorer. Depending on the scale of the footprint of drift anchors and the deployment of ocean floor cables, DAR recommends that a comprehensive review and analysis of available mesophotic data be conducted (including benthic mapping and biological inventory) of these deep-water areas. If no data is available, DAR recommends the consideration of new deep-water surveys to be conducted in areas with large footprints or impacts to the mesophotic benthic environment.

Researchers of consultation importance (that conduct Hawaiian mesophotic studies currently or in the past) may include, but are not limited to: Frank Parrish (NMFS//Pacific Island Fisheries Science Center/Protected Species Division), Sam Kahng (Hawaii Pacific University), Anthony Montgomery (Pacific Islands Fish and Wildlife Office), Randall Kosaki (NOAA-National Marine Sanctuaries- Papahānaumokuākea Marine National Monument) and Richard L. Pyle (Bishop Museum).

3. The potential for impact to nearshore benthic organism communities in the entry or exit locations of the power transmission cables at the shoreline or in shallow reef areas and any other structures that may be installed to facilitate these cables in shallow reef areas (e.g.: excavation of receiving pits for breakout points for the transition of subterranean cables to above-ground cables or similar structures).

DAR recommends that a comprehensive review and analysis of available benthic survey data for the proposed areas of impact (proposed array areas, proposed areas where power transmission cables will traverse and in the entry and exit areas of near-shore habitat where other power

transmission structures may be installed) to be conducted to assess cumulative impact from deployment of components of floating wind turbines.

If no data is available, DAR requests that a comprehensive biological assessment be conducted of the benthic environment in the proposed array areas, in the areas where power transmission cables will traverse and in the entry and exit areas of near-shore habitat where other power transmission structures may be installed. This biological assessment would include (but not be limited to) information on biological inventory of each area, including genus-species of all organisms, quantities/population-size/density per area, age class of corals, fish population/trophic assemblage data and benthic habitat descriptions.

4. The potential for impact of floating wind turbine operational noise on marine mammal echolocation, communication, navigation and open-water activities of marine mammals.

DAR recommends that a comprehensive review and analysis of available local or transient cetacean data and literature (and that of any other marine mammal populations), in relation to acoustic interference or impacts, be conducted by BOEM.

Researchers of consultation importance (that conduct Hawaiian cetacean studies currently) may include, but are not limited to: Robin Baird (Cascadia Research Collective), Ed Lyman (Hawaiian Island Humpback Whale National Marine Sanctuary), Adam Pack (University of Hawaii at Hilo), Rachel Cartwright (Keiki Kohola Project), Jim Darling (Whale Trust), Joseph Mobley (University of Hawaii), Whitlow Au (University of Hawaii-HIMB), Ann Zoidis (Cetus Research Organization), Christine Gabriele (Hawaii Marine Mammal Consortium), Jason Turner (University of Hawaii – Hilo), Greg Kauffman (Pacific Whale Foundation), and Bruce Mate (Oregon State University-Marine Mammal Institute).

5. The potential for impact to regular activities and behaviors of marine mammals including, migration, feeding, socializing and mating.

DAR recommends that a comprehensive review and analysis of available local or transient cetacean data and literature (and that of any other marine mammal populations) be conducted by BOEM.

Researchers of consultation importance (that conduct Hawaiian cetacean studies currently) may include, but are not limited to: Robin Baird (Cascadia Research Collective), Ed Lyman (Hawaiian Island Humpback Whale National Marine Sanctuary), Adam Pack (University of Hawaii at Hilo), Rachel Cartwright (Keiki Kohola Project), Jim Darling (Whale Trust), Joseph Mobley (University of Hawaii), Whitlow Au (University of Hawaii-HIMB), Ann Zoidis (Cetus Research Organization), Christine Gabriele (Hawaii Marine Mammal Consortium), Jason Turner (University of Hawaii – Hilo), Greg Kauffman (Pacific Whale Foundation), and Bruce Mate (Oregon State University-Marine Mammal Institute).

6. The potential for impact on commercial fishermen's fishing grounds in the event that the access to the floating wind turbine areas become restricted to the public due to security concerns.

DAR documents the fishing effort data from the reporting blocks that are within the delineated portions of the maps of the "Oahu Call Out Area" that have been provided by BOEM. DAR recommends that a comprehensive review and analysis of available fishing effort data be conducted, if data is available, subject to confidentiality limitations.

Fishing effort data from the "Oahu North" call out area reporting blocks should be evaluated in terms of impacts to fisherman in the event that area becomes restricted to access for energy security reasons. These reporting blocks include #'s:

6228 to 6233
6278 to 6287
6328 to 6335
6378 to 6384
6428 to 6433
And 6482

Fishing effort data from the "Oahu South" call out area reporting blocks should be evaluated in terms of impacts to fisherman in the event that area becomes restricted to access for energy security reasons. These reporting blocks include #'s:

6939 to 6907
6990 to 6959
7041 to 7010
7051 to 7059
7102 to 7108
6003 to 6008
6053 to 6058
6103 to 6110
6154 to 6160
6205 to 6210

7. The potential for wind turbines to break free during tsunami, hurricane or tropical storms and subsequent impacts to aquatic resources (including the potential cumulative impact of 50 + turbines from three different potential areas breaking free).

DAR requests to review any contingency plans BOEM or applicant would implement in order to mitigate the potential damage to aquatic resources from the impacts of the floating wind turbines breaking anchors in event of a natural disaster such as tsunami, hurricane or tropical storms.

General Mitigation for Entanglement, Impact to Benthic Organisms and Potential Reduction of Fishing Grounds Area

DAR requests that evaluation and review of mitigative measures and operational contingency plans for staging, transport, deployment and post installment activities proposed be included in the environmental assessment. DAR recommends that BOEM require applicants to guarantee that mitigative measures and best management practices will be employed to avoid potential entanglement of marine turtles, cetaceans, monk seals or any other marine organism or potential impact to marine resources through contact.

Thank you for providing us the opportunity to review and comment on the call for the proposed leases and projects. Should there be any changes, amendments or modifications to the current plans, DAR requests the opportunity to review and comment on those changes.

DAVID Y. IGE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

FORD N. FUCHIGAMI
DIRECTOR

Deputy Directors
JADE T. BUTAY
ROSS M. HIGASHI
EDWIN H. SNIFFEN
DARRELL T. YOUNG

IN REPLY REFER TO:

STP 8.2019

September 16, 2016

RECEIVED

SEP 26 2016

BUREAU OF OCEAN ENERGY MANAGEMENT

Regional Director
Bureau of Ocean Energy Management
Outer Continental Shelf Region
760 Paseo Camarillo, Suite 102
Camarillo, California 93010

Dear Regional Director:

Subject: Notice of Intent (NOI) to Prepare an Environmental Assessment (EA) for Wind Leasing and Site Assessment Activities on the Outer Continental Shelf Offshore Island of Oahu, Hawaii

The Hawaii Department of Transportation (HDOT) has the following comments on the subject Bureau of Ocean Energy Management (BOEM) NOI-EA:

Airports Division (HDOT-AIR)

1. The nearest wind farm lease area is over six (6) miles offshore and over six (6) miles south of the Honolulu International Airport's Reef Runway 8R/26L (HNL) and west of Dillingham Airport (HDH).
2. Installation, operation, and maintenance of wind power generation towers may cause hazardous glare and/or glint conditions that need to be anticipated, mitigated, and eliminated before any hazards occur.
3. Wind power generators may create hazardous radar interference problems that will require mitigation. It is recommended that technological adjustments that are mutually acceptable by the Federal Aviation Administration (FAA), emergency service providers, and HDOT-AIR be made by the developer to mitigate potential radar interference.
4. The BOEM and project developers should refer to FAA Advisory Circular 70/7460-1L (2015), *Obstruction Marking and Lighting*, which states that wind turbines should be painted white or light grey, the most effective colors for providing daytime conspicuity to aircraft pilots.

5. The BOEM and project developers should also refer to FAA AC 70/7460-1L (2015) in developing a lighting plan and designing obstruction lighting systems for proposed wind power projects. FAA AC 70/7460-1L recommends that nighttime wind turbine obstruction lighting should consist of FAA L-864 aviation red flashing, strobe, or pulsed obstruction lights.
6. Wind power generators are a low level obstruction that can create hazards for emergency search and rescue operations. This is of even greater concern due to the lease locations in areas where there is significant ocean surface traffic and air traffic.
7. The developer should submit a FAA Form 7460-1 "Notice of Proposed Construction or Alteration," in accordance with Code of Federal Regulations, Title 14, Part 77.9. In addition, a FAA Form 7460-1 should be submitted for any tall equipment, such as cranes, that may be used during construction. This form and criteria for submittal can be found at the following website: <https://oeaaa.faa.gov/oeaaa/external/portal.jsp>.
8. If the applicant files a FAA Form 7460-1, a copy should be provided to HDOT-AIR when the project proponent receives the FAA determination.

Harbors Division (HDOT-HAR)

The BOEM's potential wind farm leasing activities are located in federal waters in two areas, one to the northwest and the other to the south of Oahu. These potential wind farm leasing sites are outside of HDOT-HAR's jurisdiction, and therefore, the Division has no comment.

However, while the Environmental Assessment focuses on the offshore areas, eventually these activities will depend on landside support, and will most likely use State harbor facilities. The following general comments should be considered:

1. Harbor space is limited, and the infrastructure and activity at each facility differs, thus affecting the availability and capacity of each harbor. Note the associated study, *Determining the Infrastructure Needs to Support Offshore Floating Wind and Marine Hydrokinetic Facilities on the Pacific West Coast and Hawaii*; BOEM should consult HDOT-HAR for any future analysis that involves the use of HDOT-HAR facilities.
2. Potential applicants should consult with HDOT-HAR early in the process prior to any decision making that involves the use of the State's commercial harbor infrastructure.

3. Applicants are required to comply with Section 343, Hawaii Revised Statutes if the action proposed uses State lands, including the State's commercial harbors. Concerns associated with the use of harbor facilities include:
- Potential impacts from loading and unloading of equipment (i.e., windmill blades) onto harbor facilities;
 - Potential impacts to cargo activities and scheduling;
 - Potential impacts to infrastructure (pier and yard strength); and
 - Potential impacts of the use of backlands for the construction of floating wind farm facilities that would require a lease or revocable permit.

Highways Division (HDOT-HWY)

Any and all utilities placed in a State Right-Of-Way will require a use and occupancy agreement from HDOT-HWY.

If there are any questions, please contact Mr. Norren Kato of the DOT Statewide Transportation Planning Office at telephone number (808) 831-7976.

Sincerely,



FORD N. FUCHIGAMI
Director of Transportation

c: Mr. Gordon Wong, Federal Aviation Administration

DAVID Y. IGE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD, STE 555
KAPOLEI, HAWAII 96707

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA
FIRST DEPUTY

JEFFREY T. PEARSON
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

September 6, 2016

Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands
Department of Land and Natural Resources
P.O. Box 621
Honolulu, HI 96809

IN REPLY REFER TO:
Log No. 2016.01762
Doc No. 1608GC21
Archaeology, Architecture
History and Culture

Dear Mr. Lemmo:

SUBJECT: Chapter 6E-8 and National Historic Preservation Act (NHPA) Section 106 Review – Request for Comments – Dept. of Interior’s Bureau of Ocean Energy Management (BOEM) Potential Commercial Leasing for Wind Power on the Outer Continental Shelf Island of O’ahu

Thank you for the opportunity to provide comments on the above submittal which indicates that the Department of Interior, Bureau of Ocean Energy Management (BOEM) has filed a (1) Notice of Intent to Prepare an Environmental Assessment; (2) Call for information and nominations for commercial leasing for wind power on the Outer Continental Shelf (OCS), Offshore of the Island of O’ahu, Hawaii within the Federal Register, Vol. 81, No. 122, Friday, June 24, 2016 (p. 41334 through 41342); and (3) a BOEM Map of the Oahu Call Out Area (potential locations).

At this time SHPD has insufficient information to make a determination on the project effects on potential historic properties pursuant to NHPA Section 106. The map submitted indicates O’ahu North as a potential site located approximately 7-24 miles west of Kaena Point, O’ahu. The location of this potential site places it directly in the Kauai Channel and within the visual plane of a significant traditional Hawaiian spiritual site known as the Leina Uhane (Kaena Point). In addition, there are both National Register listed historic properties and National Register eligible historic properties within the O’ahu South visual plane.

This submittal will require the State Historic Preservation Division (SHPD) to review the proposed project under Chapter §6E-8, Hawaii Revised Statutes (HRS) and under Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 CFR Part 800. The involvement of a federal agency (BOEM) triggers the NHPA Section 106 review. The governing statute to Section 106 is 36 CFR 800. Attached are steps that need to be addressed under Section 106:

- Name of the federal and state funding or licensing agency/agencies involved with this project. The State Historic Preservation Officer (SHPO) is required to respond to the federal agency or to the agency’s designated authority. Consultants contracted to prepare information, analyses, or recommendations are not recognized as a federally-delegated authority. Every federal undertaking has a federal funding, licensing, or permitting agency. Please include the name, address, and telephone number of the contact person/s at the federally delegated authority 36 CFR §800.2(a);
- A delegation letter from the federal agency that identifies the particular activities and responsibilities they have delegated on their behalf;
- Information documenting that the agency has evaluated and determined the project constitutes an undertaking as defined 36 CFR §800.16(y);

- Information indicating that a reasonable and good faith effort has been conducted to identify historic properties (architectural, archaeological, or traditional cultural properties [TCPs], traditional cultural landscapes [TCLs] within the area of potential effect (APE) 36 CFR §800.4(a) and 4b);
- The identification effort should include consultation efforts with Native Hawaiian Organizations (NHOs) 36 CFR §800.4(a)4, and consultation efforts with individuals, organizations and the public with a demonstrated interest in the undertaking 36 CFR §800.2(c), and should include documentation of the nature of the consultation, the names of the consulted parties and their comments/concerns; and
- A determination of eligibility and significance for any properties or potential historic districts within the APE; assessment of project effect (to historic properties) 36 CFR §800.4(d), and if necessary resolution of adverse effects 36 CFR §800.6 for any sites located within the APE.

We look forward to receiving the federal agency's and/or delegated authority's request to initiate the NHPA Section 106 consultation on this proposed undertaking.

If you have any questions regarding archaeological resources or concerns please contact Susan Lebo, Archaeology Branch Chief at (808) 692-8019 or at Susan.A.Lebo@hawaii.gov. For any history and culture concerns please contact Ka'āhiki Solis, Cultural Historian, at Sheleigh.Solis@hawaii.gov or at (808) 692-8030. Please contact Jessica Puff, Architectural Historian, at Jessica.L.Puff@hawaii.gov or (808) 692-8023 for any questions regarding architectural concerns or this letter.

Aloha,

A handwritten signature in black ink, appearing to read "Alan S. Downer", followed by a long horizontal line extending to the right.

Alan S. Downer, PhD
Administrator, State Historic Preservation Division
Deputy, State Historic Preservation Officer



**DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM**

DAVID Y. IGE
GOVERNOR

LUIS P. SALAVERIA
DIRECTOR

MARY ALICE EVANS
DEPUTY DIRECTOR

STRATEGIC INDUSTRIES DIVISION
235 South Beretania Street, Leiopapa A Kamehameha Bldg., 5th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804
Web site: www.hawaii.gov/dbedt

Telephone: (808) 587-3807
Fax: (808) 586-2536

August 4, 2016

Bureau of Ocean Energy Management
Pacific OCS Region
Attn: Joan Barminski, Regional Director
760 Paseo Camarillo, Suite 102 (CM 102)
Camarillo, California 93010

Dear Ms. Barminski:

SUBJECT: Hawaii State Energy Office Comments on the: (1) Call for Information and Nominations for Commercial Leasing for Wind Power on the Outer Continental Shelf, Offshore the Island of Oahu, Hawaii; and, (2) Notice of Intent to Prepare an Environmental Assessment for Commercial Wind Leasing and Site Assessment Activities on the Outer Continental Shelf Offshore the Island of Oahu, Hawaii

The Hawaii State Energy Office (HSEO) within the Department of Business, Economic Development, and Tourism (DBEDT) offers the following comments regarding the two Notices recently issued by the Bureau of Ocean Energy Management (BOEM): (1) Call for Information and Nominations (Call) for Commercial Leasing for Wind Power on the Outer Continental Shelf (OCS), Offshore the Island of Oahu, Hawaii;¹ and, (2) Notice of Intent to Prepare an Environmental Assessment (EA Notice) for Commercial Wind Leasing and Site Assessment Activities on the OCS Offshore the Island of Oahu, Hawaii.²

HSEO appreciates BOEM's open and active efforts to seek input from many local stakeholders, culminating in the series of public meetings conducted on Oahu in June 2016 and July 2016. We believe it is necessary for Hawaii's communities to be engaged such that they can share their comments, concerns, and perspectives so that BOEM and other stakeholders can take their input into consideration in forming positions on the suitability of the proposed Oahu Call Area for offshore wind development and the potential impacts from offshore site assessment activities.

The three unsolicited proposals submitted to BOEM coupled with the recent Hawaiian Electric Company (HECO) planning documents contemplating offshore wind³ make it

¹ Docket No. BOEM-2016-0036

² Docket No. BOEM-2016-0049

³ Hawaiian Electric Companies' PSIPs Update Report, filed April 1, 2016 (Docket No. 2014-0183).

appropriate for BOEM and all other stakeholders to evaluate offshore wind as a potential resource to help achieve our goal of 100% renewable energy by 2045.⁴ In order to meet this aggressive goal, all potentially viable renewable energy technologies warrant consideration at this time.

Our comments are based on the state's Energy Policy Directives to diversify our energy portfolio and to balance technical, economic, environmental, and cultural considerations. HSEO defers to the affected regulatory agencies on the potential impacts to their respective programs. We look forward to continued collaboration with BOEM and the other stakeholders to address these comments.

Stakeholder and Community Input

HSEO urges BOEM to significantly weigh the comments received from members of the affected communities in determining the appropriateness of the proposed Oahu Call Area for offshore wind development. Oral testimony provided by community members at the recent June and July community meetings highlighted numerous concerns shared by these communities; however, without the benefit of reviewing all public comments prior to submission of this letter, we defer to the public comments on record to determine overall community sentiments regarding the appropriateness of offshore wind development in the proposed Oahu Call Area. We note the communities on Kauai, Molokai, and Lanai could also be affected by the proposed offshore wind developments and should be engaged to ensure they are adequately informed of the proposed projects and the opportunities to meaningfully inform the process.

HSEO is also sensitive to the national security implications of the proposed offshore wind installations and is interested in the comments from the United States Department of Defense in this regard.

Connecting to the Electrical Grid

While not directly applicable to BOEM's current review of the Call Area or EA notice, HSEO takes this opportunity to state that additional information will be needed at the appropriate future time demonstrating how the proposed offshore wind projects specifically fit into HECO's overall plans to reach 100% renewable energy by 2045 (e.g., Power Supply Improvement Plan) and would be interconnected to the electric grid(s). In addition, the applicants will be required to provide analysis demonstrating the costs and benefits of the projects to Oahu ratepayers. HSEO provides these comments now as they are integral to the success or failure of the three proposed projects.

⁴ Per Act 97, 100% of all electricity sold by Hawaii utilities by the year 2045 must come from renewable energy resources (Act 97, Session Laws of Hawaii 2015).

Bureau of Ocean Energy Management
Attn: Joan Barminski, Regional Director
August 4, 2016
Page 3

Existing Communications and Other Infrastructure

HSEO asks BOEM to consider the impacts to existing submarine telecommunications cables and infrastructure in determining the appropriateness of the Call Area and potential environmental impacts from any subsequent site assessment activities.

Thank you for the opportunity to provide these comments. If you have any follow-up questions, please contact me at (808) 587-3812 or mark.b.glick@hawaii.gov.

Sincerely,



Mark B. Glick
State Energy Administrator



HOUSE OF REPRESENTATIVES

STATE OF HAWAII
STATE CAPITOL
HONOLULU, HAWAII 96813

Bureau of Ocean Energy Management
Pacific OCS Region
Attn: Joan Barminski, Regional Director and
Mark Eckenrode, Bureau of Ocean Energy Management, Pacific OCS Region
760 Paseo Camarillo, Suite 102 (CM102)
Camarillo, Ca 93010

Dear Ms. Barminski and Mr. Eckenrode,

Subject: Scoping Comments, Environmental Assessment for Commercial Wind Leasing and Site Assessment Activities on the Outer Continental Shelf (OCS) Offshore the Island of Oahu
Hawaii – Docket ID: BOEM-2016-0049

I'm not supportive of Commercial Wind Leasing on the Outer Continental Shelf (OCS) Offshore the Island of Oahu especially the Oahu North area (northwest of Kaena Point). Kaena Point the westernmost tip of Oahu has been a focal point with the Hawaii State Department of Land and Natural Resources (DLNR) for many decades and currently is the site of one of the last intact dune ecosystems in the main Hawaiian Islands and in 1983 the Kaena Point Natural Area Reserve (NAR) was established. A pest-proof fence helps to enclose the 59 acre site which is host to native plants, Hawaiian monk seals, native birds, nesting birds, migratory shorebirds including one of the largest seabird colonies in the main Hawaiian Islands with an estimated 2000 plus seabirds using Kaena Point as their breeding grounds and cultural resources including leina a kauhane (spirit leap) (where departed souls leap into a the spiritual world) and is considered a wahi pana (a celebrated legendary place). The ocean off Kaena Point is also a Bottomfish Restricted Fishing Area (BRFA) managed by DLNR and an annually

traveled corridor for humpback whale migration. Major concerns for placement of wind turbines in the Oahu North area are:

Migratory shorebirds traveling from the Northwest Hawaiian Islands to the Kaena Point NAR and potential collisions with wind towers and blades or wind currents disrupting flight patterns.

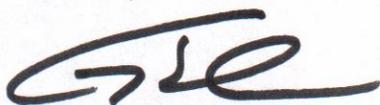
The effect on sea life (humpback whales, dolphin pods, Hawaiian monk seals) traveling thru potential fields of underwater cables securing wind towers.

The impact on private and commercial fishing within or near a power utility in the open ocean in regard to security of the utility.

The security of the connection from the wind tower site to costal landing and trunk line to the power grid.

I understand that Hawaii has a goal of 100% renewable energy by 2045 and that Wind power could be a partner in that achievement, but not at the cost of the risk to the eco system and Hawaii's natural resources.

Mahalo,

A handwritten signature in black ink, appearing to read 'Jo Jordan', with a stylized flourish at the end.

Representative Jo Jordan
44th District – Waianae, Makaha, Makua, Maili



RONALD D. KOUCHI
PRESIDENT

WILL ESPERO
VICE PRESIDENT

SAM SLOM
MINORITY LEADER

The Senate

STATE CAPITOL
HONOLULU, HAWAII 96813

FIRST DISTRICT
GILBERT KAHELE

SECOND DISTRICT
RUSSELL E. RUDERMAN

THIRD DISTRICT
JOSH GREEN

FOURTH DISTRICT
LORRAINE R. INOUE

FIFTH DISTRICT
GILBERT S.C. KEITH-AGARAN

SIXTH DISTRICT
ROSALYN H. BAKER

SEVENTH DISTRICT
J. KALANI ENGLISH

EIGHTH DISTRICT
RONALD D. KOUCHI

NINTH DISTRICT
SAM SLOM

TENTH DISTRICT
LES IHARA, JR

ELEVENTH DISTRICT
BRIAN T. TANIGUCHI

TWELFTH DISTRICT
BRICKWOOD GALUTERIA

THIRTEENTH DISTRICT
SUZANNE CHUN OAKLAND

FOURTEENTH DISTRICT
DONNA MERCADO KIM

FIFTEENTH DISTRICT
GLENN WAKAI

SIXTEENTH DISTRICT
BRENE HARIMOTO

SEVENTEENTH DISTRICT
CLARENCE K. NISHIHARA

EIGHTEENTH DISTRICT
MICHELLE N. KIDANI

NINETEENTH DISTRICT
WILL ESPERO

TWENTIETH DISTRICT
MIKE GABBARD

TWENTY-FIRST DISTRICT
MAILE S.L. SHIMABUKURO

TWENTY-SECOND DISTRICT
DONOVAN M. DELA CRUZ

TWENTY-THIRD DISTRICT
GIL RIVIERE

TWENTY-FOURTH DISTRICT
JILL N. TOKUDA

TWENTY-FIFTH DISTRICT
LAURA H. THIELEN

CHIEF CLERK
CAROL TANIGUCHI

September 7, 2016

Abigail Ross Hopper, Director, Bureau of Ocean Energy Management.
Joan Barminski, Regional Director
Mark Eckenrode, Pacific OCS Region
BOEM Pacific OCS Region
760 Paseo Camarillo, Suite 102
Camarillo, CA 93010

RE: Call for Information and Nominations, Docket No. BOEM-2016-0036
EA Preparation Notice, Docket No. BOEM-2016-0049

Dear Ms. Ross Harper, Ms. Barminski and Mr. Eckenrode:

My Senate district includes the North and Windward Shores of Oahu from Kaena Point to Kaneohe. While the following comments are directed specifically to the Oahu North Call Area, please know that I am equally concerned about potential impacts in the Oahu South Call Area.

I can confidently say that a huge majority of residents in my district vehemently oppose industrial wind generation anywhere near Kaena Point. Public meetings held in our district by BOEM clearly evidence this fact.

Our community is environmentally conscious and we were receptive of two wind projects with a combined nameplate value of 100 MW. However, by most accounts, the turbines are considered a blight on our formally pristine vistas and residents are still angry about misrepresentations by the developers on the visual impacts.

The proposed project will be technologically and financially challenging. There is no comparable project anywhere in the world that has demonstrated viable offshore wind generation at such depths and so many miles from land. It is difficult to see how the many obstacles to a reliable, financially responsible, and environmentally sound wind factory in this area could be overcome.

NEPA requires early consultation, analysis of potential impacts for project alternatives and a hard look by the appropriate agency at the impacts and potential mitigation measures. Due to the complexity of the project, this hard look

warrants a full EIS now rather than wasting time and money on the EA, followed immediately with an EIS.

Relating to both the Call and EA notices, here are specific comments and concerns:

1. This environmental report must consider alternatives including, but not limited to, industrial solar generation with energy storage (battery, hydrogen, pump, etc.), diversified solar generation with energy storage, and land based wind generation. This analysis should compare the amounts of energy that could be put into the Oahu grid for the same financial investment. In other words, if the offshore wind project costs two billion dollars, then how much energy could be delivered from each of the alternatives with the same investment of two billion dollars.
2. Any discussion about intermittent energy sources like wind power must consider the cost and technical requirements of standby backup generation, also known as spinning reserve. The estimated cost, energy expended and carbon emissions of the spinning reserve should be calculated.
3. The total costs of this project and how it will be financed must be discussed. How much will this cost the Federal and State governments, and local utilities, in tax credits, subsidies, additional infrastructure or other costs? How much will the developer invest?
4. In the event of a medium to long term interruption of service, such as cable failure, hurricane or other calamity, how will an equal amount of energy be generated? Applicants should elaborate on emergency plans for protection and repair of turbines and related equipment.
5. How many meteorological towers will be installed? How tall will they be? Will they be painted white and have comparable lighting as potential wind turbines? How will they be secured to the ocean floor? How long will they be deployed? Will they all be removed? Is coral or any other sensitive sea life likely to be affected by the installation and removal of the anchors?
6. Are any restrictions on recreational boating and fishing likely? Are restrictions on commercial ocean operations and fishing likely? Will US Navy operations be affected in any way?
7. What are the possible adverse weather conditions in the area? How high are the seas during extreme swells, hurricanes and other possible weather

scenarios? How much wind can the turbines and components tolerate without disruption or damage?

8. What is the economic value or loss of value to Hawaii's tourism industry if the turbines are visible from shore, particularly if they are situated in the vicinity of the setting sun? Identify any comparable tourist destination that developed a similar wind project and discuss the economic consequences on that place. Provide estimated impact on our tourism.
9. How many anchor lines will be necessary per turbine and how much scope will be required for each line? How close will the turbines be situated to each other? Will anchor lines cross beneath adjacent turbine platforms? Waters to 1000 meters are very deep for such an array of lines. The network of anchor lines must be carefully mapped and considered for spacing and assurance that turbines can never collide. What damage to the sea floor will occur and how with this be mitigated?
10. Study cumulative impacts of the network of anchor lines on wave energy, dissipation and refraction, currents at various depths, and fish and mammal behavior and interactions.
11. The electrical transmission network must be carefully reviewed for reliability, efficiency and safety for human and marine life. Will the power cables lay on the ocean floor or will they be suspended? What different impacts result from either of these or an alternative configuration?
12. Study impacts to Oahu's coastlines where cable landing may occur, including corals, fisheries, marine habitats and environments, sea floor destruction and other related considerations.
13. Does Oahu have adequate harbor capacity to import, store, construct and deploy the offshore turbines? Are there any size limitations that could affect this consideration?
14. This project must take seriously the cultural sensitivity and importance of Kaena Point to Native Hawaiians, and decision makers must be willing to walk away if this location is unacceptable to Native Hawaiians, and/or the general public.

15. How might wind turbines pollute the ocean during routine operations? Would any solvents, lubricants, paints or other pollutants be likely to leak or pour into the water?

16. Bird migrations and protection of endangered species are no small matter. What assurance will the public have that bird takes will be accurately counted? What procedures will be used to count and manage the incidental takings of wildlife? Will any measures be used to deter birds from approaching the turbines?

17. What assurance will be required of the wind operator that the project will be appropriately decommissioned and all promised mitigation and restorative measures occur upon the end of the project life?

Public sentiment of the host community must be given great deference when calculating the appropriateness of any development. The people of Hawaii are committed to renewable energy, but this does not mean we will pay any price and sacrifice our environment. Those of us who live near wind turbines understand that big wind is no panacea.

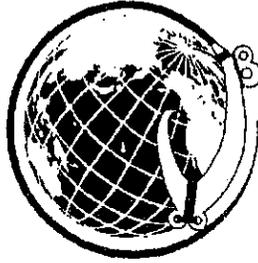
Fortunately, technology is rapidly evolving in many areas of renewable energy and Hawaii is blessed with alternatives. Our low latitude, powerful solar radiation and reliably good weather make solar energy very attractive. With rapid advances in energy storage and alternatives such as solar-to-hydrogen, our future is very bright. We are very skeptical that offshore wind will pencil out or be good for Hawaii.

I appreciate the opportunity to comment on both the Call for Information and the EA Preparation Notice. My community and I will remain involved and contribute at every opportunity.

Respectfully submitted,



Gil Riviere
Senator, District 23
Oahu's North and Windward Shores
808.586.7330
SenRiviere@capitol.hawaii.gov



**Western
Pacific
Regional
Fishery
Management
Council**

June 13, 2016

Abigail Hopper
Director
Bureau of Ocean Energy Management
United States Department of the Interior
5600 Woodland Rd.
Sterling, VA 20166

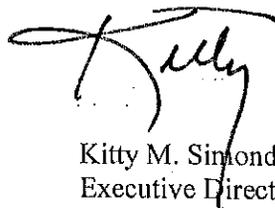
Dear Director Hopper:

As you are aware from your recent attendance at the 4th Hawaii BOEM Task Force Meeting in Honolulu (May 16, 2016), the small boat component of Hawaii's pelagic fishing fleet contains several thousand vessels. These fishermen, many of whom fish in areas currently under consideration for offshore wind production in Hawaii's federal waters, vary in their level of commercial activity, but all attach great importance to the cultural and subsistence aspects of the fishery.

It is this cultural and subsistence importance that prompts me to write to you to stress the need for BOEM to ensure, in Hawaii and the US Pacific Islands, that offshore wind energy companies seeking to obtain lease rights conduct comprehensive and sincere stakeholder engagement. Recognizing Hawaii's unique milieu, this engagement should be undertaken well in advance of a lease application and be focused on informing siting decisions and understanding community perceptions and knowledge of the potential project. Hawaii has a particular history of seeing big projects and ideas fall short because developers and Federal agencies failed to adjust for differences between island and Mainland communities in various process and communication elements.

Given the local importance of this issue, the Council strongly recommends that BOEM develop and implement such criteria in the Call for Information and Nominations and, more generally, in the lease review process.

Sincerely,



Kitty M. Simonds
Executive Director

cc: Edwin Ebisui, Jr. WPRFMC Chair
Michael Tosatto, NMFS PIR Administrator



**Western
Pacific
Regional
Fishery
Management
Council**

September 2, 2016

Regional Director
BOEM Pacific OCS Region
760 Paseo Camarillo, Suite 102
Camarillo, CA 93010

Dear Regional Director:

The Western Pacific Fishery Management Council (Council) thanks the Director of the Bureau of Ocean Energy Management (BOEM) and Pacific office staff for meeting with the Council on July 20, 2016. The Council is pleased to provide written comments on the BOEM Call for Information about site conditions, resources, and existing uses in the Oahu Call Area, supplementing the comments discussed at the July 20 meeting. The Council is also providing scoping comments on the environmental assessment of potential wind leasing and site assessment activities in the Call Area.

As the body charged with the management of fisheries within the Call Area, we look forward to working with BOEM over the next few years, should the Call result in awarding wind lease areas. The Council has considerable concerns with impacts to fishing access and the fish aggregating device and dilution effects, should BOEM initiate an environmental impact statement associated with authorizing a construction and operations plan. If you have questions, please do not hesitate to contact me.

Sincerely,

Kitty M. Simonds
Executive Director

Cc: Abigail Ross Hopper, Director of BOEM
Karen Herrera, Renewable Energy Specialist, BOEM Pacific OCS Region
Mark Eckenrode, NEPA Coordinator, BOEM Pacific OCS Region
Douglas Boren, Chief, Renewable Energy Section, BOEM Pacific OCS Region
Encl: Comments on Existing Uses within the Call Area, Site Conditions, and Resources
Scoping Comments

September 1, 2016

Western Pacific Regional Fishery Management Council Comments on Existing Uses within the Call Area, Site Conditions, and Resources

Data on Existing Uses of the Areas

BOEM used Automatic Identification System (AIS) data from 2013 and 2014 to inform its leasing areas. AIS is only required for fishing vessels greater than 65 feet in length; this captures approximately 80% of the longline fleet transiting the call area (28 of the 142 vessels permitted at the time of this writing are shorter than 65 m). Hawaii's longline vessels are equipped with a vessel monitoring system (VMS), and data may be requested through the NOAA Office of Law Enforcement at (808) 725-6110 to determine longline commercial fishing vessel transit density in the call areas. Data confidentiality concerns may apply.

AIS data does not capture the vessel use areas of Hawaii's 11,230 small boat fleet. 149 of these vessels are registered with commercial fishing as their primary use, 8 as charter fishing vessels, and about 10,000 are registered as pleasure boats. Commercial fishing boats registered with the State usually do not include the longline fleet, which are documented through the Coast Guard. Information on the registry was obtained from the Hawaii Division of Boating and Recreation (DOBOR) on July 27, 2016. The DOBOR database does not differentiate non-commercial fishing as a vessel's primary use from other pleasure vessels.

Areas important to commercial fishing may only be estimated on a large scale from Hawaii's Commercial Marine License (CML) database. Figure 1 shows a statewide view of the number of commercial fishing trips for all gear types per Hawaii statistical fishing grid, aggregated over the last ten years. Figure 2 shows the same data with trip number labeled in the statistical fishing areas around Oahu. Figure 3 shows the relative importance of different boat-based fishing methods in each of the statistical fishing grids around Oahu. Part of the Oahu North Call Area occurs within the most important commercial fishing grid over the last ten years around Oahu; the third most important grid with respect to fishing effort occurs in Oahu South. Additional CML data may be requested from the Division of Aquatic Resources (DAR) within the Hawaii Department of Land and Natural Resources at (808) 587-0100. Species level information are available to help determine hotspots for catch of certain species. Kaena Point is an important tuna area, as shown by the predominance of the trolling method in Figure 3; during the summer, a few hundred boats fish off Waianae, which increases to 600 vessels during the tournament out of Waianae Boat Harbor.

Non-commercial fishing effort, which is inclusive of subsistence, charter boat, and all other non-commercial fisheries, are not represented in the commercial marine license dataset. Expanded catch and effort estimates of Hawaii's Marine Recreational Fishing Survey data are available for download from the NOAA [Office of Science and Technology](#); limitations of this dataset are well documented on the website. The raw dataset includes spatial information limited to whether the fishing activity occurred in federal or states waters and if the fishing was associated with a numbered FAD. Fish aggregating devices (FADs) may experience greater fishing pressure for pelagic species, but are not the only factor that influences fishing effort distribution. Commercial and non-commercial fishermen use the FADs marked in all three figures. FADs are marked on NOAA nautical charts but may also be downloaded from the [Hawaii State Office of Planning](#).

September 1, 2016

Due to the lack of non-commercial spatial data and the large size of the statistical fishing grids, the Council supports direct stakeholder engagement with fishermen, such as through boat clubs and the fish auction, to determine the primary fishing operations affected by siting decisions.

Site Conditions

As disclosed in the Federal Register notice, BOEM used the average annual wind speed, vessel traffic, water depth, and marine managed areas to site the call areas. Fishermen advise that the North Call Area is in an area known as the “washing machine,” where the currents collide. The area may not be suitable for turbines due to the current velocities and swells, which may damage the windfarms.

Resources

According to fishermen, ahi migrate every summer from Kauai to the north side of Oahu; then around the Waianae coast to spawn and continue down the island chain, passing south of Honolulu. Both of the proposed call areas interfere with the ahi migration pattern by attracting the fish to the structures (FAD effect), making the local fish more susceptible to fishing gear. Siting the windfarms within the migration path may have unknown consequences on the ahi population. Additionally, the number of seabirds in the area may increase with increasing amounts of fish in the area, leading to more seabird interactions than can be predicted from a survey of the untouched area.

Statewide Boat-Based Commercial Fishing Trips, 2006-2015

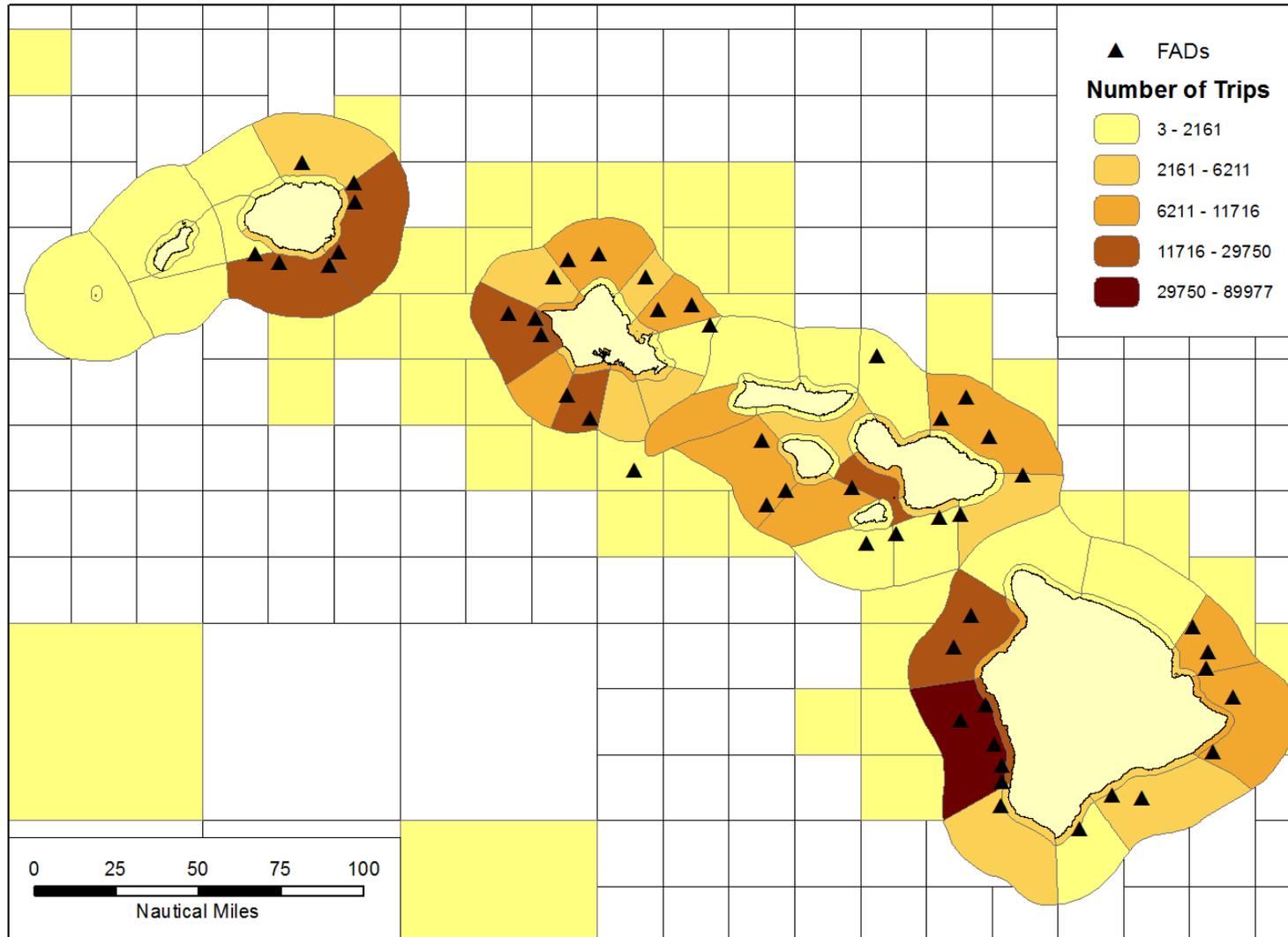


Figure 1. Number of statewide boat-based commercial fishing trips for the years 2006-2015. Nonconfidential data are shown. Data are considered confidential when fewer than three records by fishing method per area per year exist. Commercial license holders often fish in the same area using different gears during a trip, therefore, this generates a separate trip count for each gear.

Oahu Boat-Based Commercial Fishing Trips, 2006-2015

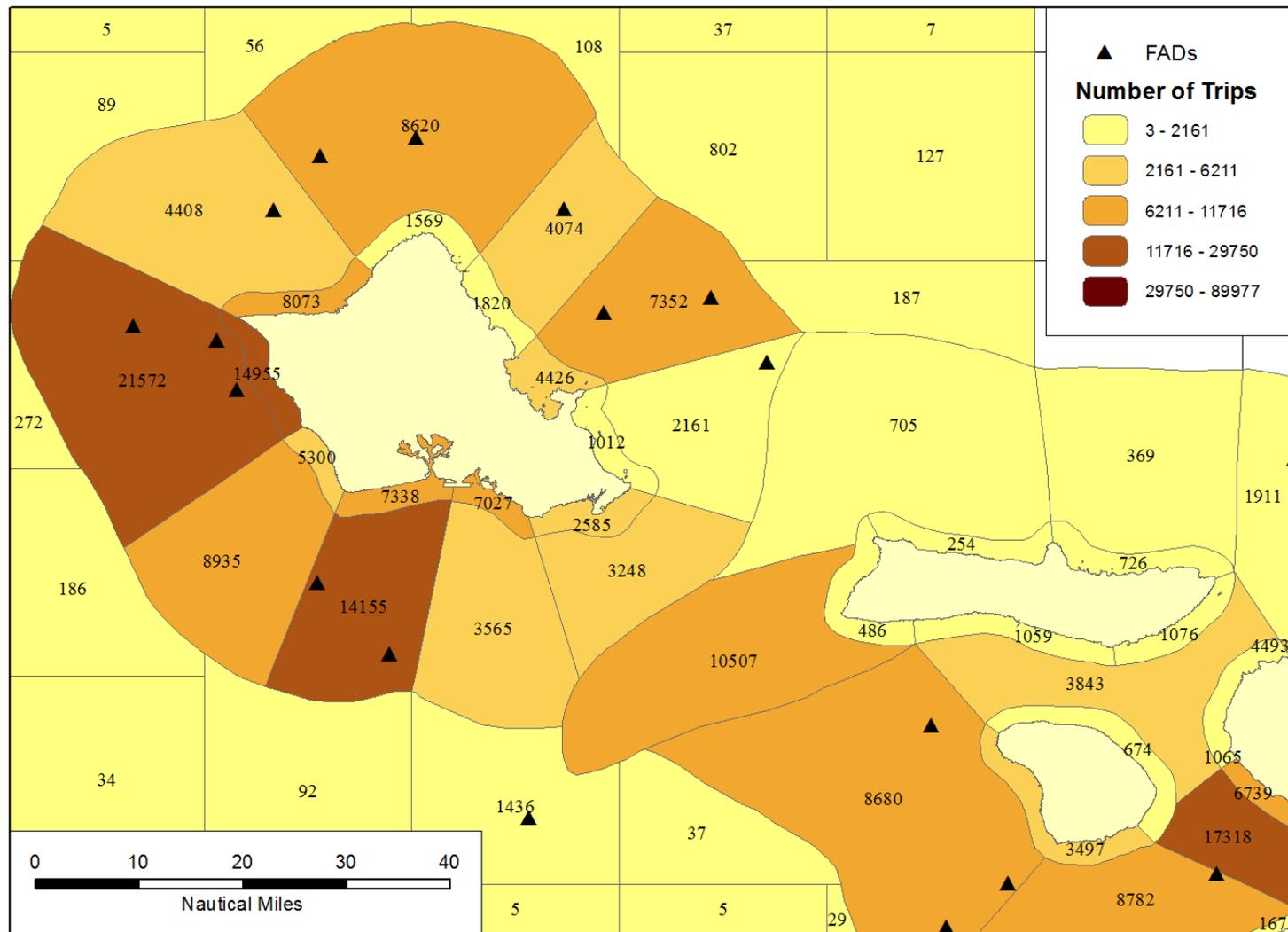


Figure 2. Number of boat-based commercial fishing trips per statistical grid area around Oahu for the years 2006-2015. Nonconfidential data are shown. Data are considered confidential when fewer than three records by fishing method per area per year exist. Commercial license holders often fish in the same area using different gears during a trip, therefore, this generates a separate trip count for each gear.

Commercial Fishing Trips by Boat-Based Fishing Method, 2006-2015

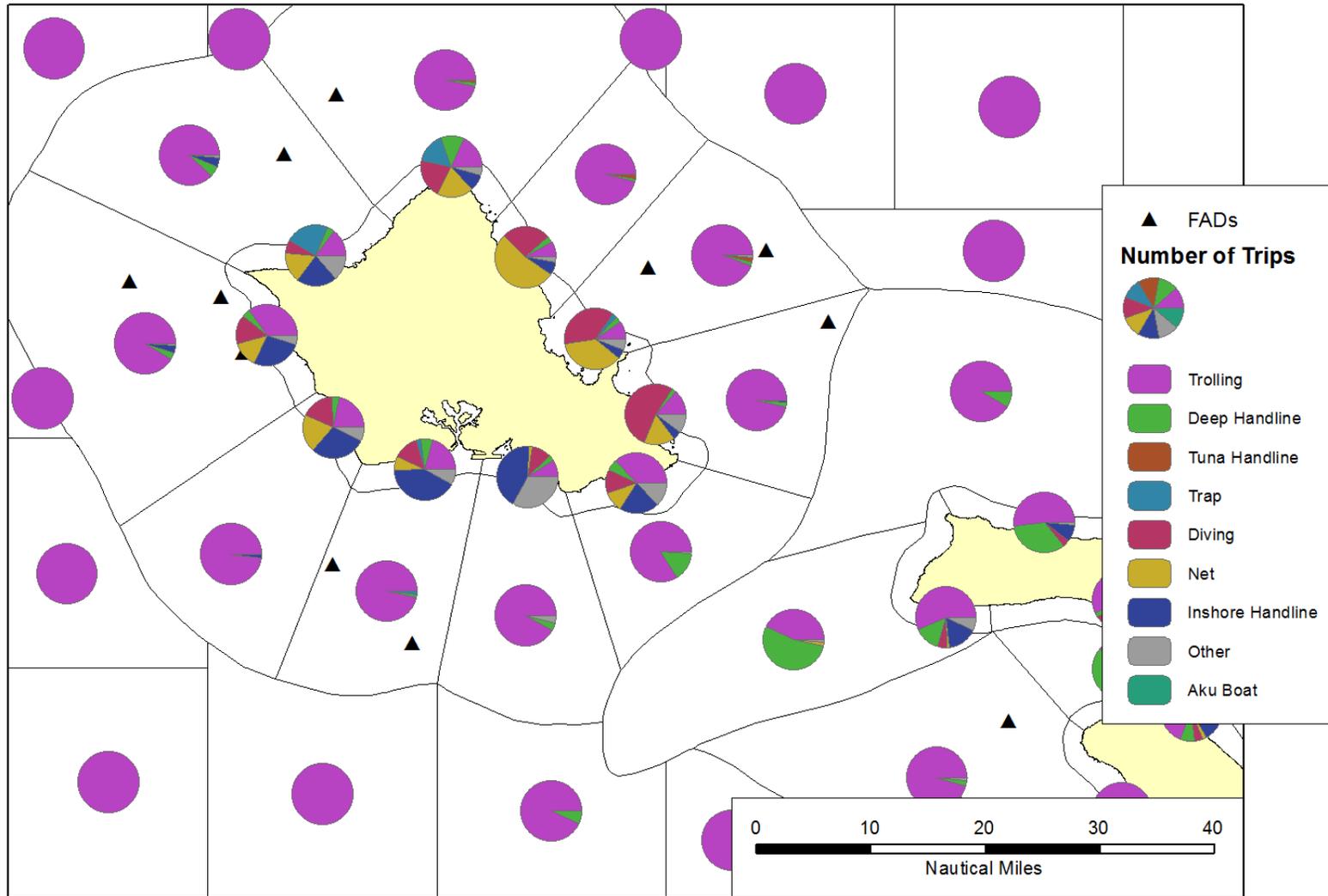


Figure 3. Proportion of fishing methods used in commercial fishing trips between 2006-2015 in each statistical fishing area. Nonconfidential data are shown. Data are considered confidential when fewer than three records by fishing method per area per year exist. Commercial license holders often fish in the same area using different gears during a trip, therefore, this generates a separate trip count for each gear. This map depicts the methods used in each statistical fishing area.

September 1, 2016

Western Pacific Regional Fishery Management Council Scoping Comments

Pacific Islands Fisheries Science Center (PIFSC) scientists have extensive surveying expertise in the proposed site characterization methods, including geophysical, geotechnical, and biological surveys. We support in depth consultation with the PIFSC scientists in order to determine potential impacts to the fisheries, fish populations, and fish habitat, as well as to seek input on the optimal survey designs for site characterization activities. To the extent practical, these activities should yield data that are comparable to PIFSC efforts to characterize benthic habitat, assess protected species populations, etc., so that the data may be useful not only to BOEM and the potential wind developers, but also to the Council, the National Marine Fisheries Service, and the State of Hawaii for natural resource management.

Potential Impacts during Site Assessment and Characterization

Potential impacts to federal commercial and non-commercial fisheries include:

- changes to species abundance and distribution during and after installation of the weather buoy and during conduct of the surveys;
- loss of access to fishing grounds during installation of the buoy;
- potential increase in catch at the weather buoy due to fish aggregating device (FAD) effect;
- potential disruption in fish migratory patterns from FAD effect;
- alteration of transit routes to or from fishing grounds;
- navigation hazards arising from increased risk of collision with vessels or with fixed infrastructure such as the buoy; and
- loss or damage of gear from snagging on infrastructure.

With respect to essential fish habitat, the Council recognizes that site characterization offers an opportunity to enhance the understanding of fish habitat present in the call areas. This information will inform the essential fish habitat consultation associated with construction, operations, and maintenance, should leasing in the call areas reach that phase.

Submitter Information

Name: amy kimura

Address:



Email:

Phone:



Organization: NA

General Comment

Energy-producing windmills should first be tested on a small scale in a very few areas. The effects/benefits/disadvantages should be assessed and publicized widely with modifications made to accommodate public comments before possibly gradually increasing the size and locations of more windmill farms. O'ahu, and all of the Hawai'ian island, residents are heavy ocean users year round: swimming, surfing, kayaking, boating, scuba diving, fishing, spearfishing, etc.

Windmills should not interfere with or curtail such activities, which are a highly desirable part of the lifestyles of many residents and also enjoyed by tourists, an important part of the economy.

Years ago there was a windmill farm on the North Shore that apparently didn't pan out, and the rusting windmills were long an eyesore. After the test period for these, windmills should not be abandoned. They should be removed and the ocean restored to its pre-windmill condition.

Anonymous

I am against wind leasing on Oahu's north shore. I believe that it will not only impact our fishing economy but I believe will negatively affect our tradewinds and surfing industry that directly correlates with the tourism industry.

Hawaii Scoping Meetings – Waialua (July 21)

Anonymous

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

1. Killing our birds! We just got a bird sanctuary at Kaena Pt. – so this equipment will attract fish which attracts birds & kills them with 6 foot wing spans – No No No
2. How many times do we have to spend taxpayer money for your salary to fly you out here to hear NO. Time to change these rules!

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

Destroy fishing, destroy tourist sunset views, kill birds – tell Mr. Obama & federal governments to go elsewhere! This state is different!

Other comments?

Go Home! We say NO! Do not come back!

Hawaii Scoping Meetings – Waialua (July 21)

Barbara Williams



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

-BOEM cannot build a web site that accepts comments (45 day?) but they are going to build giant windmills in one of the roughest channels in the whole ocean. I doubt this is possible.

-On Waianae coast check electric plant outfall – its electric beach. These platforms will be all that with birds on top

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

Windmills are not the way to gain energy – much better methods photo voltaic etc. Please do not pollute the ocean with this unrealistic mess.

Other comments?

Abby speech to open meeting so unprofessional – yikes bad start!

Hawaii Scoping Meetings – Waialua (July 21)

Blake McElheny

- A. Please disclose that BOEM Strategic Plan metrics (partially summarized in BOEM FY2017 budget Justification specifies that: # of EAs and EISs completed; # of leases issued; # of megawatts approved to determine if BOEM is doing a “good job”.

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

1. Why an EA and not an EIS?
2. How does this effort fit w/this Region's
 - A) Energy vision
 - B) Fair contribution to Oahu energy needs
3. Are there other alternative avenues for this Region to deliver the amount of MW conceived in Oahu?
4. How much fossil fuel will be burned during the life-cycle of the turbines?(construction of shoreline infrastructure; offshore maintenance operations by diesel powered tug-boats)
5. What is the net 'gain' to North Shore residents?
6. What is the net 'gain' to Oahu residents?
7. What is the net 'gain' to the US government?
8. What is the maximum number of turbines that could fit in the North Shore Call Area?

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

Other comments?

Bob -

7/21

Testimony and considerations for DEPARTMENT OF THE INTERIOR Bureau of Ocean Energy Management [Docket No. BOEM-2016-0049]

Environmental Assessment for Commercial Wind Leasing and Site Assessment Activities on the Outer Continental Shelf (OCS) Offshore the Island of Oahu, Hawaii; MMAA104000

In the balance of what do you get as opposed to what do you lose it is clear to many that the proposed use of the ocean in the waters off of Oahu have many draw backs that should be heavily weighted and be considered as valid reasons for this project to not move forward. It does not make good sense to have energy projects of this size scope and scale in sensitive areas.

You say wind! We say no too many negative impacts and too many unanswered questions. Potential conflicts of interest. If it go on the pay checks keep coming.

You ask for community input. We think that majority rule might be the best measure of go or no-go . If not how is this project assessment weighted?

It will be a blight and an eyesore. Federal and State involvement doesn't bode well, as other projects have failed or stalled. The corrosive nature of the ocean will impact the longevity of the turbines. Hurricane season and potential tsunamis will probably damage the large propellers. Worst case scenarios happen and engineers fail to anticipate all of the variables.

The following pages are in three categories although there is overlap: Environmental, Cultural, and Operational [other]. Many of the comments in this are comments that were made at other meetings . Many are new and some are embellishments and extensions of previous considerations. I have included them as I want you [the reader] to see not only what my opinions are but also opinions of others that I agree with.

I hope that this will help you see your way clear to drop this project. It is not right for this area for a fleet of gigantic wind turbine machines.

R
7/21/16

environmental

Yellowfin and other fish come through this area. They will gather around the turbines. Will fishermen be allowed to go out there to fish?

Will the turbines attract small fish like a aggregation buoy and then also more larger fish and more birds?

Will the Coast Guard put the turbine area off limits for safety reasons?

Huge danger to the birds not only from physical damage but also from pulmonary embolisms that may not cause sudden death.

Cable may set up an electrical field around it? what are the environmental implications

Cable instillation in near shore water and on land may well present environmental problems and permitting problems.

On the wind farms on Maui, they have a permit where they are allowed to kill a certain amount birds and bats, and then have systems to replenish it. Who will be going out to the ocean and picking up the dead carcasses out there? What do you expect to find?

Will this project benefit the ocean?

Environmental studies may be biased since the companies that are putting in the bid are conducting them?

Turbines could block the swells and affect industry, house values, and tourism

The site is right next to a sanctuary. It will attract feeder fish and birds will follow. Will a permit be requested to be able to kill some birds? How will the kill ratio be estimated and confirmed? Could this bird kill be enough to kill the project? Who decides the State DLNR or the Federal Wildlife?

The vibrations and acoustical intrusions will affect ocean mammals, reptiles, and fish customary migration patterns. How will the adverse impacts be measured with any accuracy?

RS
5/21/14

As a matter of environmental and social justice, why is BOEM still pursuing this when there are other renewable resources and the community has denied it? What's to stop BOEM from allowing mining in these waters, too? How much further will the development go. Will the lease have specific stipulations about what may be allowed and what will not be allowed? There are a lot of injustices happening; laws broken. The US has not signed on with many of the environmental protection maritime laws and the UN.

Is the project Phased?

Environmental concerns:

1. Ka'ena seabird colony is important (albatross, shearwater, and boobies forage for 50-100 miles and this is the corridor they use)
2. Humpback whales in the winter time -- tension leg cables will create a forest in water that will be marine mammal problem (exclusionary or entanglement)
3. Features of the area - shallows and then a break-off point - mean this is a major fishing area and the wind turbines will attract even more
4. Swell and hurricanes that come through that channel may pose a problem for both the anchors and the turbines

Ka'ena, the western point is a federally protected natural reserve. It is a Natural Area Reserve that has been nurtured by the community for many years to build up wild life . It is an enclosure where endangered animals can often be found.

The wind corridor off of Ka'ena Point is used by seabirds to traverse to their feeding grounds. Over five miles of turbines in that wind corridor would be guillotines for the birds.

RF
7/21/16

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The wind corridor off of Ka'ena Point is used by seabirds to traverse to their feeding grounds. Over five miles of turbines in that wind corridor would be guillotines for the birds.

Handwritten signature and date: 1/21/10

Operational

Other projects have failed or stalled like the original wind farm in Kahuku

The corrosive nature of the ocean will impact the longevity of the turbines. Hurricane season and potential tsunamis will damage the large propellers.

It will be a blight and an eyesore.

Will this project save me any money?

How much insulation sheathing will be left after a few years on the 12 miles of cables running to the land? How much transmission loss can we expect? What will happen to the temperature of the cables and surrounding waters? What damage will that cause?

Cable may set up an electrical field around it? What are the environmental implications of this?

Cable instillation in near-shore water and on land may well present environmental problems

Fix the HECO system instead.

RISK ...HECO determines a lot; they can decide not to buy any of the energy. It doesn't behoove them to agree to plans that will reduce their profits.

RISK Millions and years into the project HECO can cancel the project due to some default mile stone as they did with SunEdison

RISK BOEM lease suspensions possible when what sort of circumstances arise?

RISK The PUC may not provide a favorable ruling at some point

The potential for conflicts of interest seem evident, both in the proposed studies and the bureaucrats that are being paid to keep the "process" moving forward.

Turbines could block the swells and affect industry, house values, and tourism

What are examples of other similar ocean based anchored wind projects that have a successful track record?

What are examples of other project that have not moved forward and what were the determining factors that terminated the project(s)?

Who or what people make the go ... no-go decisions and what factors are the most heavily weighted?

National Renewable Energy Lab has done the wind assessment based the data from models. So how is that information weighted in relation to community concerns? There are many places windier than Oahu in Hawaii.

Will this project require government subsidies or qualify for tax breaks from the Federal Government or the State?

Approximately how far will we need to stay away from the wind turbines if the Coast Guard determines that safety demands a perimeter?

In the event of breaches of contract or law who has jurisdiction? Who may sue whom? Should the process start by ensuring HECO will buy the energy created?

The amount of energy produced will not be enough to merit the wind turbines' construction. What happens if HECO puts a big percentage of its electrical needs in to wind turbines and the wind stops or is insufficient? Natural forces vary a lot. .

Will the turbines will affect planes or any DOD operations?

How far distant will the red blinking lights be visible at night?

As a matter of environmental and social justice, why is BOEM still pursuing this when there are other renewable resources and the community has denied it? What's to stop BOEM from allowing mining in these waters, too? How much further will the development go. Will the lease have specific stipulations about what may be allowed and what will not be allowed? There are a lot of injustices happening; laws broken. The US has not signed on with many of the environmental protection maritime laws and the UN.

.How much might property values diminish that deal with the intrusion on the view?

What would the total carbon foot print be to crate 51 wind turbines including the manufacture of component parts and fully installed?

How is the specific distance from shore determined ... and why 8 miles? At other time we were told around 15 miles.

How can residents of North Shore and Waianae Coast be involved with the intergovernmental task force? And what agencies are represented?

Who is on the list of governmental agencies that must review this project?

:How have other areas stopped similar leases? What can we apply here?

Maui and Lanai didn't want offshore wind, and their primary rationale was cultural. The cons of this project largely outweigh the pros of this project. It won't help tourism, diminishes access, use untested technology, and expend a lot of fossil fuel to construct. The community meetings feel disingenuous. The farther along the process you get, the more money spent, the harder it gets

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to stop. It seems that when the government comes up here to talk to us, they make up their minds even before they walk in the door of the community meeting. Even if they say that the EIS is a disaster, it would get accepted because they told the truth. We should explore the alternatives.

Turbines will probably affect the large, important radar system on Ka'ena Point, which protects our country

[Barbers Point] There is a lot of vessel traffic: shipping tankers, mooring points, and military. Even if the turbines don't pose a hazard, a ship might lose its steerage and pose a danger to the wind farm.

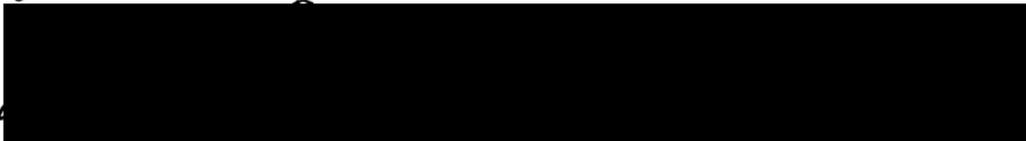
Right now is just the beginning of the planning process. After 1 year of initial studies, 5 years of site assessment and characterization, and approval of the construction and operations plan and review of engineering reports, the lessee has 25 years to construct and operate before the project is decommissioned. Once big money is in the game it gets harder and harder to cancel the project if/when it turns bad.

BOEM does not necessarily look at the financial side of the project but it should. Good money government or private should not be moved into an investment without a through financial assessment. The PUC is the end game and they will evaluate the cost of the project to HECO and approve their billing rates. If it doesn't benefit the community, they won't approve it. State of Hawaii and County of Honolulu has the final approval. But it is too late in the game.

I'm concerned that the first phase will be accepted and initial environment reviews will be approved, and that will cascade until it will be impossible to stop the project even though it isn't right for here.

The electrical hook up needs to be understood from the beginning ... the whole project ... not one piece here and another there. Land side plans should not roll around later.

From:
Robert's LEIWAIA aka "Bob"



RJ
1/21/16

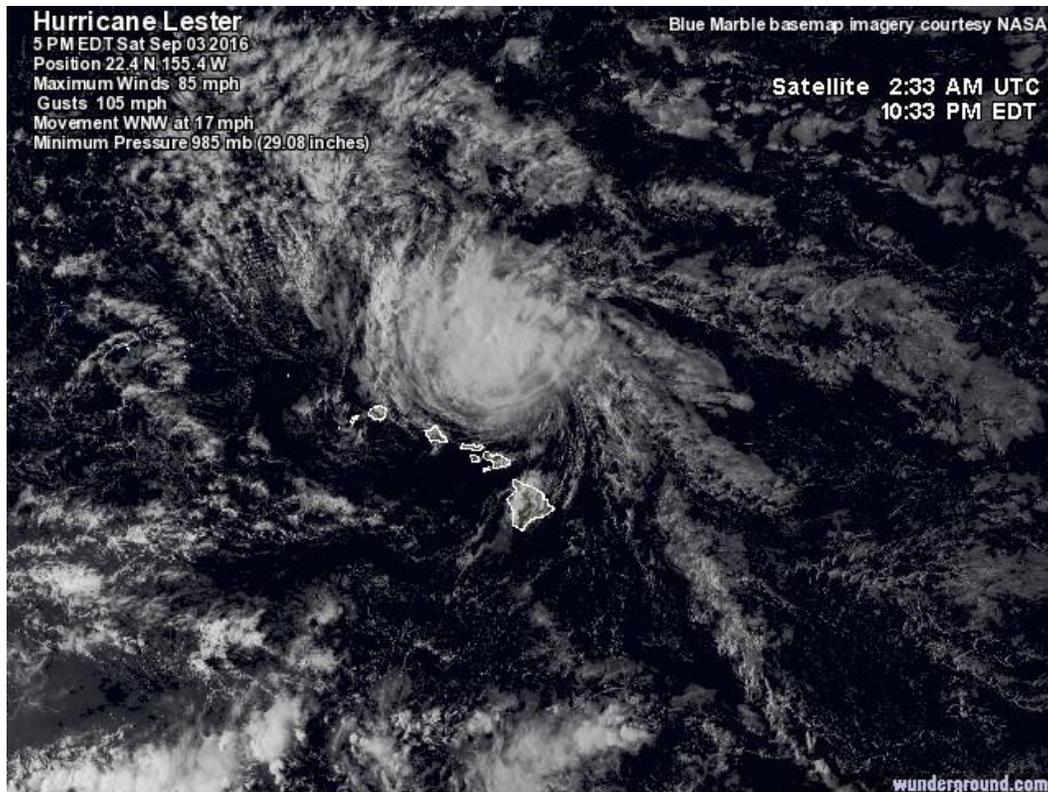
My name is Brandon Martyn, I was born and raised in North West Oahu, specifically in Mokuleia. Based on my personal experiences with the ocean and my science education, I have to conclude that the enormous dangers and disadvantages of the proposed deep water wind farm in the waters off Kaena Pt. vastly outweigh the potential benefits of such a project.

Safety

Human and environmental safety must be considered above all else in any project. The technology to anchor wind turbines of this size in waters of this depth has not been developed or tested anywhere in the world. The approximate water depth in the call area off Kaena Pt. is 1000 meters or 3280 ft. The deepest a single floating turbine has ever been anchored is in Fukushima Japan a depth of 150 meters or 492 feet. The Japanese have not yet declared their experimental model safe or effective. AWH is proposing to place 50 to 100 of even larger turbines in waters over six times deeper than the Japanese experiment. The deepest that Principal Power's technology, which is the technology that AWH is proposing to use, has successfully anchored a single turbine is 48 meters or 158 feet. This means that AWH is proposing to position these 600 feet tall experimental turbines in waters over 20 times deeper than their company has ever done before.

There is a massive difference in ocean conditions between Denmark and the waters off Kaena Pt. The biggest surf swells on the planet pass through the waters off North West Oahu every year. The Danish have no experience with these kinds of ocean conditions. This proposed project is an experiment with the forces of nature. Anchoring these massive turbines to the ocean floor at this great depth has not been proven. Due to the close proximity of the proposed turbines, if one turbine breaks anchor its chains will cross and tangle with neighboring chains of adjacent turbines. The consequences of even a single turbine breaking anchor will be catastrophic. If one of these 600 ft. turbines were to wash ashore the damage to the environment and property will be devastating.

Hurricanes are a threat to the Hawaiian Islands every single year. In 1992 category 5 hurricane Iniki crossed through the proposed project area before devastating Kauai. Last week Hurricane Lester passed within a few hundred miles of the proposed project area. **AWH turbine technology is not Hurricane proof.** If the current turbine prototypes were to receive a direct hit from a hurricane the leverage of the 600 ft. propeller will cause them to break anchor. Jens Peterson CEO of AWH admits that this technology has not been developed to withstand a hurricane, but says that the chances of a hurricane in this area are small. However, just last week hurricane Lester passed very close to this exact spot!! Imagine the carnage of a hundred massive storm ravaged turbines, bent propeller blades, and tangles thick power cables washed ashore. Houses would be at risk, the Haleiwa harbor would be at risk, and most importantly the nature preserve at Kaena Pt. would be at risk. It will cost billions to build these turbines, but it will cost many times more to clean up an experiment gone wrong. The damage might be permanent, and the potential for loss of human life is real. AWH does not have the money or capability to clean up if a hurricane strikes.



Hurricane Lester positioned very close to proposed wind farm call area(NOAA satellite image sep.4 2016)

Environmental Cost

The proposed wind farm would be a serious threat to endangered and protected humpback whales, monk seals, and albatross. Below the water the anchor chains from these turbines will have to extend several miles in at least 4 directions for each and every turbine. The noise pollution from vibrating cables and floating platforms and the disrupted sediment from slipping anchors will impact fragile marine ecosystems. The electromagnetic radiation from the energy cable lines will also be harmful to electrical sensitive marine organisms.

The crossing pattern of anchor chains needed to secure the turbines will be a 3d fish net, and we don't even know that the turbines can be secured at this depth, it has not been done before. Add in the hundreds of miles of high voltage power cables needed to link each turbine together and what you get is **the world's largest electric whale net**. Humpback whales are present in large numbers in the waters off Kaena Pt. from November through April. They will likely get trapped in this underwater maze of chains and power cables.

Above the water there is a large threat to endangered albatross. The preserve at Kaena Pt. is the last remaining nesting ground for albatross in the 8 main Hawaiian Islands. The albatross migrate between Kaena Pt. and the north western Hawaiian Islands, putting their flight path right through the wind farm. These turbines will disrupt the migration of endangered and protected albatross. The threat from the turbine's blades will be significant, because albatross fly lower than 600 ft. Also the power

cables which will transfer the power to land will come ashore in their nesting ground. The construction of high voltage transformers and power lines will also pose a significant threat to Hawaii's last remaining albatross population.

Our environment is Hawaii's most precious economic resource. Hawaii's tourist industry is what keeps our state afloat. Our pristine natural environment is what attracts visitors to our state. It is the main reason the rest of us live here. The iconic view of the north shore sunsets brings millions of dollars into our local economy. Placing hundreds of 600 ft. turbines in that picture is not sexy. Furthermore the single greatest tourist attraction to the north shore is our surf. These massive turbines positioned in multiple linear rows have the potential to distort ocean waves as they pass through the extensive network of undersea anchor chains. The swells that produce the best quality waves on the north shore come from the North west direction. Surf breaks featured in the world famous Triple Crown contest (Pipeline, Sunset Beach, and Haleiwa) come alive from West North West swells which would have to pass through the proposed call area. These surf breaks are critical for our north shore economy. More importantly they have shaped our cultural heritage. Risking the quality of the surf on the north shore will affect not only our tourist economy, but also the natural wonder of the north shore.

Economic problems

Deep water wind technology doesn't yet yield the power supply needed to justify the project. The AWH wind mill technology in Portugal produced only 29% of claimed energy production potential. The technology needs at least another 10 years of research before it can hope to make economic sense. Solar power has a far better investment return record in Hawaii than wind power.

There are 2 other wind farms on the north shore already, and both have failed to pay off!! The farm in Kahuku sits on an excellent location to capture trade wind energy, however, its battery station melted down and has been rendered useless. The farm in Pupukea has so far failed to break even on its construction cost. This proposed off shore wind farm will be the most expensive wind farm in the history of the world. If wind projects on land can't pay the bills, then how will off shore wind turbines pay for themselves? Off shore wind turbines will cost several orders of magnitude more to construct. However, the biggest economic problem is not construction, its maintenance, and decommissioning. These turbines will be made of steel and will rust away far faster in the warm tropical waters of Hawaii than in Portugal where the technology of AWH has been tested. I've lived in this marine environment all my life and have witnessed that even 316 grade stainless steel will rust. These proposed turbines won't even be galvanized. This project idea is laughable! It's very expensive to maintain anything at sea. If the on-shore wind mills can't pay the bills then there is no possible way that maintaining rusting turbines 10 years after construction will be economical.

Commercial fishing will be restricted if the lease is granted. Commercial fishing relies specifically on the waters in the proposed call area. This one of the few remaining rich fishing waters around Oahu. Our ability to locally produce food is an even larger sustainability and safety issue than energy in Hawaii. Blocking these waters off from commercial fishermen will negatively affect local people's livelihoods, as well as reduce our Islands' local food supply. We already have to import 85% of our food from the US mainland and Asia, this wind project will exacerbate our food security problem.

AWH doesn't have the resources to decommission the turbines at the end of their projected life span. AWH is comprised of mostly foreign nationals who will be long gone when it's time to clean up. Their claim that scrap metal recycling companies will do the job for free is childishly naïve. Hawaii has no steel recycling facility. It is cheaper to mine new steel in China than to ship that much steel to a steel recycling facility--let alone the cost to take to sea and dismantle the aged and rusted turbines 20 years from now. It would be unethical to lease these federal waters to a company which does not possess the ability to clean up after itself.

Substitute Solar Energy

Solar power makes way more sense for economically producing renewable energy in Hawaii. Solar doesn't come with the risks of disaster that this untested experimental technology comes with. Why would we even consider investing billions of dollars in experimental technology which we know won't give a positive return? We have land based solar technology, which can lead Hawaii to its 100% renewable energy goals if we maximize our efforts on this front. Solar is cheaper and more cost effective. Solar doesn't have the extreme risk to our environment and economy that this proposed off shore wind farm will have. We should not let a corporate entity comprised of mostly Europeans who have no experience in Hawaiian oceans to profit at our expense.

Burton Greene



I STRONGLY OPPOSE THE BOEM INTENDED PLAN TO INVESTIGATE AND EVENTUALLY SITE POTENTIAL WIND FARMS OFF THE OUTER CONTINENTAL SHELF OFFSHORE OF THE ISLAND OF OAHU, HI, THUS DESTROYING EVEN MORE OF THE ASTHETICS OF WHAT MAKES HAWAII ONE OF THE MOST DESIRABLE UNIQUE DESTINATION ON EARTH

Submitter Information

Name: Carl DeForest

Address:

[REDACTED]

Email:

[REDACTED]

Organization: NA

General Comment

Aloha, There are just so many reasons not to put a wind farm offshore that should make you rethink your request. I therefore will limit my comments to the whales along with the changes in the ability to fish these waters. WE do so much to not interrupt the whales migration and calving and this wind farm will be one of the worst things we could do to them. The fishing as you know would change with all the regulations that will go with the wind farm. The fish will congregate there and local fisherman would be banned from fishing there, outrageous. One last comment on all the birds that are protected getting killed by your wind farm. There are better ways to lower fossil fuel use than this wind farm. Please consider how much this means to all of us who are not making a profit from this project.

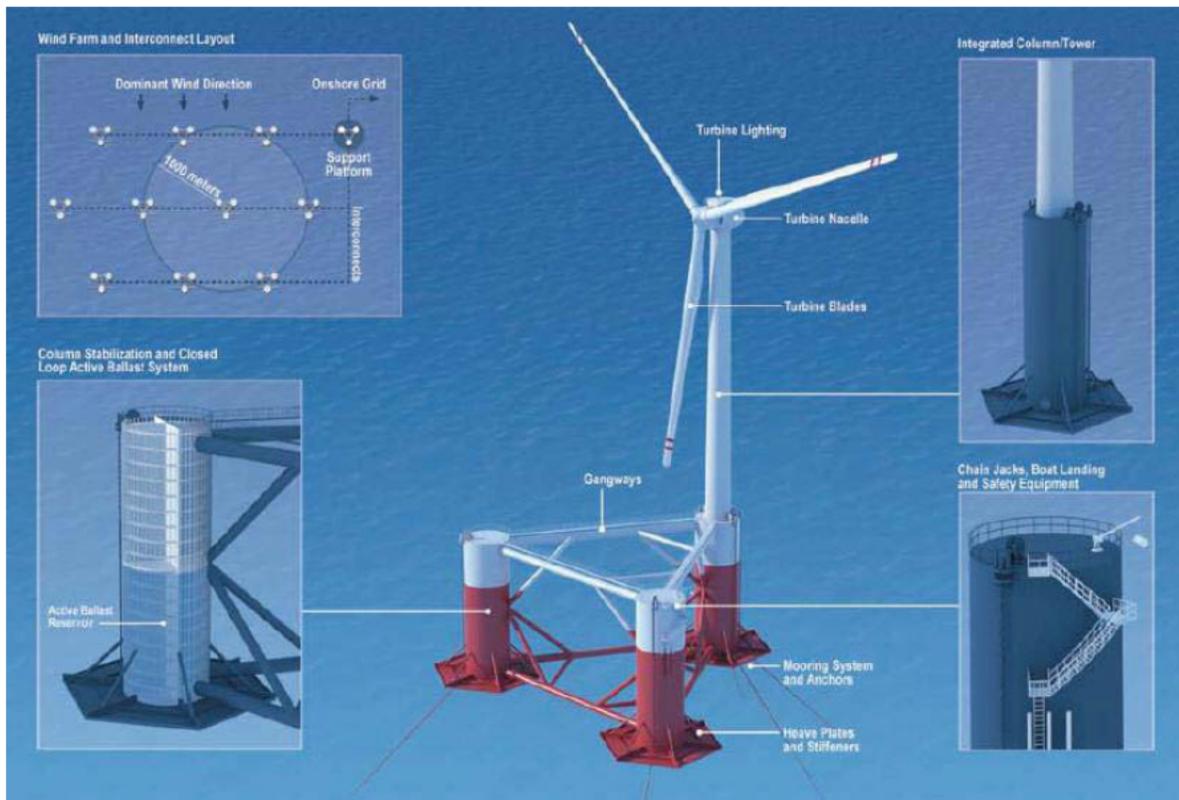


The Proposed Offshore Windmills Will Likely Hurt the Size and Quality of Surf

The proposed offshore windmills have the potential to seriously negatively impact the quality of surfing. The windmills could result in a decrease in the size of surf, and a very large decrease in the quality of surf, at many of the premier surf breaks on the North Shore of Oahu, and also on the Westside. The quality and "cleanness" of surf at the following world famous surfing breaks on the North Shore could be adversely affected: Haleiwa, Waimea Bay, and Pipeline (along with numerous lesser-known surf breaks also being affected), and also the Westside surf breaks at Yokohama, Makaha, and Ma'ili.

The northern "call area" for the proposed windfarm off Kaena Point extends many miles north of Kaena Point. For Haleiwa, swells from the west all the way to the northwest would have to pass through the wind farm "call area" in order to reach Haleiwa. For Waimea Bay and Pipeline, swells from the west and west-northwest would have to pass through the windmill farm "call area" before reaching those surf breaks. Those are some of the best surf directions for Haleiwa, Waimea Bay and Pipeline. For the Westside surfbreaks, such as Yokohama, Makaha, and Ma'ili, almost all winter swells would have to pass through the windfarm "call area" before wrapping around Kaena Point into the Westside.

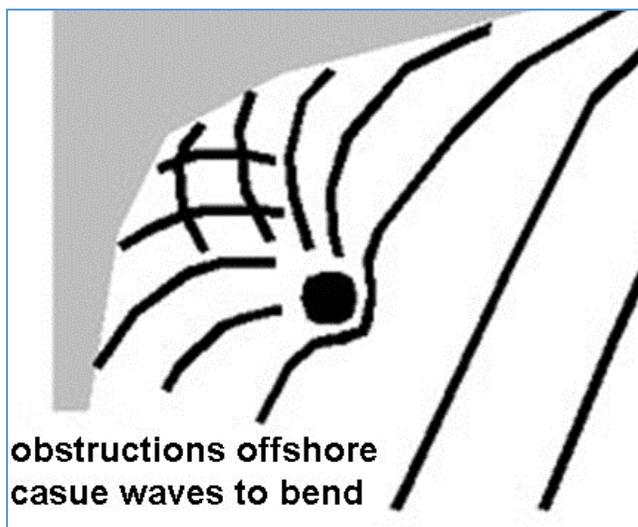
The ocean lease applicant for the northern "call area" (an entity called AW Wind Hawaii, LLC which is led by a Danish citizen, Jens [pronounced Yens] Peterson) proposes to build at least 51 floating windmills, and is clearly trying to reserve the option to build many more, possibly 100 or more. Each floating windmill is proposed to be built on a patented "Wind Float" platform similar to the photo shown on the applicant's application. The photo on the application is of a single demonstration Wind Float windmill that was built in northern Portugal. Here is a diagram from the application:



The Wind Float platform that was built in northern Portugal is anchored in water that is only 40 to 45 meters deep. In contrast, the waters in much of the northern “call area” off Kaena Point are about 1,000 meters (3,300 feet) deep. That is 5 to 6 times deeper than anyone anywhere in the world has ever successfully anchored floating windmills, and more than 20 times deeper than the applicant’s demonstration Wind Float in Portugal.

The demonstration Wind Float in Portugal is anchored by four steel-cabled anchor lines that spread out in four directions. The Wind Float itself consists of three large steel semi-submersible cylinders that have a diameter of 10 meters each (33-foot diameter each), and extend down more than 70 feet into the water. The three cylinders are set in a triangle held together with various steel tubes and cross braces, and the windmill tower sits on one of the three cylinders. The single demonstration Wind Float in Portugal has a 2.4 MW (megawatt) Vestas brand wind turbine. For Hawaii, the applicant is proposing to use wind turbines in the 6 to 8 megawatt (MW) range. As a result, the size of the Wind Float cylinders that would be needed in Hawaii will be even larger than the ones used in Portugal.

Even with the smaller size of the Wind Float in Portugal, the total cross section of steel for each Wind Float will be 99 feet (three times the 33-foot diameter for each cylinder). Each cylinder would extend more than 70 feet down into the water, and then connect to the anchor cables. Even if only that smaller-sized Wind Float were built, and even if the applicant only built 51 of the windmills, that would mean a total metal cross section that waves will have to hit of about 1 mile. (51 times 99 feet equals 5,049 feet, and there are 5,280 feet in a mile.) If the applicant ends up building 100 larger sized Wind Float windmills (to accommodate the 6MW to 8 MW wind turbines it plans), then the total cross section of metal, that waves will have to hit, would be more than 2 miles.



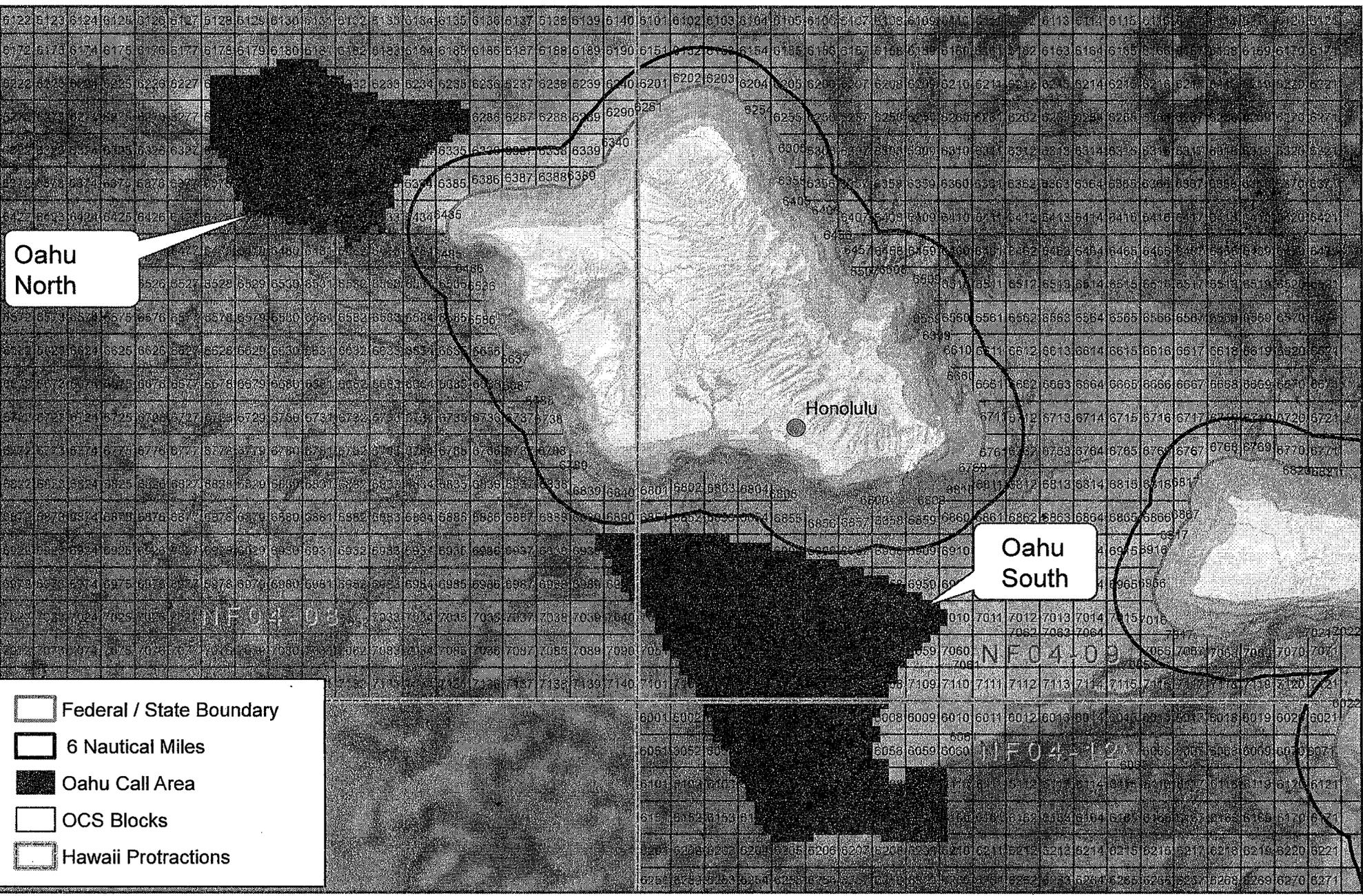
Perhaps even more important than the one to two miles of total metal cross section that waves will run into, is the shape and configuration of the metal. The portion of a wave hitting and passing through a single Wind Float will have three large 33-foot-diameter metal cylinders (or larger) in a triangular shape in relatively close proximity to each other. As the waves hit a metal cylinder they will bend around and ricochet off in both directions laterally, and portions of the bent and ricocheted wave energy will hit the other 33 foot cylinders almost immediately. As a wave hits and passes by the

cylinders, the interactions of the deflected energy will be very complex. The deflected wave energy (what surfers would call a “side wave”) will soon move laterally (on an angle) enough to interact with deflected wave energy from the adjacent windmill in that row, as the side waves wedge into each other. In addition to at least some net loss of swell energy reaching the world famous North Shore surf breaks and the Westside surf breaks, there is likely to be a very a significant increase in the messiness of the swell energy (in other words, a decrease in the “cleanness” of the swell energy that surfers want) as it hits and passes through the Wind Floats.



The problems with the decrease in "cleanness" of the wave energy, and increase in the messiness from the random deflected waves, will further increase as the wave and swell energy passes through the next row of Wind Float windmills.

Other proprietary offshore floating windmill designs (for example, the single cylinder “spar bouy” floating windmill design owned by Statoil, which is not available to this applicant) would likely have much less negative impact on surf quality, so the impacts of this applicant’s proposed 3-cylinder “Wind Float” proprietary technology should be studied now, before any lease is granted to this applicant.



Hawaii Scoping Meetings – Waialua (July 21)

Denice (Necae) Kuehu



“This ‘small’ piece of paper is a set up. No one can fit concerns here!”

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

1. Failure of promise: example Nantucket (destruction of our precious resources)
2. We said “NO” not once but twice, not 3x but 4x’s we said “NO”.
3. Any type of turbines should not be included.
4. This project is Pre-Fixed and we do not approve.
5. Look for another location.
6. Assessments are falsified. The truth is not included in the 5 year process.

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

1. Pollution
2. Culture
3. Daily(sp?) on the ocean life
4. Location
5. Host Community said “NO”
6. Waianae and Waialua said “NO”. (Listen)

Other comments?

Environment and Community is priority

Submitter Information

Name: Roberto Lopes

Address:

Email:

Organization: NA

General Comment

My family opposes the Kaena Point North Shore Wind Farm

See attached file for supporting information

Thanks for your consideration

RE: Comments on Hawaii EA; Oahu North Site

September 7, 2016

Regional Director

BOEM Pacific OCS Region

760 Paseo Camarillo

Suite 102

Camarillo, California 93010

Dear BOEM Regional Director:

We are writing to express our concern regarding your proposal to consider leasing ocean waters off Ka'ena Point for wind farm development – our comments are limited to the O'ahu North portion of your proposed action. We will do everything practicable to block wind turbine installation at Ka'ena. A wind farm at this location would be an affront to our kānakamāoli, bar us from important fishing grounds, ruin our sunsets, rob ocean energy and disturb our world-class west and north swells, reduce our financial net worth, mar our night sky with industrial red blinking lights, contaminate our ocean, kill our wildlife, cause fear and stress in the dying moments of all O'ahukānakamāoli. We believe any purpose or need you may have for a wind farm in our ocean could be met, without these adverse environmental and cultural effects, with installation of solar and utility-scale battery storage. Kamehameha Schools, residents, and businesses in Hawaii are being blocked from installing solar PV by our utility company – while you consider authorizing development of this egregious project - 'A'ole! E mālamanalu. Include solar with battery storage among the alternatives you fully consider in your NEPA documents.

In August 2015, the North Shore Neighborhood Board informed the wind farm developer the North Shore would not allow wind farm development off Ka'ena Point; you and your applicant have met in private with the North Shore Neighborhood Board President and other leaders of our community. At your agency's July 21, 2016, well-attended public meeting on the North Shore, all speakers and, in two votes, all public attendees, unanimously opposed any further consideration of the Kae'na (Oahu North) site. On page 6 of your March 7, 2012 Hawaii Task Force PowerPoint http://www.boem.gov/uploadedFiles/BOEM/Renewable_Energy_Program/State_Activities/Task%20Force%20Purpose%20BOEM.pdf%20030712.pdf you indicate one purpose of the Task Force is to coordinate with Federal and local agencies and tribes to ascertain potential conflict areas such as "environmental, fishing, military, navigational, air space, etc." "as early as possible and throughout the process". As a result of your coordination since 2012, you have excluded certain areas from further at-sea wind farm consideration due to certain criteria while the concerns of Native Hawaiians and the North Shore community do not appear to have been heard. If you do continue to pursue Ka'ena the Oahu North site development as a wind farm, ensure your NEPA documents include a thorough disclosure of the effects the project would have to the following important aspects of our lives:

I. Leina a ka `Uhane, white rock limestone k̄anakamāoli soul leaping formation

Situating a wind farm offshore from Leina a ka `Uhane white rock limestone soul leaping formation is an affront to Native Hawaiians and to those of us who care for Native Hawaiian rights. Near death, k̄anakamaoli of O'ahu travel west to Ka'ena Point where the fate of departing souls is determined as death nears. When the person's brush with death is fleeting, they survive to return another day. Departing souls would either pass into one of several spirit realms or be returned to the body to continue life. If the proposed wind farm were to be constructed, O'ahuk̄anakamaoli would see the wind turbines or, at night, bright blinking industrial lights as they travel toward the Leina a ka `Uhane. This industrial scene could cause fear and stress - irreparable injury - in the final moments of life of O'ahuk̄anakamāoli. Will the turbine blades be stopped from spinning when an Oahu Native Hawaiian nears death or dies; how quickly can the blades be stopped and how long will they be kept off after the death to assure safe passage of the soul? In the night when someone is close to death, can you please turn off the bright industrial blinking lights so they don't feel confused and frightened when they arrive at Ka'ena Point?



Figure 1. Leina a ka `Uthane, the location O`ahukānakamāoli travel to near death; departing souls pass into one of several spirit realms from this limestone rock formation.

Native Hawaiian families with lineages from all aapuaa on O`ahu would be irreparably harmed by wind farm development in the O`ahu North site due to the effect to them as they approach the Leina a ka `Uthane white rock limestone soul passage formation in their dying moments. Therefore, coordinate directly with all local members of these lineages to develop measures to minimize, avoid, and mitigate for the adverse project effects. Every native Hawaiian on O`ahu who will face death during the 50 year term of your wind turbine installation may be irreparably harmed by installation of a wind farm off Ka`ena Point. Some of these people have not even been born yet, so even if you wanted to, it's not possible for you to "coordinate" with them to buy their support. Their ancestors can't sell their rights to peace in their final moments. List all persons consulted and dates of consultation in an appendix in your Draft NEPA documents.

We can't fathom why, given the several years of coordination your website indicates you indicate you have done with various entities in Hawaii, areas of the North Shore within sight of the Leina a ka `Uthane formation haven't been removed from wind farm consideration already. It's impossible to mitigate for the adverse effect an at-sea wind turbine would have to Native Hawaiians. We hope your applicant withdraws their application for proposed wind farm development in the waters off Ka`ena Point. Please do not give further consideration to wind development at this "O`ahu North" and any other ocean site within view of Leina a ka `Uthane formation.

II. Ensure NEPA "Purpose and Need" Reflects the Public's Interest, not just the Applicant's Interest.

Ensure the purpose and need in your NEPA documents is not limited to the permit/lease applicant's purpose and need (to develop the wind project); the NEPA Purpose and Need should express the proposed action's underlying purpose and need from a public interest perspective. Your online

documents make it clear that you are pursuing these projects to help meet Hawai'i's clean energy needs. The significant adverse effects of at-sea wind development should be presented along with an equally-thorough analysis of alternatives that would meet the public's purpose and need for clean energy. The public prefers solar PV with battery storage (see next section) to the proposed Ka'ena wind project because the social, cultural, spiritual, and environmental effects of the wind development are so severe. To assess the solar/battery storage alternative, the Department of Energy could be a participating agency in your NEPA; GAO may be able to assist as it relates to government efficiency. The purpose and need statement should be crafted to reflect a need for a certain mW of energy during certain periods of the day/night on a certain percentage of days. Sideboards on the purpose and need should be explained. Take care to not craft the purpose and need so restrictively it precludes options other than the at-sea wind development. If your future decisions entail selection of the Ka'ena Point Wind farm, the burden is on you to explain how the wind farm alternative serves the public's interest better than the alternatives. Mark Glick listed biofuel and neighbor island renewables as alternatives in his May 2016 Task Force presentation (Figure 2). In addition to biofuel and neighbor island renewable energy listed by Mr. Glick, we suggest the addition of on-island PV with battery storage to your list of the alternatives you fully consider.

III. Include Assessment of O'ahu-Based Solar PV/Energy Storage Alternative

The public interest would be better served by any number of alternatives including on-island solar PV with battery storage, rather than this horrible Ka'ena Point wind development. Your NEPA assessments should include an onshore solar with energy storage alternative. Many, many other alternatives come to mind that would receive more public support and less public outrage than the proposed Ka'ena Point wind farm project – many are in the news – please coordinate with DBEDT, HECO, and current alternative energy producers in Hawai'i to develop alternatives to the proposed action, including solar PV with battery storage.

A condition of any authorization, permit, or other approval BOEM gives to an offshore or off-island wind developer at the "Oahu North" site should be that the wind developer include assessment of an on-island solar PV plus energy storage alternative. Analyze the PV + energy storage alternative for the years beginning in 2022 (five years from now, when the U.S. Department of Energy projects battery storage will be competitive and affordable) through the remainder of your 50-year permit term. If the wind farm will be operational prior to 2022, there would be energy produced by the wind alternative but not for the solar/storage alternative for that year of the analysis. Include this land-based PV plus energy storage alternative among those you fully consider in your NEPA documents.

Mark Glick's 2016 PowerPoint at the Task Force meeting <http://www.boem.gov/Hawaii-State-Administrator-Presentation/> indicates on-shore Oahu energy generation is not going to be sufficient to meet State 100% clean energy targets and HECO's preferred energy source is 800 MW of offshore wind to meet the shortfall (Figure 2). 800 MW would entail, for example, 100 8-MW wind turbines. The proposed 400 MW Ke'ena Point offshore wind project could be replaced with solar and battery storage that IS feasible, tested, proven WITHOUT the adverse effects to the environment addressed in this letter.

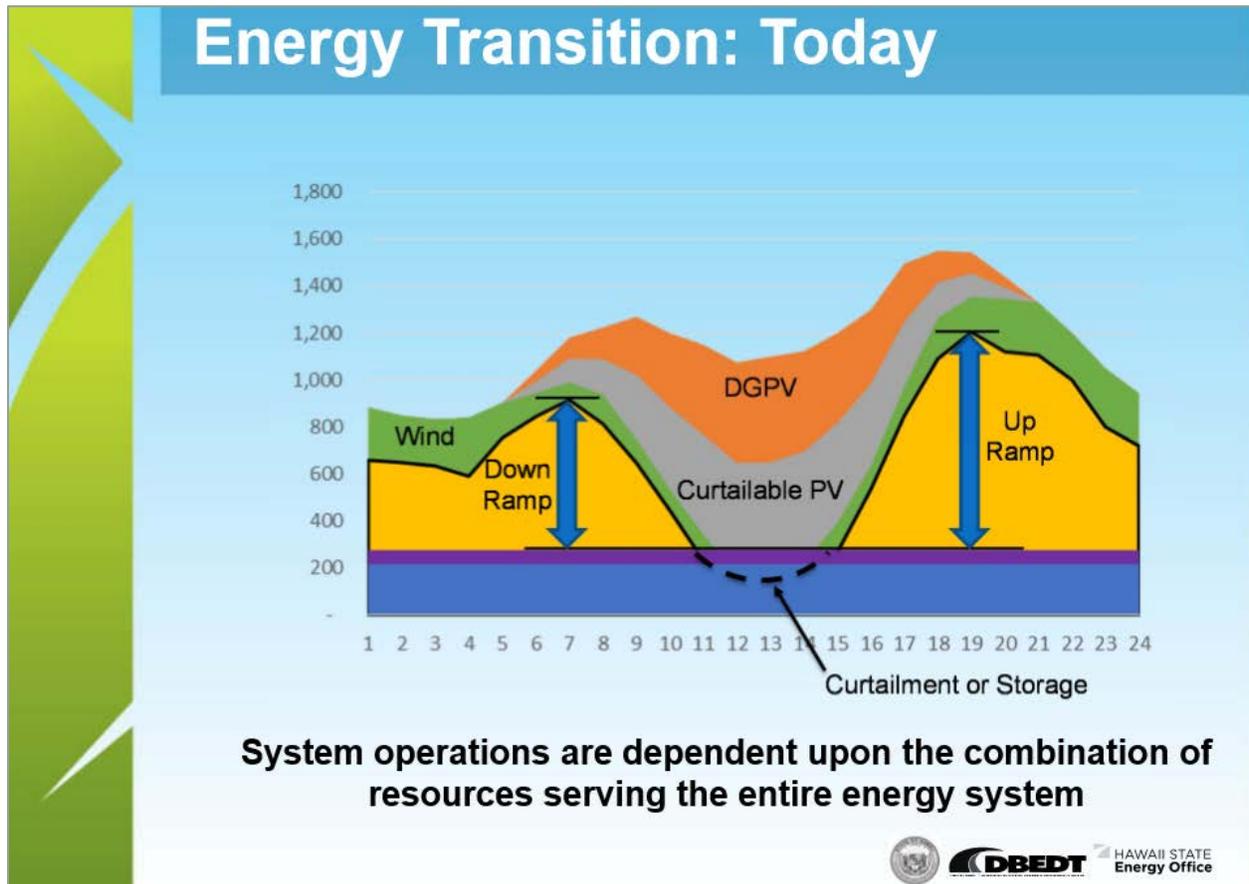
A year ago, batter storage costs per kWh for Tesla’s Powerpack, Eos Auroura 1000, Imergy ranged from \$0.02 to \$0.05 per kWh used (Figure 2, <http://cleantechnica.com/2015/05/09/tesla-powerwall-powerblocks-per-kwh-lifetime-prices-vs-aquion-energy-eos-energy-imergy/>). We already pay rates between \$0.26 and \$0.36 per kWh, so even without a \$1 Billion Federal subsidy such as the one currently under analysis, this additional cost for battery storage is feasible for O’ahu ratepayers. The U.S. Department of Energy is funding battery storage and significant cost reductions are anticipated in the next five years.

	Powerpack (utility)	Eos Aurora 1000 6000	Imergy (current pricing, 15 years of life)	Imergy (current pricing, 30 years of life)	Imergy (projected pricing, 15 years of life)	Imergy (projected pricing, 30 years of life)
Cycles	5,000	10,000	5,475	10,950	5,475	10,950
kWh/cycle (efficiency & degradation assumptions included in cales)	8,280	4,050	7,500	7,500	7,500	7,500
Total kWh produced over product lifetime	41,400,000	40,500,000	41,062,500	82,125,000	41,062,500	82,125,000
Total Cost	\$2,070,000	\$648,000	\$3,750,000	\$3,750,000	\$2,250,000	\$2,250,000
\$/kWh used	\$0.05	\$0.02	\$0.09	\$0.05	\$0.05	\$0.03

Figure x. Clean Technica, May 2015, utility battery storage cost per kWh (<http://cleantechnica.com/2015/05/09/tesla-powerwall-powerblocks-per-kwh-lifetime-prices-vs-aquion-energy-eos-energy-imergy/>)

Tesla Battery Option<https://www.tesla.com/powerpack/design#/>: Tesla Lithium Ion batteries appear to be the most costly battery storage option. Based on their online price tool, the \$1 Billion in Federal funding (50% of the \$2 Billion project), for example, could buy us 2,043 MWh of battery storage for our solar PV (at \$489/kwh), (approximately \$0.10/kwh – interesting Tesla system pricing has doubled since 2015). That’s enough to provide Honolulu with 400 MW of power, continuously, at night, for over five hours. The solar PV needed to fill the 2,043 MWh of batteries would be roughly 245 MW nameplate solar capturing sunlight for eight hours a day (with a lot of excess capacity after batteries are topped off on long, sunny, summer days). Acres of solar PV: at 5 MW per 35 acres, 245 mW of nameplate capacity would occupy 1,715 acres. The 2007 Waialua wildfire burned 6,800 acres of fallow agricultural land on the North Shore of O’ahu. These North Shore landowners, including Kamehameha Schools have been actively pursuing large-scale installations of solar PV, but HECO will not allow it because they don’t have battery storage to accommodate it. Homeowners are blocked from PV installation on their roofs because HECO doesn’t have battery storage. At a rate of \$130 Million per 100 mW of solar PV installation, thelandowners would pay \$319 million for the installation of the panels to fill the \$1 Billion batteries. If you need to match the wind farm’s 400 MW of power generation during the day,

installation of 400 MW of additional solar PV would only cost \$520,000. All this solar PV, plus the battery storage, comes to only \$1.84 Billion.



- To reach 100%, Oahu needs additional resources beyond those on Oahu (e.g., offshore wind, biofuels, neighbor island renewables transmitted via interisland cable)
 - Up to 800 MW off-shore wind in HECO's Preferred Plan
 - 200 MW by 2030, 400 MW by 2040, 800 MW by 2045
 - Visualization Tools
- Source: Hawaiian Electric Companies, Power Supply Improvement Plans Update Report (April 1, 2016)

Figure 2. Mark Glick, DBEDT Director, May 2016 Task Force Presentation indicating wind as current source of energy <http://www.boem.gov/Hawaii-State-Administrator-Presentation/> .

Standard Battery Option: According to Crown Battery Chip Johnson, Crown Battery Manufacturing Company, SLI Products Division – Western U.S. Region, cjohnson@crownbattery.com, \$1 Billion would enable the purchase of 5,762,714 kW (5,763 mW) in total storage capacity; or 2,881,357 kW (2,881 mW) in usable energy (50% usage of battery’s total capacity is usable). This storage capacity would fuel six

hours of drawdown at a rate of 400 mW and three hours of drawdown at a rate of 800 mW. Filling the 2,881 mW of battery would be completed by noon each day 600mW of nameplate solar PV capacity. Solar PV with a nameplate capacity of approximately 600 mW would be sufficient to refill the batteries each morning (to afford a rest period for the batteries before drawdown after the sun sets). Acres of solar PV: at 5 MW per 35 acres, 600 mW of nameplate capacity would occupy 4,200 acres. At a rate of \$130 Million per 100 mW of solar PV installation, the landowners would pay \$780 million for the installation of the panels. In addition to recharging the batteries before noon each day, the 600 mW of solar PV would feed energy into the grid all afternoon and into early evening. The 2007 Waialua wildfire burned 6,800 acres of fallow agricultural land – on property owned by residents who would like to install solar PV but are not able to because HECO lacks battery storage. The landowners, local businesses, and homeowners would benefit from profiting from their installation of the solar PV – a win-win, rather than a win-lose. No one loses with solar PV. Local money we pay in utility bills would go to local landowners, rather than to a Danish company. Based on calculations by retired professor Dick Mayer (that 60 MW Kahikinui Wind Farm would net \$30 Million to \$40 Million annually), this 400 MW Ka’ena Wind Farm could net roughly \$200 Million to \$266 Million annually (amounting to \$10 Billion to \$13.3 Billion over 50 years – in today’s dollars). That’s \$200 Million dollars per year of our out of pocket payments of our electricity bills that COULD instead have stayed in Hawai’i if it could have gone to our local landowners to pay for their solar energy.

This is Hawai’i, not Denmark – we don’t need wind, we need solar battery storage – we are at 21 degrees latitude, not 56 degrees North. It’s sunny here and we have tens of thousands of acres of flat, accessible land that’s being underutilized because we don’t have battery storage. According to Kamehameha Schools, solar PV is compatible with many agricultural uses – Kamehameha Schools pursued development of solar on their property, but projects were cancelled by the utility. Vegetation could be controlled with sheep or goats to produce food, like the solar farm near Mililani. Some other solar farms are maintained to bare dirt causing unacceptable harm to local communities due to pesticide use and fugitive dust. You should invite Kamehameha Schools staff to help develop the solar PV with battery storage alternative for your NEPA documents.

Your NEPA documents should provide Hawaii’s legislators, PUC regulators, and residents with an honest evaluation of the proposed project in comparison to the public’s preferred PV alternative. We don’t believe the public will accept any at-sea wind structures until HECO has allowed build-out of solar PV with battery storage on Oahu. The public, the large and small local landowners, and local solar companies who are missing out on opportunities to fuel Oahu’s energy needs with unobtrusive solar PV, and the many entities that would be harmed by a wind farm at this location prefer solar PV with storage. So much of the vehement opposition to your project heard at the July 21, 2016, public scoping meeting seems to be the result of HECO, our utility’s, resistance to allowing grid-connected solar PV installations on our homes and to allowing solar farms to be constructed:

<http://www.bizjournals.com/pacific/news/2014/01/28/first-wind-plans-to-build-three-large.html><http://www.kitv.com/story/31239004/solar-farm-workers-upset-over-hawaiian-electrics-decision-to-shut-down-sun-edison-projects> .

To facilitate our understanding of your decision should you not include assessment of the PV with battery storage alternative. Because PV with battery storage alternatives are in their jurisdiction, the Department of Energy should be a participating agency in your EA and EIS. To facilitate Federal Government efficiency and the coordination, appropriations requests, and funding transfers between the two Federal agencies, the EPA and CEQ (Council on Environmental Quality) assistance should be developed and maintained throughout project development.

IV. Fishing Restrictions, Access Restrictions

Fishermen who've heard about this project are furious about your proposed action (Figure 3). The Oahu North call area is heavily fished for tuna because it's a shallow, productive upwelling area with high densities of Ahi. The Coast Guard would close the area to public access due to safety concerns, blocking an important fishing ground and blocking our canoe and sailing route between the North Shore and Kauai. Closure of miles of ocean will result in adverse effects to fishermen, canoes, sailing, and other recreational, cultural, and commercial users.



Figure 3. An angry fisherman telling the wind developer no at the July 21, 2016, public scoping meeting on the North Shore.

Detail in your NEPA documents the effects the ocean closure will have to these users. Your PowerPoint indicates the Ka'ena Point area is not frequently used by ocean vessels – however, when one sails or paddles to Kauai for cultural or recreational purposes once a year or once every few years, the frequency of the voyage is not high, but the cultural importance is significant. Please don't block our ocean routes to Kauai. The wind turbines will reduce the energy in the wind downwind from the development. This will harm voyaging by our sailing canoes. Assess the effect the wind farm may have to surface wind speed and humidity in your EA and EIS. We have noticed the wind farms on land seem to have resulted in adverse effects to wind conditions for kite surfing and wind surfing.

Disclose in writing to 1.) all fishermen holding licenses to fish in the waters of Hawaii 2.) all persons registered during the current year and previous three years on the National Saltwater Angler Registry in Hawaii, and 3.) all registered owners of boats registered in the State of Hawai'i a map of the area that may be closed to the public should a wind farm be constructed at the site and an explanation of the wind farm project. Provide this information in writing to these persons whenever any Federal Register Notice is published related to wind energy development of the Oahu North BOEM Call Area.

Your EA should disclose the density of Ahi, Mahimahi, Ono, Marlin, and other ocean fish passing through each grid cell in the proposed lease area each month over two years of study. Detail how the anchors will be installed and how much ocean bottom they will destroy. Detail why the anchor system can't be used farther from shore, in deeper water, where the effects to the ocean environment would be reduced and where turbines would not be visible from shore. Detail the economics of the nearshore versus farther than 42 miles out projects and explain why it is not situated in a deeper area rather than a productive upwelling area. Your online PowerPoints indicate it's not practical, but that assertion needs to be explained in detail.

http://www.ewea.org/fileadmin/files/library/publications/reports/Deep_Water.pdf indicates the type of deep water installation you are proposing is experimental. Explain why you would situate an experimental wind farm in an area that's so important to fishermen and other ocean users. Disclose what percentage of the time, during the 50 year period of wind farm development and operation, the wind turbines may not be fully-operational, not feeding energy into the grid, yet still closed to public access.

V. Viewshed Analysis

A wind farm in the waters off Ka'ena Point would obstruct views of the open ocean that are used by Native Hawaiians, Oahu residents, and tourists for spiritual rituals and contemplation. Turbines located closer than 42 miles from shore would be visible during the day; bright high-visibility lights (required by FAA) would cause the open ocean viewscape to appear to be an industrial area at night.; we recommend you situate all wind turbines beyond 42 miles from the Ka'ena Point shoreline to be out of view of the Ka leina a kauhane white rock limestone soul leaping formation and residences. Your EA, EIS and other NEPA planning documents should address the following adverse effects to viewshed.

Please provide us with two maps: 1.) a map with shading on the land, beaches and ocean landscape where any portion of a wind turbine structure will be within view/in line of sight and 2.) a map with shading on the areas of land, beaches, and ocean where a portion of the wind turbine's base/stem will be visible (so excluding areas where only the taller rotor-swept area would be within view).

In your additional assessments of effects of the proposed wind farm to view, detailed below, include analysis of view effects at the following locations: North Shore: Kahuku Point, Turtle Bay Resort, Sunset Beach, Ehukai Beach Park, Pu'u o Mahuka Heiau State Historic Site, Laneakea Beach, Puaena Beach Park, Hale'iwa Alii Beach Park, Kiaka Bay Beach Park, Polo Beach, Mokulē'ia Beach Colony Seawall, Mokulē'ia Beach Park, Mokulē'ia Crag rock climbing area, Hidden Beach, and the Ka leina a kauhane white rock limestone soul leaping formation; West Oahu: Yokohama, Mākua Beach, Kea'au Beach Park, Lahilahi Point, Maili Point, Ka'ula and upper floors of a resort at Ko Olina. These locations don't encompass all

areas where view is a concern, but renderings from these locations will enable us to imagine the changed view from locations important to the public. Disclose accurate viewshed renderings from these above locations using high-resolution 100mm and 200mm lenses to produce renderings of the wind structures under the following light conditions and sun angles: mid-morning, at sunset on the Summer Solstice, Winter Solstice, and Equinox, and at night. In addition, provide video renderings using a 100mm lens view, to disclose how the wind farm will look at night - with its large, bright, industrial blinking lights. For each time of year, camera zoom angle, and time of day, provide separate assessments of the viewshed effect if wind turbine development was restricted to distances greater than 16 miles offshore versus effects if wind turbines are permitted close to shore. Address the following view-related concerns in the analysis:

- 1.) The construction of even one wind turbine within the “Oahu North Call Area” would visually desecrate our people’s centuries-old cultural and spiritual practices conducted viewing the heavens over the ocean, viewing the open ocean, and viewing the setting sun over the unobstructed ocean. Analyze and disclose the adverse effect the obstructions will have to the Native Hawaiian’s rights to the open ocean view for their spiritual rituals and contemplation. The construction of even one wind turbine within the “Oahu North Call Area” would visually desecrate our people’s centuries-old cultural and spiritual practices performed viewing the unobstructed night sky, taking our last view on earth before we go to the Ka Leina a ka‘Uhane white rock limestone soul leaping formation and viewing the sun setting over the ocean.
- 2.) In so many wind farm projects, developers provide the public with wide-angle photographs with grainy, tiny little wind turbines that are not visible in the rendering. When we view and photograph sunsets on the North Shore, we use 100mm and 200mm lenses, so your renderings must show with wind turbines mocked up in sunset photographs using the crisp clarity of 100mm and 200mm lenses we would see in our photographs. We have a history, on the North Shore, with this sensitive topic so we are vigilant to errors in your disclosure of this aspect of project effects (Figures 4, 5, and 6).
- 3.) Because the effect to view will be significant, we recommend you divide your planning and any future permits by distance-from-shore zone so wind turbine development farther from shore is not held up in law suits because the Permit includes turbines in a zone or zones closer to shore. Separate your analysis for viewshed into the following three zones to enable the public to understand effects of each: 1.) closer than 16 miles from shore; 2.) 16 to 42 miles offshore; and 3.) greater than 42 miles offshore. Turbines within sixteen miles of shore have the greatest effect on view and will be fought by the greatest number of people and groups. Turbine locations 42 miles offshore are not visible from the shoreline so these locations are likely to be the most palatable because the industrial day- and night-time red blinking lights effects will not be a blight to most residents.



Figure 4. Present renderings of the wind turbines as they would look to the human eye or green flash photographer. This photo of the Sunset Beach Surf Break with Ka'ena Point in the background was taken with a 100mm lens.



Figure 5. Our concerns related to viewshed analysis are based in our local experience (top photos); the photograph at the bottom is a wide-angle photograph of the Sunset Beach Surf Break, with Ka'ena Point itself barely visible.

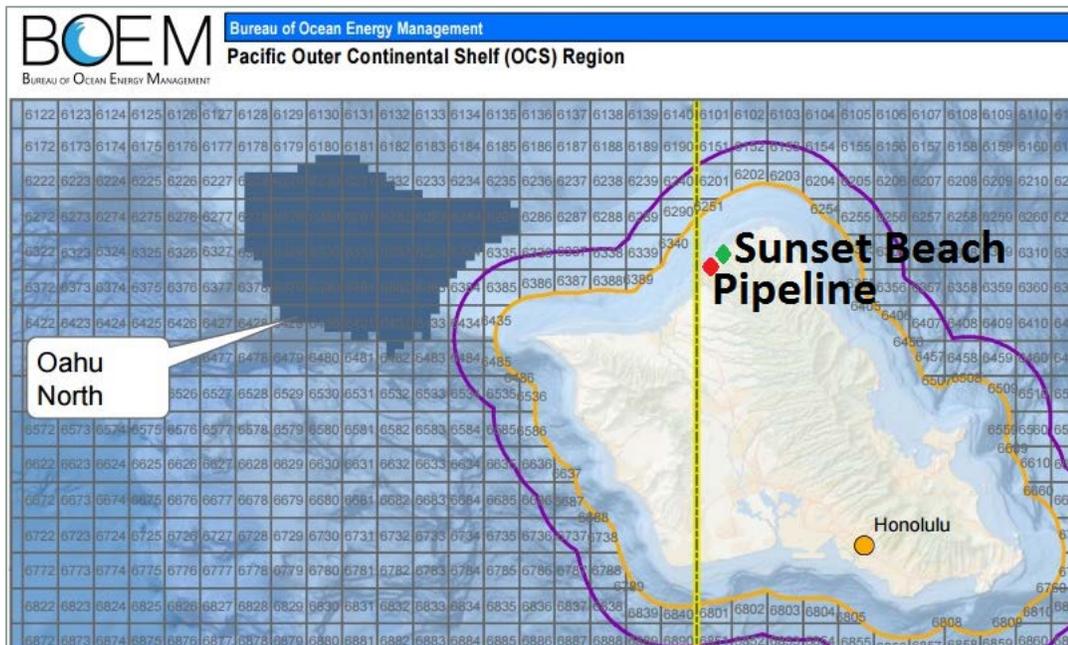


Figure 6. BOEM Oahu North section of the Oahu Call Area – Sunset Beach photo point is equidistant from Ka’ena Point and the area open for wind farm lease applications.

- 4.) Either include a “farther than 42 miles offshore” alternative to the proposed action or, in your NEPA documents, include a thorough explanation of why your project can’t be situated in water deeper than 1,100 meters. The wind turbines would not be visible from shore if they were situated farther than 42 miles from shore. Your 2016 Task Force PowerPoint indicates that although it is feasible to install at-sea wind turbines at depths greater than 1,100 meters, it is not “practical”. Without this explanation, we don’t understand this otherwise arbitrary cutoff.
- 5.) List the addresses of all properties on the North Shore, West Oahu, and Kauai the wind turbines could be visible from during the day, at sunset, or at night. Include all of these addresses in your list of affected parties and send notifications to them by mail when the Federal Register publishes information related to wind development in the waters off Ka’ena Point.
- 6.) Assess the effect the industrial at-sea structures will have on North Shore tourism including effects to Turtle Bay Resort, effects to small businesses, effects to rental income, and changes in visitor numbers.
- 7.) Analyze the annual number of times the green flash at sunset will be obstructed to a viewer by a wind turbine. For example, Sunset Beach, on the North Shore of Oahu is so named because it is the western-most point on the North Shore where the sunset is visible year-round. Tourists visit Sunset Beach to photograph the unobstructed sunset over the ocean. Sunsets are often accompanied by a green flash of light as the sun clears the horizon – view of the green flash, and photographs of the green flash a sought-after.

- 8.) Disclose the annual number of photographs of surfers, beach users, and recreational users including boaters, mountain bikers, rock climbers, and hikers the wind turbines may clutter in their otherwise clear ocean views.
- 9.) Assess and disclose the effect the proposed project will have to viewshed of ocean users including Humpback whale and evening cruises out of Hale'iwa and Waianae Harbors, shark tour boats, and recreational and commercial boaters offshore on the North Shore and West side of Oahu during the day and at night. Include all registered owners of boats docked at Waianae Harbor and Hale'iwa Harbor in your list of affected parties.
- 10.) It is hard to explain the importance our residents place on walking out to the shoreline or to another prominent point to watch the sun set. Others can see the sunset from their homes. It's a moment of relaxation – it's a moment to view nature, undeveloped, unaffected by man – we just don't have many moments like that here. We feel like this unobstructed area is our Wilderness – because we have it, we (O'ahu residents) have a place to escape to on weekends – because we have it, we don't need to travel to outer islands or to the mainland to experience nature, to be in view of Wilderness. Keep our wild scenic area undeveloped so we don't need to travel and waste jet fuel. We feel our view of sunset would be severely affected by this project. Please find an alternative to this at-sea wind project, provide us with information about the cost of the better alternative; please give us options other than this egregious project that would meet your needs.

VI. Disclose decreased property values on the North Shore, West Oahu, and Kauai resulting from proposed at-sea wind project

Property values would decline in many areas of Oahu's North Shore, West Oahu, and Kauai during a fifty year period if the proposed Ka'ena wind farm is constructed because our world-class surf and pristine scenic views of sunset (the reasons people live and visit here) would be harmed by the project. Realtor.org has compiled information regarding changes in property value due to wind farms (<http://www.realtor.org/field-guides/field-guide-to-wind-farms-their-effect-on-property-values>). These property value changes are related to views – they don't include the effects resulting from your project's disturbance of our surf (see surf section below for additional surfing-specific concerns). Detail in your EA and EIS the extent to which property values would be affected. Provide specific potential reductions in property value, in dollars, for each individual address on the North Shore, West Side of O'ahu, and Kauai. Include projections of future property value for all North Shore, West Oahu, and Kauai properties that may be affected by the project. Provide real estate value projections for the 50 years of wind farm construction and operation. Include in your assessment of property value that Kawaihoa Wind Farm is only permitted to be on the landscape for the next 15 years and then it will be decommissioned. Explicitly describe assumptions. For each property, provide anticipated estimated value without the O'ahu North wind farm, the percent reduction in the value of the property due to the wind farm, and the difference. Express uncertainty in the percent reduction in the property value and the anticipated estimated property value separately and explicitly.

In addition to providing the following information in your EA and EIS documents, also provide the following in writing to every registered owner of all property that may be affected: 1.) the effect the

proposed offshore wind project may have to their property value during each year of the 50 years of construction and operation in comparison to what these values would be expected to be in the absence of the wind farm landscape blight. 2.) The effect the proposed wind farm may have at reducing or increasing their electric bill; 3.) the effect the public's preferred alternative (solar PV with grid-level battery storage) would have on their property value and their electric bill. When providing each of these three items, include details of your assumptions so your calculations will be repeatable. You may wish to provide several scenarios, with their various assumptions. Detail this information in your NEPA documents as well as providing the property-specific analysis to each registered property owner whose property value may decline as a result of the proposed wind farm. Detail in your NEPA documents and in your individual written notice to all affected landowners the cumulative loss of property value / net worth of the people of Hawaii that may result from the proposed wind farm. This loss of net worth should also be presented in your EA and EIS in relation to the PV on agricultural lands with battery storage alternative.

Our August 21, 2016, review, Zillow, of the 256 most recently sold homes in Haleiwa and the 259 most recently sold homes in Waialua indicates the average home price in Haleiwa was 1,365,089 and the median home price in Waialua is 575,000. 2010 Census data indicates there are 1,318 households in Haleiwa and 1,165 in Waialua. At a rate of 1,365,089 per property, total residential property value in Haleiwa is approximately \$1.8 Billion; at \$575,000 per property in Waialua, residential property value in Waialua would be \$670 Million (totaling 2.47 Billion). A reduction in property value of ten percent would reduce the net worth of North Shore residents by \$247 Million (an average of \$100,000 per household); a twenty percent reduction would come to approximately \$500 Million in 2016 dollars (\$200,000 per household). The same analysis should be done for West O'ahu and Kaua'i. Based on property value effects alone it looks like families in these areas would be better off if we all took a year off from work to volunteer to help you figure out a better way to get this energy produced and transmitted to urban Honolulu than we would be allowing you to move forward with this Ka'ena wind project.

VII. Adverse Effects to Business and Tourism

Hawai'i, O'ahu, and the North Shore's number one economic driver is Tourism. Tourism is a \$14 billion part of our economy, accounting for 22% of our GDP. More than 50 % of O'ahu tourists tour the North Shore during their stay. Tourists spend an average of \$150 to \$400 a day in Hawaii. These people are here on their honeymoons or on a Hawai'i tropical island vacation – you can't replace that with ecotourism to see an industrial facility. Turtle Bay Resort is a multi-billion dollar luxury oceanfront destination at the northernmost point of the North Shore. Many North Shore restaurants are situated to view the sun setting over the ocean. The economy of the residents of the North Shore is rooted in the beauty of our scenery, our clean powerful surf conditions, and our undeveloped country environment. Tour busses stop at Sunset Beach so tourists can take photographs of the beautiful ocean scenery. The Hawai'i Tourism Authority prioritizes "Maintaining the Brand" to assure long-term sustainability of the destination. Your proposed Ka'ena wind farm would cause irreparable harm to the North Shore brand.

A review of the 2010 Census data indicates the North Shore receives the following total annual value of sales: Retail \$105,649,000; Food: \$33,591,000; Rental Real Estate (including Turtle Bay Resort): \$5,367,000 for a total annual tourism-related input of \$144.6 Million. A 10 percent reduction to this net would cost our tourist-related businesses \$14.4 Million annually. Please don't mar our sunsets and harm our brand.

Your analysis of the effects of the proposed action should include an assessment of changes to the future number of tourists visiting the North Shore and the tourist dollars spent on the North Shore the project may have during its first 20 years of operation. Your analysis should also include an assessment of the reduction in the reduction in overall O'ahu visitor arrivals that may result from the injury to the brand and the effect this may have to airlines and the businesses in Waikiki. Couple this analysis with your assessments of the other financial adverse effects the project will have to us to provide a cumulative assessment of the injury to the people of the North Shore, West O'ahu, and areas of Kaua'i within view of the proposed wind farm.

VIII. Contaminants, Algae, and Invasive Species

Detail the amount and type of fluids, solids, and particles the wind turbines will leak or fall into the ocean during construction and operation of the wind farm. Detail the effects these contaminants will have to limu, fish, seabird, monk seal, humpback whale, and human health. Detail the components of the various turbine components, fluids, anchors, and anchor chains or cables. Include transmission fluid and oxidized components of the structures. Iron should not be in the components used in the wind turbine platforms or in-water components of mooring lines and anchors because it causes dramatic loss of corals and increases in invasive species and algae growth. In the 6,000-ft deep (2,000 meter) waters off the Kona coast, where floating cages submerged just beneath the water surface are installed, the shade from a single cage causes algae to grow on the sand bottom substrate – address the effects shade from the proposed structures will have to cause additional algae growth. Algal blooms are severely affecting tourism in Florida – how will the proposed action affect algae and invasive species growth in the developed area and on the shores of Kaua'i where upper-ocean currents would carry the iron-enriched water. Structures containing iron are being removed from the offshore waters of the Northwestern Hawaiian Islands because the iron causes expansive areas of sea floor around shipwrecks and buoys to be overgrown by the invasive Corallimorpharian *Rhodactis showesii* (Figure 7). Based on a 5:1 ratio of anchor line length to water depth, 12 miles of anchor line appear to be required for each wind turbine – if iron a component of the lines or structures, even one turbine could significantly modify the ocean floor in this important, productive upwelling area in addition to harming other areas where the currents carry contaminant-tainted water.

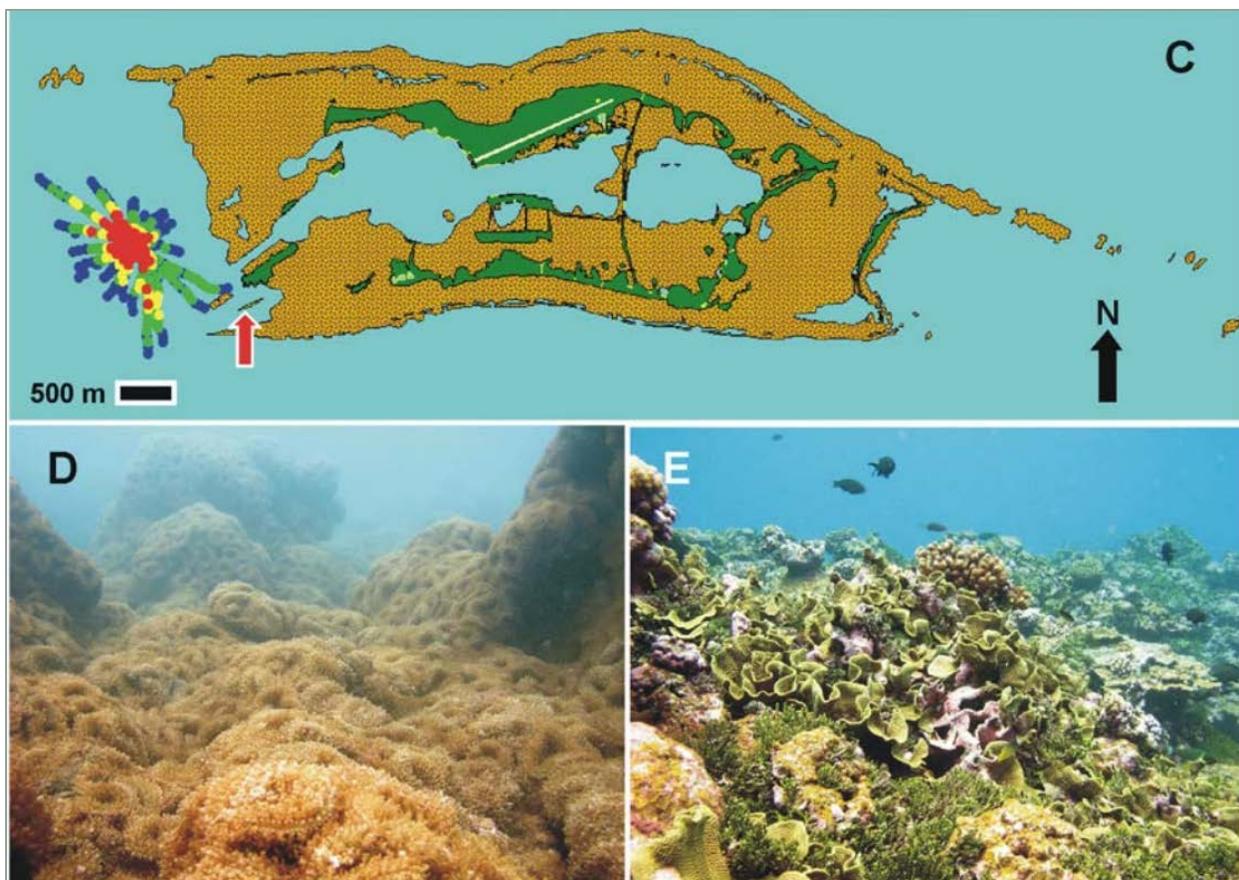


Figure 7. Invasion of Palmyra Atoll coral reef by invasive species in areas contaminated by iron (Work et al 2008).

Detail the contents of in-water components of the proposed structures and provide a thorough assessment of the effects these structures may have to the species composition of the sea floor. Provide a thorough assessment of the effects a single turbine structure and its associated components may have – detail zones of severity of change and the number of square miles of each zone. Map all areas of areas of coral greater than 10 meters wide within the Oahu North Call Area and provide an assessment of the effects the proposed project, at the project-level, may have to these corals.

Provide a thorough assessment of the direct effects the disturbance resulting from the anchors will have to the ocean flora and fauna. Repeat the above analysis for the 42-miles offshore alternative, where turbines are situated out of sight of the Ka leina a kauhane white rock limestone soul leaping formation, in deeper, less productive waters. This Oahu North site is a high-productivity ridge area of our ocean – no experimental wind structures (let alone tested and true wind structures) should be installed at this location.

Climate change is expected to increase sea surface temperatures so 18 years from now, the strong hurricanes (which usually only remain strong when they stay in waters south of Hawai'i) are expected to track through the Hawaiian Islands instead of staying to our south. Our sea surface will be more similar to the energy fueling super typhoons in the south Pacific. BOEM should therefore ensure the number of

hurricanes that may affect the structures, and the effects those hurricanes may have to the wind turbine structures be included in the EA and EIS. BOEM should also require the applicant to maintain funding in escrow to cover the cost of locating and retrieving the pieces of metal, petroleum products, oil, and other contaminants that fall into the ocean during the hurricane. BOEM should ensure the wind developer retrieve any articles containing iron (see above). Consult with the US Department of Defense and US Coast Guard regarding anticipated costs associated with detecting and retrieving pieces of similar missing pieces of aircraft. The wind developer should pay the costs for undersea search and retrieval operations. BOEM should not allow any component containing iron to remain unaccounted for. The mitigation cost for loss of coral reef should be applied to any component missing – each pound of metal that goes missing should be assessed a coral mitigation cost if it's never retrieved. The cost of retrieval of components torn off by a single hurricane, the anticipated potential number of damaging hurricanes, the potential costs for compensatory mitigation for damages to the environment, and the method by which the applicant will escrow funds, should be included in your EA and EIS documents. Ensure additional funding for decommissioning, removal, and restoration of the ocean floor back to it's original state are sufficiently assured in escrow. Ensure all escrow funding is held by an A-rated American Bank naming NOAA and the DLNR as beneficiaries.

IX. Undersea Cable and Transmission Line Electromagnetic Effects to Wildlife and Humans

Detail the various effects the undersea cable may have to fish, corals, seabirds, marine mammals, turtles, and humans. Detail the strength of the electromagnetic field of the cable and onshore transmission line under maximum electricity loading at the following distances: 1 meter, 10 meters, 100 meters, 1,000 meters, 2,000 meters, and 3,000 meters. Detail the effects electromagnetic radiation may have to wildlife and humans. Your analysis should extend to the point on land where an existing transmission line is sufficient to handle your electricity/voltage loads. On the North Shore, such transmission lines may exist at Mililani – on West O'ahu, such lines are in place at Nanakuli. Therefore, your disclosure and analysis of the electromagnetic fields and effects to humans and wildlife must extend all the way to Mililani or Nanakuli. This is a social justice issue. Don't piecemeal the project into small components in your analysis – include the effects of the new transmission lines that would need to be constructed to get the wind energy to downtown Honolulu where the power is needed – the North Shore is already energy-independent – don't curtail the effects analysis – disclose all of the adverse effects of the project to the affected public, legislators, DBEDT, and taxpayers. Although the effects of the undersea cable are significant, these effects seem to be the only adverse effects that would occur if the purpose and need for the project were met with solar PV on Moloka'i or Lāna'i, or wind farms on Lāna'i or Maui. The undersea cable from an outer island could come ashore at Nanakuli, so adverse effects to neighborhoods of a new transmission line system would be avoided.

X. Federal Government Clouded Title to Right to Lease Hawaiian Ceded Ocean Lands

Native Hawaiians ceded the ocean lands to the Federal Government and those lands were never returned to Native Hawaiians – Native Hawaiians maintain rights to the ocean lands you are considering

leasing. Private landowners on land can lease their lands for wind development but our oceans are not for sale. The Ocean is not for sale; please go work with willing landowners.

XI. Social Justice

We understand your applicant pulled young men out of the public meeting in Waianae to promise them jobs – yet what we actually see once these wind farms get developed is the full-time permanent staff are all skilled staff from the mainland. If a lease for construction of wind turbines is confirmed for the Ka’ena Point site it could be yet another example of the developer buying (inexpensively) the support of the underprivileged community. Members of the Kahuku community capitulated to support a wind farm that directly affects their school buildings at a price of only \$10,000 per wind turbine per year. It looks like this Ka’ena wind farm’s staff may primarily be drawn from Texas. When we pay our electricity bills, our dollars will ultimately go to the wind farm developer in Denmark, whereas if solar PV were allowed instead, the beneficiaries would be local homeowners and landowners. We’re not sure what’s been promised in terms of employment to local people (we noticed a commitment to hire one to 200 boat operators, an easy commitment to keep), but the people in some of the affected areas (which, in the case of the Ka’ena site, includes all areas of O’ahu) may be unequipped to ensure their best interests are cared for in exchange for the harm the project will do to them and their future generations.

XII. Serious Impacts to the Quality of our Surf Due to Wind Farm Structures Dissipating and Disturbing Surf Waves - West and North Ocean Swells

Standing alone, each component of our concern would seem to give a person or company reason enough to abandon wind farm development off Ka’ena Point. Each wrong you propose to commit to us is an injustice. The most deeply felt concern of many of our “Ohana is the adverse effect the large floating structures will have to the clean powerful west southwest, west, northwest (and for West O’ahu), north swells that create our epic surfing conditions. The North Shore has many of the very best, most famous, most heavily visited surf spots in the World. Surf is everything to many residents and visitors to the North Shore – it is the reason we live here. North Shore surf season is driven by storms tracking from west to east across the Pacific Ocean (typically October 1 through May 1) and typhoons in the South Pacific (typically September through December). We have worked very, very hard to live here and to protect our surf for our enjoyment and that of the rest of the World. We are supportive of clean energy, but not if it will adversely affect the quality of our surf. If you need to anchor large heavy floating structures offshore of O’ahu, don’t do it in an area where it affects the size and cleanness of our surf.

The North Shore has seven miles of surf spots – the “Seven Mile Miracle” that would be adversely affected by a wind farm off Ka’ena Point. In addition, Haleiwa and Mokuleia surf spots on the North Shore, and many surf spots on the West side of O’ahu would be adversely affected. The quality and "cleanness" of surf at the following world famous surfing breaks on the North Shore would be among the most adversely affected because their most perfect conditions rely on clean swells from the southwest, west, and northwest direction: Haleiwa, Waimea Bay, Pipeline, Gas Chambers, Off the Wall, Rocky Point Lefts, Sunset Beach, Backyards, Velzyland, Kawela Bay (along with numerous lesser-known surf breaks also being affected). On the West side of O’ahu, surf breaks at Makaha and Ma’ili would see

deteriorated surfing conditions if the proposed action is allowed because any type of North Swell hitting West O’ahu would be reduced and disturbed by these many large heavy floating structures at sea off Ka’ena Point.

Pipeline, the most famous surf spot in the world, and one of the most perfect waves in the World, is located due east of your proposed wind farm (see map in Figure 6). People come to Pipeline from all over the world to surf this wave and to watch surfing. It’s spectacular because it breaks very close to shore so visitors have front-row seats. It’s a very special wave. The December Billabong Pipe Masters contest is the final event in both the Van’s Triple Crown of Surfing and the final World Tour stop for the World Surf League – the winner of this contest crowns the Triple Crown and World Champion. \$500,000 in prize money is awarded at this “Pipe Masters” surf contest. The Da Hui Backdoor Shootout surf contest and other world-renowned surf contests occur here because surf conditions are so ideal. Pipeline is beautiful and perfect when it receives powerful long-period swells from the west (Figures 8 and 9). Surfline.com explains the mechanics of Pipeline’s wave here: <http://www.surflines.com/surf-news/the-mechanics-of-pipeline-63340/>. Every spare bedroom on the North Shore is occupied by visiting friends from all over the world the two weeks the Pipeline Masters Contest is held.



Figure 8. West swell hitting Pipeline (Photo by Duncan, Surfing Magazine).



Figure 9: Local Pro surfers John Florence (Currently Ranked #1 in the World), Dusty Payne (Photos by Zak Noyle), and Derek Ho (Photo by Surfline) surfing perfect Pipeline.



Figure 10. Pro surfers Nathan Fletcher (Photo by Zak Noyle) and Kelly Slater (local homeowner) and local Pro surfer Jamie O'Brien (photos by Brent Biemann) surfing perfect Pipeline.



Figure 11. Perfect Pipeline on a west swell (Photo by Mike Cianciulli, Surline).

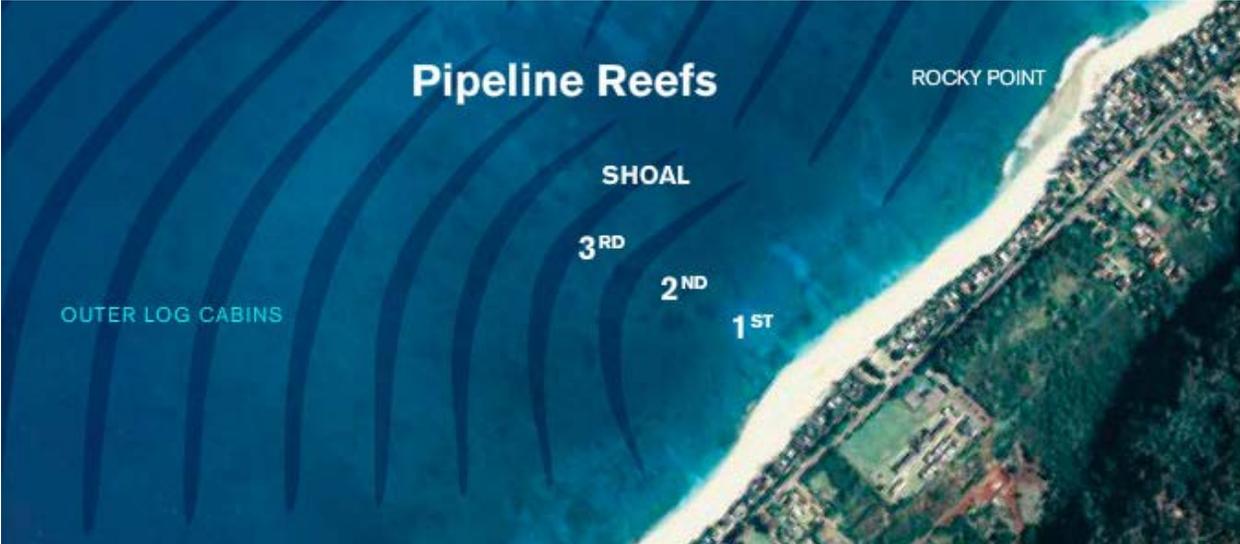


Figure 12. Pipeline surf break: west swell and typhoon swell from the southwest create Pipeline’s classic long, rideable “left” “tubes”; northwest swell offers wave faces on both Pipeline lefts and Backdoor rights; and north swell is ideal for Backdoor rights. (Photo by http://www.surflines.com/surf-news/the-mechanics-of-pipeline_63340/).



Figure 13. Pipeline is perfect location for spectators (Photo by Sean Davey for Quicksilver and Surflines, http://www.surflines.com/surf-news/the-mechanics-of-pipeline_63340/).



Figure 14. Members of Hui O He'eNalu (Da Hui), a 300-member family of watermen founded in 1976 to work to assure local people’s rights to the ocean are not infringed upon.

The proposed offshore windmills have the potential to seriously negatively impact the quality of the waves we surf. The windmills could not only result in a decrease in the size of surf, but their floating features will result in a very large decrease in the quality of surf at many of the premier surf breaks on the North Shore of O’ahu and the West side of O’ahu. The “Oahu North” portion of the “Oahu Call Area” for the proposed windfarm off Ka’ena Point extends many miles north of Ka’ena Point. For Haleiwa, swells from the west all the way to the northwest would have to pass through the wind farm "call area" in order to reach Haleiwa. For Waimea Bay and Pipeline, swells from the west-southwest to west-northwest would have to pass through the windmill farm "call area" before reaching those surf breaks. For the Westside surfbreaks, such as Makaha and Ma’ili, almost all winter swells would have to pass through the windfarm “call area” before wrapping around Ka’ena Point into the Westside.

The ocean lease applicant for the northern “call area” (an entity called AW Wind Hawaii, LLC which is led by a Danish citizen, Jens [pronounced Yens] Peterson) proposes to build at least 51 floating windmills, and is clearly trying to reserve the option to build many more, possibly 100 or more. Each floating windmill is proposed to be built on a patented "Wind Float" platform similar to the photo shown on the applicant's application. The photo on the application is of a single demonstration Wind Float windmill that was built in northern Portugal. Here is a diagram from the application (Figure 10):

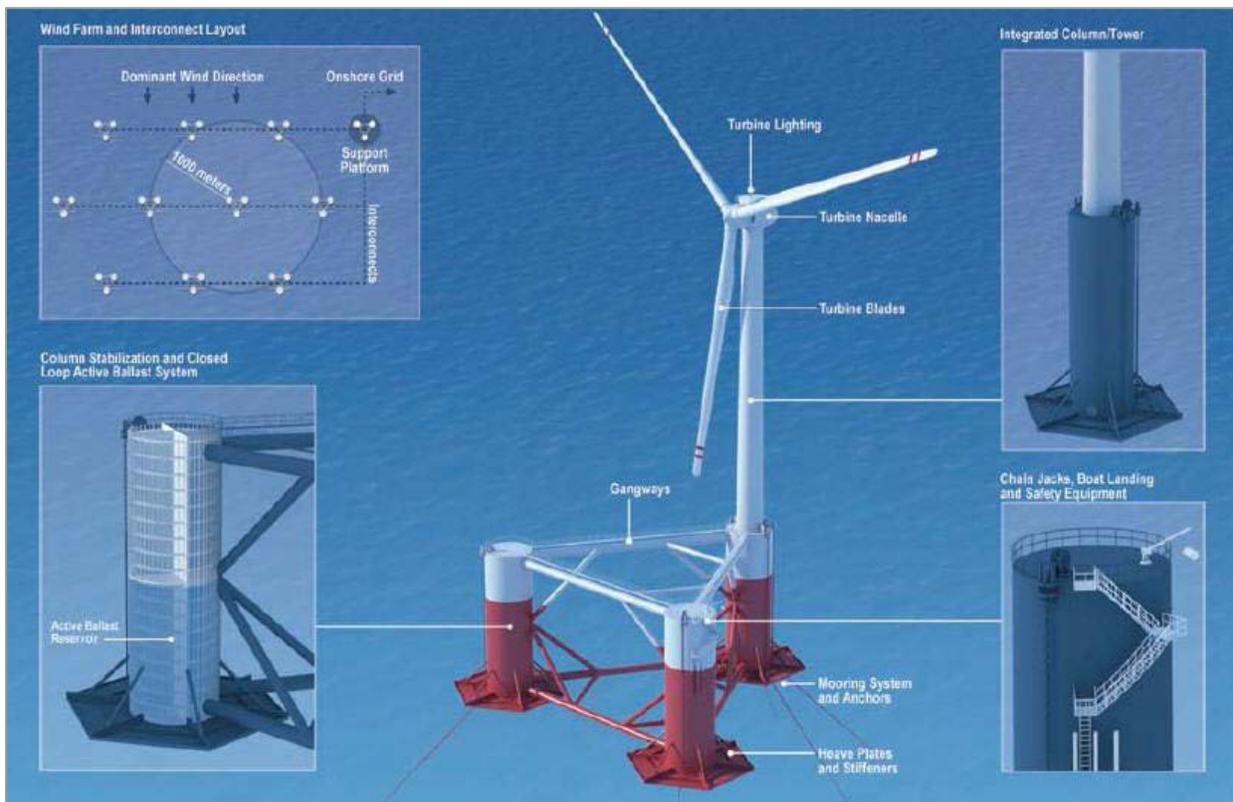


Figure 10: Diagram from the Wind Float windmill from the wind farm application.

The Wind Float platform that was built in northern Portugal is anchored in water that is only 40 to 45 meters deep. In contrast, the waters in much of the northern “call area” off Ka’ena Point are about 1,000 meters (3,300 feet) deep. That is 5 to 6 times deeper than anyone anywhere in the world has ever

successfully anchored floating windmills, and more than 20 times deeper than the applicant's demonstration Wind Float in Portugal.

The demonstration Wind Float in Portugal is anchored by four steel-cabled anchor lines that spread out in four directions. The Wind Float itself consists of three large steel semi-submersible cylinders that have a diameter of 10 meters each (33-foot diameter each), and extend down more than 70 feet into the water. The three cylinders are set in a triangle held together with various steel tubes and cross braces, and the windmill tower sits on one of the three cylinders. The single demonstration Wind Float in Portugal has a 2.4 MW (megawatt) Vestas brand wind turbine. For Hawaii, the applicant is proposing to use wind turbines in the 6 to 8 megawatt (MW) range. As a result, the size of the Wind Float cylinders that would be needed in Hawaii will be even larger than the ones used in Portugal.

Even with the smaller size of the Wind Float in Portugal, the total cross section of steel for each Wind Float will be 99 feet (three times the 33-foot diameter for each cylinder). Each cylinder would extend more than 70 feet down into the water, and then connect to the anchor cables. Even if only that smaller-sized Wind Float were built, and even if the applicant only built 51 of the windmills, that would mean a total metal cross section that waves will have to hit of about 1 mile. (51 times 99 feet equals 5,049 feet, and there are 5,280 feet in a mile.) If the applicant ends up building 100 larger sized Wind Float windmills (to accommodate the 6MW to 8 MW wind turbines it plans), then the total cross section of metal, that waves will have to hit, would be more than 2 miles.

Perhaps even more important than the one to two miles of total metal cross section that waves will run into, is the shape and configuration of the metal. The portion of a wave hitting and passing through a single Wind Float will have three large 33-foot-diameter metal cylinders (or larger) in a triangular shape in relatively close proximity to each other. As the waves hit a metal cylinder they will ricochet off in both directions laterally, and portions of the ricocheted wave energy will hit the other 33 foot cylinders almost immediately. As a wave hits and passes by the cylinders, the interactions of the deflected energy will be very complex. The deflected wave energy (what surfers would call a "side wave") will soon move laterally (on an angle) enough to interact with deflected wave energy from the adjacent windmill in that row, as the side waves wedge into each other. In addition to at least some net loss of swell energy reaching the world famous North Shore surf breaks and the Westside surf breaks, there is likely to be a very a significant increase in the messiness of the swell energy (in other words, a decrease in the "cleanness" of the swell energy that surfers want) as it hits and passes through the Wind Floats.

The problems with the decrease in "cleanness" of the wave energy, and increase in the messiness from the random deflected waves, will further increase as the wave and swell energy passes through the next row of Wind Float windmills. Disclose the potential adverse effects of the wind farm to surf quality at each surf break listed on Surfline.com in your EA and EIS. We support clean energy, but not at the cost of harming our surf. If you could tow the wind farm structures and drop the anchor lines so they're not in the water column October 1 through May 1 period, the adverse effects to our surf could be minimized. The adverse effect to our surf conditions is very troubling to our community and we will utilize every means available to ensure this Ka'ena Point wind farm is not constructed. E mālamānalu.

XIII. North Shore Has Done Our Part – Discussions Regarding North Shore Bid to Secede from Honolulu County

Downtown Honolulu and Waikiki are constructed with high-density commercial and residential structures so they have energy needs that exceed their local production capacity. The North Shore produces more solar PV and wind energy than we need to meet our electricity needs. We have done our part – listen to our North Shore Neighborhood Board and our residents – we have had enough and we will not allow another wind farm to blemish our viewplane, our wildlife, our ocean, our surf. E mālamānalu.

Most of us used to ignore discussions by members of our community who point out that the North Shore would be better cared for if our area were a separate County. Because of this Ka'ena wind farm, a number of us are now taking this option into serious consideration. If we were a separate county at least we could pass laws against the gigantic transmission line crossing our lands. We feel like urban Honolulu could support your proposed Oahu North site because it may be the cheapest solution rather than the solution that is acceptable to all of Oahu. We want solar with grid-level battery storage.

XIV. Albatross, 'Iwa Bird, endangered bats, Ka'ena seabirds, and Kauai seabirds

We thought wind development offshore from Ka'ena Point and Kauai would never receive any type of serious consideration because Ka'ena Point and Kaua'i are such important seabird conservation areas. Some seabird species are protected by endangered species laws, but others, such as the albatross, wedge-tailed shearwater, and 'Iwa bird (after which Hale'iwa is named... house of the 'Iwa) are not – ensure you address adverse effects to all seabirds and ocean life and explain how you will compensate for any adverse effects to all wildlife species. Because the wind farm will kill endangered birds and bats, BOEM must complete a State of Hawai'i Habitat Conservation Plan to obtain an incidental take license for take of the endangered animals. BOEM should not authorize construction of any vertical structure at sea until the Habitat Conservation Plan is approved by the State's Endangered Species Recovery Committee and the Incidental Take License is in hand. Without the Incidental Take License, the applicant would not be able to bring the powerline into State waters, and would need all components to remain three (possibly 15, depending on interpretation) miles offshore. The powerline is the reason the endangered species take will occur – if the powerline were not constructed in State of Hawai'i waters, the wind turbines have no utility – they would not be built. Therefore your applicant should be provided with guidance regarding your obligation to not make irretrievable commitments of resources prior to obtaining the Incidental Take License from the state of Hawai'i. Habitat Conservation Plans take several years to complete – three years would be a very ambitious timeline. In addition, explain why you are situating an experimental at-sea wind project smack in the middle of Kaua'i (the largest remaining population of Newell's shearwaters) and Ka'ena Point (the largest albatross population on the main high Hawaiian islands) in a sensitive ocean environment where upwelling of deep ocean waters results in high productivity and high densities of birds. In addition to causing its own nightmares, proceeding with this unpopular at-sea Ka'ena site is likely to bring unwanted public awareness and scrutiny to existing wind farms on the North Shore.

The BA, EIS, and HCP should detail how the proposed compensatory mitigation will benefit the threatened and endangered species and the species protected under the Migratory Bird Treaty Act. Explain the evidence you used to confirm the compensatory mitigation assures a “net benefit” to these species; reliance on the methods used by less controversial wind farms on land to compensate for adverse effects to migratory birds, bats, and threatened and endangered species are not scrutinized with the same level of concern this Ka’ena at-sea wind farm will. For the Ka’ena wind farm project, assess and report post-construction mortality of migratory birds and threatened and endangered species with no less than a 90% level of assurance – these species are important to us, so we would like to know, with 90% certainty, that the level of mortality you are reporting to us is an honest evaluation of the level of mortality occurring. Ensure the benefits of your compensatory mitigation projects are measured and reported with this same scientifically valid level of certainty. We recommend the following measures to minimize and compensate for mortality of our threatened, endangered, and migratory bird species associated with the Oahu North Ka’ena Point wind development:

Compensate for adverse project effects to albatross and wedge-tailed shearwater by ensuring the Ka’ena Point predator-proof fence is maintained and the area is kept predator-free during the 50 year term of the wind development. Funding for fence replacement should be kept in an escrow account naming DLNR as the beneficiary. The original fence construction cost approximately \$1 Million and the fence may be due for replacement about when your project starts. Plan to replace the fence every 10 years (\$5 Million total for fence replacements).

The Hawaiian hoary bat is likely to be killed by the proposed 50-year wind farm operation in the Ka’ena Point area where bats traverse the ocean between Kaua’i and O’ahu. The death of a strong bat traversing between islands would have a far greater effect to the Hawaiian hoary bat species than a local bat killed at its territory on land. The future genetics of the species may be affected by the proposed project. Install bat deterrent technology on every wind turbine structure to minimize the potential for bat take. Bat flight is primarily limited to light wind conditions, when wind speeds are less than 6.5 meters/second. Therefore, the turbine blades should only be engaged when wind speeds are higher. Curtail (feather blades to not catch the wind) when wind speed falls below 6.5 meters/second to minimize mortality of the endangered bat. Ensure your studies, during your three to five-year study period, are sufficient to confirm the compensatory mitigation you propose to offset take of the bat will increase bat numbers to offset any anticipated take of the bat. For example, studies such as research regarding the effects predators have to breeding bats could enable you to propose predator control in bat breeding areas to increase bat numbers to offset at-sea bat take. Studies of differences in bat numbers in disturbed versus native habitats could enable you to propose habitat restoration to compensate for bat take.

Likewise, during the three to five years of project planning, study the ‘Iwa bird in sufficient detail to understand the level of take you anticipate, in addition to understanding enough about its ecology to design a conservation project to compensate for the take of the species.

XV. There Are Likely to be Many Other Important Cultural Sites and Rituals Not Addressed Here

We understand Thomas Shirai hoped to bring you out to Ka'ena during your agency's July 2016 visit, but your trip was rained out. We hope you will gain respect for the Leina a ka `Uhane white rock limestone soul passage formation and you will remove sites within in view of the formation from further at-sea wind development consideration. Most people we talk to about this proposed action are surprised and have not heard about it. You may have done your legal minimum required outreach to get information to the public regarding the need for them to step up now if they would be affected by the proposed action, but that information has not been widely broadcast on the television or print news – it seems like no attention has been given to this project and most of the parties who would endure significant irreparable adverse effects know nothing about it. There are difficulties inherent in the Native Hawaiian's lack of Federal Recognition and lack of unification that complicate your aim to assure information is adequately disclosed and voices are heard.

XVI. Humpback whales, endangered Hawaiian monk seals, threatened Honu

Include an assessment of the harm the project will do to threatened and endangered ocean life including humpback whales, Hawaiian monk seals, and Honu, and specify the actions you will take to compensate for these effects. Address the effects of these threatened and endangered species pursuant to HRS 195D in a Habitat Conservation Plan that assures a net benefit to the species.

XVII. Deterioration of Support for State Clean Energy Goals

We are concerned wind farm development at this site could ultimately result in an uprising in opposition to the State's clean energy goals. Assess the effect proceeding with consideration of wind turbine development off Ka'ena Point will have to the public's support for Hawai'i's clean energy goals. We are so disgusted you would consider wind turbines in this location that we would rather press our legislators and Governor to reduce Hawaii's clean energy goals than see this project move forward. Assess the effect the wind farm will have to climate change factors including sea level rise, temperature, and energy independence. Tell us how the wind farm would reduce climate change and reduce electricity costs in exchange for disposing of the rights of Native Hawai'ians, residents, and ocean users. If a wind farm in the waters off Ka'enaPoint is necessary to meet the State's clean energy objectives, then reduce those objectives so a wind farm off Ka'ena is no longer needed to meet the goals. If you do ever hope to develop wind energy at this Ka'ena site, it might be wise for your developer to withdraw their lease application or for you to find a way to withdraw this site from consideration for now, and, years from now, once the reasonable alternatives have been tapped, only then should you come to the public with any development at this extremely sensitive and controversial site. Attempting to move forward with wind farm development at this site, now, seems to be a lose-lose situation for everyone.

XVIII. National Marine Sanctuary Nomination

In BOEM's July 21, 2016, public meeting introductory presentation, your public relations specialist indicated if the waters off Ka'ena Point were designated a National Marine Sanctuary, you would remove it from consideration for wind farm lease development. We have coordinated with NOAA and we understand we can specify the important existing cultural practices, spiritual rights, fishing, boating,

wildlife conservation, unobstructed view and other aspects of the area and the Sanctuary would be managed to conserve these existing rights and uses. We are coordinating with cultural, environmental, business, and community groups to draft a nomination of the site as a National Marine Sanctuary to assure existing rights to remain intact. Alternatively, given the broad opposition they heard at your public meeting and the feedback they have received from the public, we hope your applicant has developed a respect for our people and our environment and they respectfully withdraw their application. If the applicant decides to move forward with studies to address the public's concerns regarding the wind farm, please send us copies of the annual and final reports, data, and information obtained in the studies to help inform our National Marine Sanctuary nomination.

XIX. Summary

In summary, we strongly oppose at-sea wind farm development at Ka'ena Point. The public prefers solar PV to wind development – if you make a decision to install this at-sea wind development instead of meeting O'ahu's clean energy needs using solar, the burden is on you to explain how the wind farm alternative is in the public's best interest. Thank you for this opportunity to provide you with our preliminary concerns about the project. We anticipate we will refine these concerns if you move forward with a lease within the Oahu North Call Area and information about the selected project becomes available.

Kat Anhalt



Comment on North West Oahu call area/AWH Proposal (Comment 1 of 2) I am a strong supporter of wind energy, I am also a shareholder of wind parks on the mainland, as I believe in sustainable and renewable energy. Being a graduate student in the field of sustainability one would think I supported the proposed wind park, as it could be a potential employer for me in the future. Yet I strongly recommend abandoning the idea or at least postponing it for 20 years. This will leave enough time for the technology to advance further. Currently, it is not a safe technology. The proposed floating platforms are so far only being used in shallow waters in depths of no more than 150 ft, the northern call area would require the floats to be anchored in depths of 3,300ft. The channel between Oahu and Kauai is impacted by strong currents, it is Hurricane area, the winter swells are some of the biggest in the world and the risk of a tsunami hitting the island is omnipresent. This is not the area for testing a prototype. There is not enough data on the performance of floating wind farms during high seas and storms. AWH states in their project proposal that there was no track record of significant presence of protected or endangered species in the Kaena point call area. (Hawaii Offshore Wind Energy Lease Application Oahu Northwest, p. 10 <http://www.boem.gov/AWH-Northwest-Project-Lease-App/>) The protected populations of Albatross and whales are not even mentioned. This shows a lack of understanding of the area by the Danish company. In March 2015 a federal judge ruled in favor of protected whales in Hawaii in a case brought forward by Earthjustice lawyers. (<http://earthjustice.org/blog/2015-september/navy-sonar-settlement-brings-historic-win-for-whales>) The drilling, needed to secure the anchors for the wind turbines, will cause significant noise disturbance for marine mammals like whales that frequent the area. Similar court cases will be coming during the construction and operation of the proposed offshore wind park. From an economic perspective this project doesn't make sense for the community. Most offshore wind parks, are not lucrative, due to the maintenance cost being higher than expected, as all repairs have to happen out at sea and are therefore more difficult to undertake. Corrosion will cause parts to break down making frequent replacements necessary. The developer will surely make a profit, but the long term benefit for the community, that the marketing of the project is advertising, is a lie. The Aloha+ challenge is a fantastic goal to achieve, but to rush into a project that looks like it will turn into a economic and ecological disaster, just to increase renewable energy on the island, is the wrong way. A lot of people will probably be in favor of this project, as all they hear is sustainable energy. Yet it is important to thoroughly analyze the quality of the proposal. I came to the conclusion, that this project is not sustainable.

Kat Anhalt



Comment on North West Oahu call area/AWH Proposal (Comment 2 of 2) There have been a huge rise of solar panels on Oahu. One of the current problems with solar is the fluctuation of its' availability, due to sunlight hours. HECO claims to not be able to support more photovoltaic systems in certain areas, as the net was already saturated with solar energy. So far, there are no numbers on how the wind availability on certain times of the day is. In coastal areas the wind tends to die off in the evenings. If this was the case in the call area also, then most wind electricity would be generated during the day at peak solar times and therefore conflicting with solar energy for grid capacity. This issue needs to be addressed before proceeding further. The EIS (Environmental Impact Study - study, not just statement) needs to evaluate this. What is needed on Oahu is a renewable energy source that has the flexibility to react to demand by providing more or less energy to fill in for the times of low solar energy availability. Currently this is done by burning oil, coal and waste. But there are also sustainable energy sources that so far are not very present in the discussion on Oahu e.g. biomass, biofuel and hydro. In Germany, biomass is established as an energy source, despite the short growing season. In Hawaii, where there is a year round growing season and plenty of biomass growing quickly due to plenty of sunshine and rain, biomass would provide a sustainable, cheap and flexible alternative. Energy can be obtained from fast growing crops (e.g. corn), from landscaping waste and weeds (California grass!) and from household food waste. This would also have a positive impact on the climate: Methane, a greenhouse gas that gets produced during the natural decomposing process of organic matter, gets burned in order to create energy. Therefore the methane won't enter the atmosphere. On the first sight, the offshore wind park seems to be a solution for renewable energy. But a more in depth analysis of the technology, integration into the current grid system, ecological impact, estimated economic benefit show this project is not sustainable, has negative environmental consequences and will not be economically beneficial for the community. Therefore it should be stopped. Alternative energy sources that are more suitable for Oahu's geographical and climatic situation, e.g. biomass, should be encouraged instead in order to achieve the goals of the Aloha+ challenge to increase the sources of renewable energy.

Keala Fuiava



To whom it may concern, In regards to the proposed windmill farm in the ocean near Kaena point, as a resident born and raised on the North Shore, I vehemently disagree with your proposal. The area has cultural significance to many local families who swim, dive and enjoy Kaena point and the beauty found there. In addition, Kaena Point is the home of our local bird sanctuary. Placing large windmills in this area will surely impact the current residents of the sanctuary, creating potential hazards in flight. Finally, Karna point is beautiful. It is one of the very few places left on the North Shore untouched and enjoyed by not only the locals but visitors alike, we do not want your windmills in our ocean! We do not want to see your windmills when we look out to sea! We do not want your proposals!

Kenneth A. Martyn

Attorney at Law



Licensed to practice in Hawaii

September 7, 2016

Comments on Hawaii EA
Regional Director, BOEM
Pacific OCS Region
760 Paseo Camarillo, Suite 102
Camarillo, California 93010

Offshore wind energy is an established mature industry worldwide. However, more than 99.9% of offshore wind energy comes from fixed pylon windmill platforms attached to the ocean bottom in shallow waters. Anything deeper than about 50 meters is generally not feasible with fixed pylon technology.

In contrast, the technology for floating wind turbines is in its infancy. At this time there are only three places on earth that have built and installed any type of floating windmill. The total number of completed floating offshore wind turbines in the world today is six.

Currently, there is a race around the world between three different large corporate groups, utilizing their respective different proprietary floating windmill technologies, to push the technological ability for small demonstration wind farms into waters in the 100 to 150-meter depth range.

In contrast, the Hawai'i waters being considered for immediate leasing by the BOEM are waters in the range of 800 meters (2,700 ft) deep (off Waikiki) to 1000 meters (3,300 ft) deep (off Kaena Pt). This is truly deep water, far beyond the present capabilities of any of the corporate offshore wind technology groups in the world today. .

The fact is that at this point in time, there is no way to know which company will best solve the technological difficulties of deep water wind power. To pick one group's proprietary technology now, when the problems might be better solved for Hawai'i with a different group's proprietary technology, would clearly not be in Hawai'i's best interest. Each promoter seeking a lease at this time for Hawai'i's waters comes with the same proprietary technology (Principle Power's "WindFloat" proprietary technology), **which has never yet been successfully deployed in waters greater than 45 meters deep.**

The other two large corporate group s¹ proprietary technologies are not even available in this leasing, probably because they are each prudent enough to not bid on projects in waters that are more than five times deeper than their corporate group's technology can yet achieve.

¹ Those other two corporate groups are: (1) the Japanese Fukushima consortium (which includes Hitachi and Mitsubishi corporations, and is probably the best capitalized), and (2) the Statoil group, both of which are discussed later in this letter.

A lease should not be granted to these outer continental shelf (OCS) areas of the ocean off Kaena Point, to any applicant unless the applicant can show that it is technically and financially capable of building and decommissioning the applicant's proposed windfarm project.

For example, Paragraph 6 on page 41341 of the Federal Register June 24, 2016 announcement of these leasing possibilities (Federal Register Volume 81, No. 122) states that the applicant must provide:

"6. Documentation demonstrating you [the applicant] are technically and financially capable of constructing, operating, maintaining, and decommissioning the facilities described in (2) above."

Item No. 2 above states: "2. A description of your objectives and the facilities you would use to achieve those objectives."

That is the actual wind farm project itself, not just some small weather buoy to be deployed at an early phase of the project. This is clearly can be seen from the application that was submitted for the "north call area" lease.

On page 3 of the application, immediately after the Table of Contents, under the heading "Overview, Objective" the application states:

"AW Hawaii Wind, LLC (AWH), a Member of the Alpha Wind Energy (AWE) group of companies has an ambition to and an interest in developing a 400MW full scale offshore Wind Energy Project (the "Project") sited in close proximity to the Hawaiian Islands with the option to expand further. The Project would comprise large-scale offshore wind turbines on WindFloat foundations."

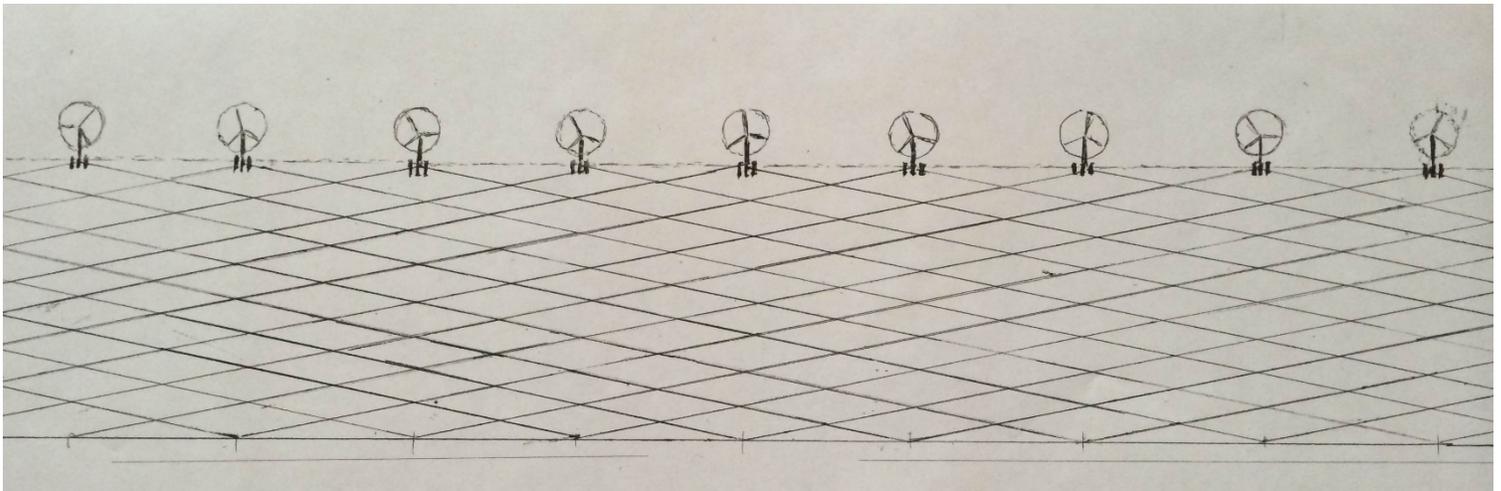
The applicant has not satisfied those criteria. The applicant cannot show that it has the technical capability of building the Project (which is the whole offshore windfarm), because at this time no one in the world has yet demonstrated the technical capability to build even a solitary floating wind turbine (let alone a large-scale wind farm) in water anywhere near as deep as the waters being proposed for these leases. **This applicant has access only to the WindFloat proprietary technology, and that technology has never been deployed successfully yet in waters deeper than 45 meters.**

In addition, the applicant does not have the financial ability to build the actual wind farm. The application shows a pro forma budget indicating that the applicant believes it can build the wind farm if it can find \$2 billion. The applicant has openly acknowledged to both members of the public, and the BOEM, that it does not presently have a line of credit for that money. Instead, it hopes to obtain the leases, and then use the exclusive rights granted in the leases, to try to raise the money to move to the next phase in its project.

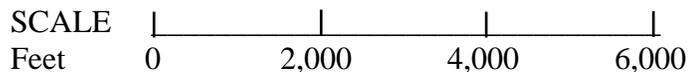
AN EIS (or at least an EA) should be done on the Applicant's ENTIRE proposed Project now.

In any event, no lease should be granted to this applicant, for the Kaena Point OCS waters, until an EIS is performed that actually studies how the proposed "WindFloat" technology in a large-scale floating windfarm would affect Hawaii's environment.

Here is a scaled drawing of what the intersecting web of steel anchor cables would look like underwater:



3,300 FEET WATER DEPTH (1,000 Meters)



5 to 1 Very Minimal Anchor Scope (Shown w/o deflection line weights)

This 2D image shows only one-half the actual number of anchor lines.

(Actual number will be 4 anchor lines per floating windmill. Each floating windmill would have a 3rd anchor line coming off the page at the viewer, and a 4th anchor line going away from the viewer)

In addition, there would also be the underwater electrical cables (not shown in this image), that would connect each floating windmill to the floating transformer sub-station.

NOTE: Rougher conditions require greater anchor scope in order for an anchor to hold. Actual anchor scope would probably need be more than 5 to 1.² That would mean even closer spacing between the steel cables. At only 5 to 1 anchor scope, the steel anchor lines would need to

² The most recognized authoritative treatise in the United States on marine matters is *Chapman, Piloting & Seamanship* (65th Edition), which at page 331 states: "With all-chain rodes, a scope of 3:1 to 5:1 is adequate for all *normal* conditions." (Emphasis supplied.) The windmills would need to be able to avoid dragging anchor not just in normal conditions, but also in the extremely rough conditions that occur multiple times per year in the open-ocean waters off Kaena Point. The federal courts have cited *Chapman* numerous times as an authoritative treatise in maritime legal cases.

extend laterally more than 3 miles (about 16,500 feet) in each direction, from each floating wind mill.

Windmill spacing in the scaled drawing is shown at 2,000 feet (Based 4 rotor diameters per windmill [mid-range of spacing described in the AW Wind Hawaii application], with 75 meter rotor blades [probable size for 6 to 8 Mega Watt (MW) turbines the applicant hopes to be able to use], therefore rotor diameter is shown at roughly 500 feet).

Humpback Whales and other protected marine life

This is being planned for an area (the waters off Kaena Point on the North Shore of Oahu) where federally protected humpback whales (and other protected marine life, such as for example monk seals) frequently travel in and through. The proposed windmills, and their web of crisscrossing anchor cables, are likely to adversely affect that whale habitat.

Effect on Birds, including Rare and Endangered Species

Such floating windmills are likely to act as fish aggregation devices (FADs), which then attract birds that are frequently killed by the turbine blades. Many of the birds in the Kaena Point area are part of rare and endangered species.

Negative Impacts on Fishermen

Based on other parts of the world, fishermen are likely to be excluded from fishing in or near such windmill farms (due to safety and security concerns), even though the fish are collecting around the windmills, so there are likely to be less fish to be caught elsewhere.

Potential Damage by Hurricanes

The applicant for this ocean lease (AW Wind Hawaii, LLC) has admitted in its application that these floating windmills are vulnerable to damage from a hurricane. How much of a mess a hurricane could cause with these floating windmills, should be studied and considered in an EIS before any such lease of our ocean is granted.

For example, especially in the case of a large Category 3, 4, or 5 hurricane, not only will there be very substantial movement of windmills due to anchor line slack, there may also be very substantial anchor dragging by these “WindFloat” vessels. That anchor dragging is not likely to be uniform among all the “WindFloat” vessels, so the crisscrossing anchor lines may get pulled into each other, and contribute to capsizing of windmills. In addition, the direct wind pressure alone may cause one or more of these floating windmills to capsize (in addition to the breaking of fiberglass rotor blades as acknowledged by the applicant).³

³ Resistance to capsizing for any given floating windmill design, and potential wind speed, can be estimated mathematically, and tested empirically with large scale models in test tanks, as the Japanese corporate group (which includes Hitachi and Mitsubishi corporations) has been doing for their proprietary floating windmill designs, before deploying them at sea.

Who will be responsible to clean up such a tangled mess? Not this applicant (which is an LLC with no liability for its member-owners), and which does not even have the financial ability to build the project, let alone the ability to clean up and decommission such a mess.

Visual Impacts

The windmills would also be clearly visible from the North Shore, and from the Makaha area, and deeply offensive to many people. These impacts should be addressed in the EA.

Impacts to Native Hawaiian Cultural and Spiritual Beliefs and Practices

Kaena Point and the waters off the Kaena Point are considered sacred to many people, and especially to many people of Native Hawaiian ancestry. This is Hawaii, and we try to show respect for all cultures and ethnic groups that live here, but we have a special obligation to show respect for the cultural and spiritual beliefs and practices of Native Hawaiians. The federal government should also, please, show respect for the cultural and spiritual beliefs and practices of Native Hawaiians by either not permitting a large-scale wind farm to be built in these waters or, at an absolute minimum, requiring genuine and serious consideration (in consultation with Native Hawaiians and their organizations) of those negative impacts in the EA or EIS that is prepared for the applicant's proposed windfarm project, before any lease is granted.

Negative Impacts on Surf Quality

Please consider seriously the technical analysis (attached as an exhibit to this letter) of the negative impacts the applicant's proposed offshore windmills are likely to have on the quality of surf at various world-famous North Shore (and Westside) surf spots. This is a very important matter.

Other proprietary offshore floating windmill designs (for example, the single cylinder "spar buoy" floating windmill design owned by Statoil, which is not available to this applicant) would likely have much less negative impact on surf quality, so the impacts of this applicant's proposed 3-cylinder "Wind Float" proprietary technology should be studied now, before any lease is granted to this applicant.

It is also noteworthy that the swells that will be most harmed by the applicant's proposed windmills will be the very common moderate sized, mid-period, swells – such as the typical and common winter 13 to 14-second interval, 6 to 8-foot swell events. This is because a higher percentage of the swell energy of those very common moderate sized, mid-period swell events will be in the top 70 feet of ocean, and therefore hitting the lower portions of the applicant's proposed "WindFloat" type of floating windmills (compared to the very rare 20-second interval swell events, which will also be adversely affected, but not as much percentage-wise).

Other Technical Problems That Should Be Studied Before a Lease is Granted:

Interrelationship between Extreme Water Depth and Number of Floating Windmills

The deeper the water, the more movement there will be at the surface for floating windmills using any conventional anchoring technology systems (all three corporate groups worldwide that have actually built a floating windmill are using different versions of conventional anchoring technology). With a single floating windmill, this is not as much of a problem as it is with even a small group of floating windmills.

With a large-scale floating wind farm project (which no one has yet built anywhere in the world at any water depth), the amounts of floating windmill movement will become even more critical to understand and control.

The Japanese corporate group (which includes Hitachi and Mitsubishi corporations) is the farthest ahead, and the only group that has actually built even a small demonstration group of floating windmills (3 windmills on floats of different designs and shapes), which they are now operating in 100 to 150 meters of water near Fukushima, Japan. They are now studying carefully the actual amounts of floating windmill movements in various weather conditions (and refining anchoring strategies and techniques) in the hopes to be able to eventually build a viable large-scale project in that same water depth.

The Statoil group in Europe, is hoping to soon build a small scale demonstration wind farm off Scotland with 6 floating windmills in 90 to 120 meters of water. The Principle Power group is hoping to build a small scale demonstration wind farm off Portugal of 3 to 4 floating windmills in 85 to 100 meters of water.

A large-scale floating windfarm in Hawaii in waters 1,000 meters (3,300 feet) deep may, or may not, turn out to ever be actually feasible with conventional anchoring technology. If not, then deep water oil drilling technology (such as that used by BP Petroleum in its Deepwater Horizon oil drilling platform that failed in the Gulf of Mexico), could potentially be adapted and used someday in the future to support an offshore floating windmill, rather than oil drilling equipment, even in water depths up to about 2 miles deep. However, this may, or may not, be ever able to be done in a cost-effective way. That technology is currently way too costly to even coming close to being economically viable for a single floating windmill turbine (and the spacing needed between windmills would preclude placing more than one windmill per platform).

Which, if any, oil company group ever finds a way to adapt that deep water drilling technology in an economically viable manner to use for floating offshore wind turbine use, remains to be seen. In any event, however, this applicant for this ocean lease in the waters off Kaena Point, does not have rights to use that maybe-to-be-created-in-the-future proprietary technology.

Amount of Usable Power That Will Actually Be Generated

The applicant, which is led by Danish wind promoter Jens [pronounced Yens] Peterson, states in its application that the "capacity factor" (which is also sometimes called the "load factor" or "utilization ratio") of its proposed windmills will be in the 35% to 40% range. However, it provides no backup or support for this bold assertion.

The "utilization ratio" is a very important figure because you have to multiply the utilization ratio times the rated capacity of the proposed wind farm (in this case 400 MW) in order to determine the average amount of electricity that will actually be produced.⁴

A recent objective scientific-academic study⁵ concluded that for offshore wind power (even on stable fixed pylon platforms) the harsh marine environment appears to dramatically reduce the "utilization ratio" of offshore turbines. That study found that for Danish offshore wind farms, the "utilization ratio" (also called "load factor") initially began at 39%, but after the end of 10 years it had dropped all the way down to 15% on average for those Danish offshore wind farms. That study stated that it could not tell for sure, based on the data it had collected, what all the problems were that led to dramatic drop in the utilization ratio of those Danish offshore wind farms. However, the study concluded that a major portion of the dramatic drop in the utilization ratio was likely the result of repair and maintenance problems for those offshore wind farms.

The marine environment in the rugged ocean waters off Kaena Point, and moist tropical salt-filled air, is likely to be even harder on equipment than the marine environment in Denmark. In addition, the shifting and movement that will be experienced by the floating "WindFloat" platforms will subject the turbines to more stress than fixed pylon wind platforms in Denmark. As a result, the maintenance and repair problems, and corresponding drop in the "utilization ratio" of the Wind Float wind farm proposed for Hawaii is likely to be much worse than the drop from 39% to 15% experienced by the Danish offshore wind farms.

Transformer Substations

According to the applicant's application, the electrical cables leading out of the windmills have to pass through a single (or at most 2) transformer substation(s), before the power is then transmitted from the transformer substation (via a larger the undersea electrical cable) to shore. The transformers are needed in order to increase the voltage of the windmill output up to at least 69 KV, or preferably 138 KV. The higher voltage transmission line from the transformer substation to the shore connection several miles away, allows for less electricity to be lost along the way.

⁴ The "utilization ratio" (which is also called the "load factor" or the "capacity factor") is calculated as the ratio of the amount of electricity actually produced by a turbine or wind farm over a period time (preferably over at least a few years) divided by the amount of output that would have been produced had it operated at full nameplate capacity for the entire period. This is expressed as a percentage, so that reported utilization ratios (or load factors) lie between 0 and 100%.

⁵ Prepared by Gordon Hughes, Professor of Economics at the University of Edinburgh, [The Performomance of Wind Farms in the U.K. and Denmark](#), published by R.E.F 2012. (See Par. 3 of its Executive Summary)

However, transformer substations are notoriously fickle and subject to failure when used in a marine environment, even when placed on fixed pylon platforms that do not move and wobble. When a transformer substation fails, all of the power from all of the windmills that are connected to it is immediately lost. The application for this lease proposes to simply place a standard transformer substation, on a moving floating “WindFloat” platform, and hope for the best.

This is another reason to wait and not enter leases so soon, or at least study all of the environmental effects (including the reliability of the power the applicant claims will be produced) of the applicant's proposed project now, before approving a lease.

For example, there is competing floating substation transformer technology (which is not available to this applicant because it is proprietary to the Japanese group building the Fukushima demonstration wind project in 100 to 150 meters of water). The Japanese consortium (which includes Hitachi and Mitsubishi corporations) is the first (and only) group in the world to ever actually build a floating offshore transformer substation. The Japanese group has experimented with various different styles of floating platforms, and has built their transformer substation on a proprietary design called an "advanced spar" platform, which they own the proprietary rights to. The advantage of the “advanced spar” floating platform is that it has much less rocking than a traditional three-float or four-float platform similar to the “WindFloat” platforms. In addition, the Japanese group is developing proprietary technology in the transformers themselves to resist the marine environment and the rocking. The Japanese group is working on advanced techniques for sealing the transformer substation components from the marine environment, and also subjecting them to rigorous testing in large cages that are being shaken in different amounts and different degrees, simulating the offshore floating environment.

The Proposed Offshore Windmills Will Need Large-scale On-shore Battery Storage Technology, Which Has Not Yet Been Developed as a Cost Effective, Commercially-available Product.

The amount of power that will come out of a large scale offshore wind project like this, will vary considerably from hour to hour, and day to day. As we move toward 100% electric self-sufficiency from renewable resources in 2045, there will be less and less variable on-demand power from natural gas or diesel fired power plants available. On the mainland and in Europe, electricity can move to adjacent areas in large interconnected commercial purchases and sales. In Europe and on the mainland, wind power can also be paired with things like on-demand hydroelectric power. Hawaii does not have those options.

We do not yet know what large scale battery technology, and/or hydrogen storage technology, etc. will, or will not, be available in 10 years or 15 years. The experiment with custom built, large-scale batteries at the Kahuku wind farm has been a disaster. That is another reason not to sign ocean leases now for a wind farm. While we are waiting to see who actually wins the technological race to develop truly deep water floating wind generation technology, we will also hopefully have a much better idea whether the energy storage on land that would be needed to accompany it, will, or will not, have been developed into a commercially reasonably and cost-effective technology.

Distributed Solar Generation, and Distributed Battery Storage Should Be Considered As An Alternative.

The price of solar panels has dropped dramatically over the last 10 years, and is expected to drop further in the future. In addition, small scale batteries are now becoming commercially available and economically viable, such as the Tesla wall power units. Prices on batteries are expected to drop dramatically over the next 5 to 10 years as the technology improves and more manufacturers enter the market to compete with Tesla.

Maximizing the amount of widely distributed solar generation and battery storage also helps reduce grid costs in two ways. First, electricity needs to travel shorter distances, on average, so that helps reduce total grid costs. In addition, the new Tesla power wall batteries actually smooth out the power on the grid and help make it easier and less expensive to maintain the grid.

HECO formerly was dragging its feet on approving rooftop solar installations (which was understandable because it was forced under the old “net metering” rules to pay the full retail value for the excess electricity produced, which was unsustainable on a long-term basis since there was nothing left for HECO profit or for grid maintenance). Now that HECO is allowed to pay a wholesale rate of 18 cents per kilowatt hour for power received from rooftop solar, but charge a retail rate of roughly 33 cents per hour for power consumed by grid connected customers, HECO finally has at least some economic incentive to approve more rooftop solar installations. In addition, once the Public Utilities Commission (PUC) sets the grid connection standards to allow a combination of grid connected solar panels plus battery backup that can feed into the grid from the batteries, then consumers will have an economic incentive to purchase the new Tesla batteries (or other new small-scale commercially available batteries). Rather than selling power back to HECO at 18 cents, a customer could store the excess afternoon power, and then use it in the evening so that they purchase less 33 cent per kilowatt hour power.

Much more than this can also be done relatively easily with solar power. For example, switching to digital smart meters (which can tell the time of day that electricity is transmitted to HECO or from HECO) coupled with variable pricing of electricity (cheaper wholesale and retail rates in the middle of the day, and more expensive rates during the peak evening hours of 6 to 9:00 p.m.) will create dramatic incentives for more people to invest in distributed storage wall batteries, even if they don't have solar panels on their roofs. The new Tesla-type wall batteries can be set to draw power from the grid when the price is cheap (during the midafternoon), and then deliver all or a portion of it back to the grid to sell it at a higher price that evening, during the 6 to 9:00 p.m. peak consumption time. Simply changing a few PUC rules and standards can have a dramatic positive effect on unleashing market forces to produce and store far more solar energy in Hawaii.

Instead of rushing into signing leases for deep water offshore wind, when the technology for doing so has not even been yet developed (and the technology for storing that large-scale variable energy has not yet been developed), we should begin by seeing how much of our renewable energy goals can be met with distributed rooftop solar and distributed battery storage. That can also be coupled with large scale utility-scale solar production. In any event,

offshore ocean leases should not be signed prior to studying and comparing these alternatives in an EIS, or at least an EA.

CONCLUSION

If Hawai'i wants offshore wind to actually work, the developer must have the technological and financial ability to build, operate, maintain and decommission the actual wind farm proposed, but at this time, neither Principle Power, nor any other company, has the technology to build an offshore floating windfarm in waters of 1,000 meters deep. Principle Power has built one floating wind turbine, and one only. It was deployed in water of 45 meters deep off Portugal for 5 years, then decommissioned.

The entity seeking to lease the waters of Hawai'i's outer continental shelf off of Kaena Point is a promoter. Its goal is to secure water lease rights and create opportunities to try to get someone else to buy their water lease rights and try to build a wind farm using their unproven "WindFloat" technology, after they obtain leases and permits. Hawai'i & BOEM should be concerned about the fact that this promoter would be tying up our offshore ocean real estate and preventing others from getting a lease - others that might, in the not-too-distant future, be able to take the financial responsibility for the construction and decommissioning of an offshore floating wind farm, and utilize a proven offshore floating wind technology in waters of 800 to 1000 meters deep.

Please e-mail me (at kmhawhome-009@yahoo.com) any draft EA that is prepared.

Thank you for your time and attention in reading this letter (and hopefully also the attached technical analysis exhibit, on the potential negative impacts on surfing on the North Shore of Oahu).

Very truly yours,



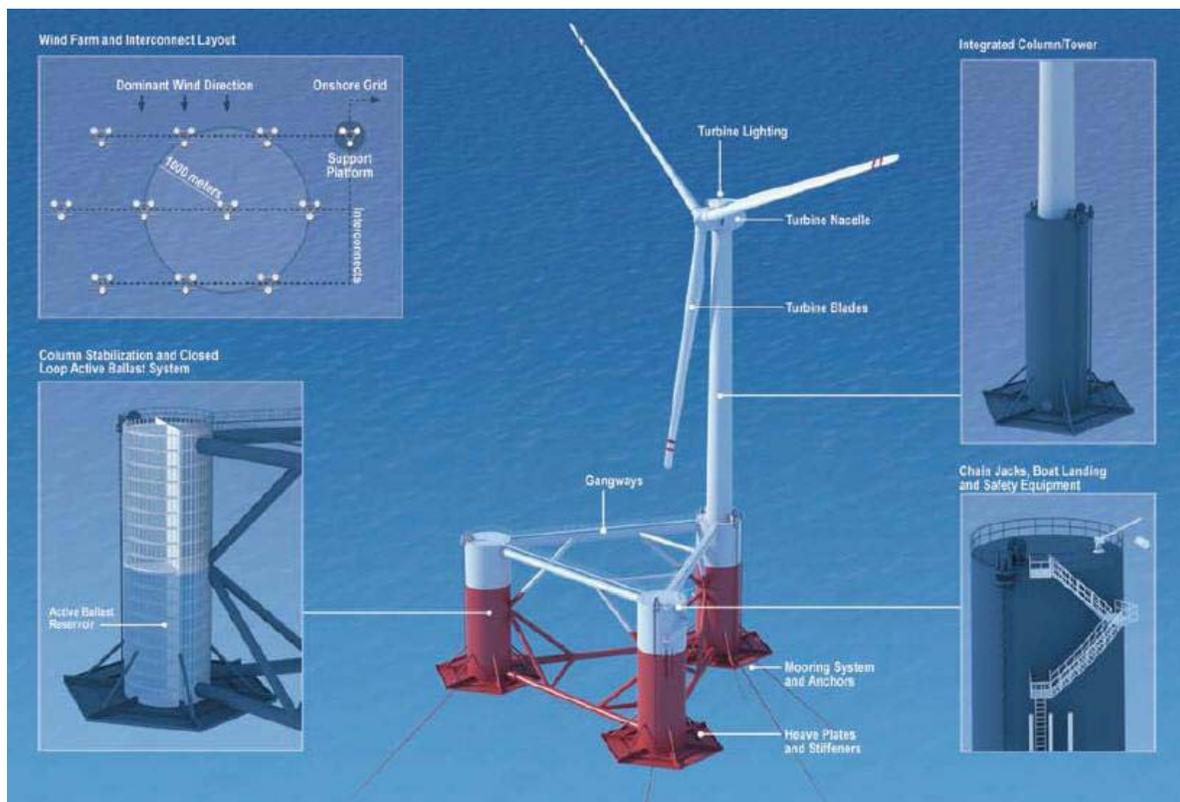
Kenneth A. Martyn

The Proposed Offshore Windmills Will Likely Hurt the Size and Quality of Surf

The proposed offshore windmills have the potential to seriously negatively impact the quality of surfing. The windmills could result in a decrease in the size of surf, and a very large decrease in the quality of surf, at many of the premier surf breaks on the North Shore of Oahu, and also on the Westside. The quality and "cleanness" of surf at the following world famous surfing breaks on the North Shore could be adversely affected: Haleiwa, Waimea Bay, and Pipeline (along with numerous lesser-known surf breaks also being affected), and also the Westside surf breaks at Yokohama, Makaha, and Ma'ili.

The northern "call area" for the proposed windfarm off Kaena Point extends many miles north of Kaena Point. For Haleiwa, swells from the west all the way to the northwest would have to pass through the wind farm "call area" in order to reach Haleiwa. For Waimea Bay and Pipeline, swells from the west and west-northwest would have to pass through the windmill farm "call area" before reaching those surf breaks. Those are some of the best surf directions for Haleiwa, Waimea Bay and Pipeline. For the Westside surfbreaks, such as Yokohama, Makaha, and Ma'ili, almost all winter swells would have to pass through the windfarm "call area" before wrapping around Kaena Point into the Westside.

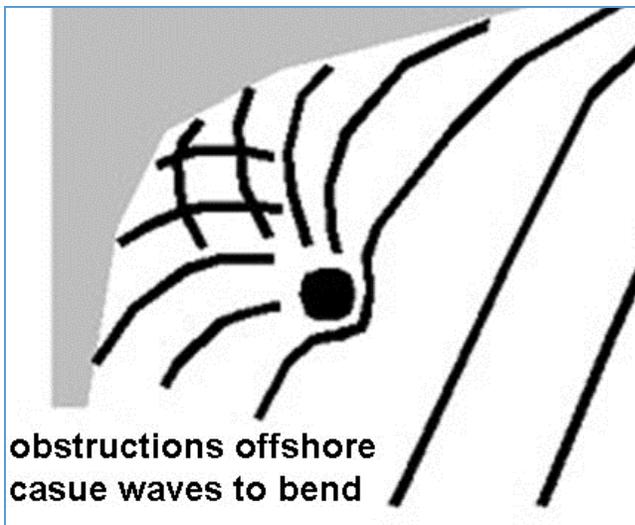
The ocean lease applicant for the northern "call area" (an entity called AW Wind Hawaii, LLC which is led by a Danish citizen, Jens [pronounced Yens] Peterson) proposes to build at least 51 floating windmills, and is clearly trying to reserve the option to build many more, possibly 100 or more. Each floating windmill is proposed to be built on a patented "Wind Float" platform similar to the photo shown on the applicant's application. The photo on the application is of a single demonstration Wind Float windmill that was built in northern Portugal. Here is a diagram from the application:



The Wind Float platform that was built in northern Portugal is anchored in water that is only 40 to 45 meters deep. In contrast, the waters in much of the northern “call area” off Kaena Point are about 1,000 meters (3,300 feet) deep. That is 5 to 6 times deeper than anyone anywhere in the world has ever successfully anchored floating windmills, and more than 20 times deeper than the applicant’s demonstration Wind Float in Portugal.

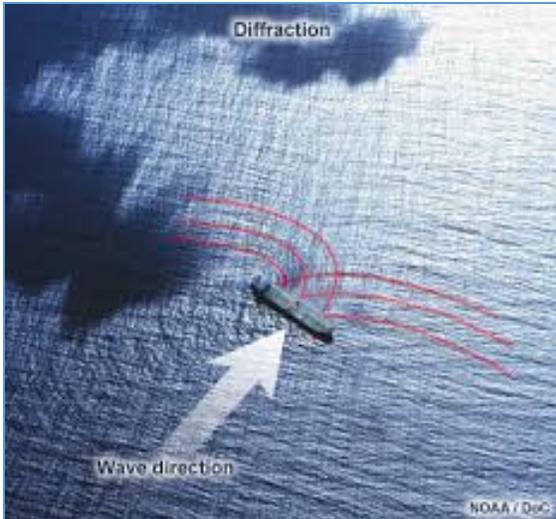
The demonstration Wind Float in Portugal is anchored by four steel-cabled anchor lines that spread out in four directions. The Wind Float itself consists of three large steel semi-submersible cylinders that have a diameter of 10 meters each (33-foot diameter each), and extend down more than 70 feet into the water. The three cylinders are set in a triangle held together with various steel tubes and cross braces, and the windmill tower sits on one of the three cylinders. The single demonstration Wind Float in Portugal has a 2.4 MW (megawatt) Vestas brand wind turbine. For Hawaii, the applicant is proposing to use wind turbines in the 6 to 8 megawatt (MW) range. As a result, the size of the Wind Float cylinders that would be needed in Hawaii will be even larger than the ones used in Portugal.

Even with the smaller size of the Wind Float in Portugal, the total cross section of steel for each Wind Float will be 99 feet (three times the 33-foot diameter for each cylinder). Each cylinder would extend more than 70 feet down into the water, and then connect to the anchor cables. Even if only that smaller-sized Wind Float were built, and even if the applicant only built 51 of the windmills, that would mean a total metal cross section that waves will have to hit of about 1 mile. (51 times 99 feet equals 5,049 feet, and there are 5,280 feet in a mile.) If the applicant ends up building 100 larger sized Wind Float windmills (to accommodate the 6MW to 8 MW wind turbines it plans), then the total cross section of metal, that waves will have to hit, would be more than 2 miles.



Perhaps even more important than the one to two miles of total metal cross section that waves will run into, is the shape and configuration of the metal. The portion of a wave hitting and passing through a single Wind Float will have three large 33-foot-diameter metal cylinders (or larger) in a triangular shape in relatively close proximity to each other. As the waves hit a metal cylinder they will bend around and ricochet off in both directions laterally, and portions of the bent and ricocheted wave energy will hit the other 33 foot cylinders almost immediately. As a wave hits and passes by the cylinders, the interactions of the deflected energy will be very complex. The deflected wave energy (what surfers would call a “side wave”) will soon move laterally (on an angle) enough to interact with deflected wave energy from the adjacent windmill in that row, as the side waves wedge into each other. In addition to at least some net loss of swell energy reaching the world famous North Shore surf

breaks and the Westside surf breaks, there is likely to be a very a significant increase in the messiness of the swell energy (in other words, a decrease in the “cleanness” of the swell energy that surfers want) as it hits and passes through the Wind Floats.



The problems with the decrease in "cleanness" of the wave energy, and increase in the messiness from the random deflected waves, will further increase as the wave and swell energy passes through the next row of Wind Float windmills.

Other proprietary offshore floating windmill designs (for example, the single cylinder “spar buoy” floating windmill design owned by Statoil, which is not available to this applicant) would likely have much less negative impact on surf quality, so the impacts of this applicant’s proposed 3-cylinder “Wind Float” proprietary technology should be studied now, before any lease is granted to this applicant.

September 7, 2016

Comments on Hawai'i EA
Regional Director, BOEM
Pacific OCS Region
760 Paseo Camarillo, Suite 102
Camarillo, California 93010

A Local Resident's Perspective:

I have been a resident of the Mokuleia community for the past 27 years. I live about five miles down the road from Ka'ena Point on the northwest shore of Oahu. I have always felt it was a privilege to live here, and also a responsibility. This is the most isolated chain of islands in the world, and it has the most isolated population of over a million people of anywhere on Earth.

We have the privilege of living in a spectacularly beautiful mountainous place situated in a relatively pristine ocean, and it is the home of many unique and special life forms. Although the effects of this dense modern civilization have been devastating to many of the native Hawai'ian plants, animals and culture, and has altered our pristine, beautiful, blue ocean waters and its marine organisms, we still have plenty to protect.

We live primarily on the land, yet many, many of those who live here are 'of the ocean.' They fish, they surf, they sail, they paddle, they swim, they dive, they walk the sandy beaches and play in tide pools, they view the sunsets and breaking surf, they hear the ocean sounds and watch the clouds drift over blue waters. They monitor sea turtles, monk seals and humpback whales. This is who we are—connected to and sustained by the natural environment. We often hear the oceans described as the last great frontier to be conquered, filled with resources for man's use. But most of us living in Hawai'i know that our ocean is not here for us to conquer, but for us to respect and protect, for it sustains us. It is our responsibility to restore and preserve this very unique and special place on Earth. So it is very important that we, so privileged to live on these islands, take very seriously our responsibility to carefully address the current proposal to lease waters off of Ka'ena Point for the purpose of constructing a floating wind farm.

What might we gain?

Hawai'i has a set goal of becoming completely independent of oil resources for its electricity production by 2045. Clearly getting ourselves free from imported oil would not only be a boost to us economically, but also contribute to reducing global warming and its negative effects on the earth's environment—that is a gain for Hawai'i.

But how much renewable energy is Hawai'i likely to gain from this proposed 400 MW off shore wind farm?

The lessee, AW Wind Hawai'i, LLC, states that a "conservative" estimate of the expected wind energy from this 400 MW wind farm would be 35 to 40 percent of the nameplate rated capacity, which would result in an average usable rate of 140 MW to 160 MW.

How realistic is this estimate?

If we consider an analysis of data taken from offshore windfarms in Denmark, performed by Gordon Hughes, Professor of Economics at the University of Edinburgh and the Renewable Energy Foundation of the UK, this estimate doesn't seem quite so likely (1). In this analysis it was shown that for Denmark the average load factor (average rate of energy actually produced) for fixed offshore wind energy was 39% for the first year. However, by age 10 the average load factor fell to 15%. Mr. Hughes states that "the reasons for the observed declines in normalized load factors cannot be fully assessed using the data available but outages due to mechanical breakdowns appear to be a contributory factor."

The load factor is the rate of energy actually produced by the farm divided by the nameplate capacity value that could be achieved under ideal condition. For example, if an 8 MW wind turbine generated electricity at a rate of 1.6 MW, its load factor would be 20%. Based on this study, a 35 to 40 percent estimate would not be conservative at all, but rather quite optimistic. Importantly, this data is taken from fixed offshore wind farms, because currently there is no significant data on floating offshore wind farms. In addition, the marine environment off the coast of Ka'ena Point is one of the harshest in the world and the maintenance on these windmills is likely to play a significant role in the farm's productivity.

What is the status of the floating offshore wind technology in the world today?

The offshore floating wind farm technology in the world today is very much in its infancy. The technology is unproven. As of this date, there have been five floating wind turbines put in ocean waters anywhere on the Earth. That is all. The largest wind farm, built in waters of 100 to 150 meters deep, which was just completed this past July off the coast of Fukushima, Japan, has three floating turbines and one floating transformer station. It was built by a Japanese consortium of companies, testing two of its own patented floating technologies. The Japanese are just beginning to do the analysis on this small, experimental wind farm, so there is no load factor data available yet for this small farm. This company is also testing the movement of turbines, which is an important factor when there are several wind turbines situated in a ocean farm.

The 1st offshore floating wind turbine was built off the coast of the Norway in 2009 by a Norwegian company in water depths of 200 meters, using its unique patented spar floating wind technology. In 2011 the Norwegian company reported a load factor of 46% for this turbine. <http://www.windpowermonthly.com/article/1105527/hywind-sway---norways-two-floating-turbine-designs>). This turbine is still producing energy today.

The company that the Northwest Oahu lessee states he will be using for our floating wind farm technology is Principle Power. This company has built and installed one 2 MW turbine off the coast of Portugal in water depths of 45 meters, using its unique patented floating wind technology, referred to as Windfloat. In a recent press release from this company it was reported that this single turbine produced 17 gigawatt hours of electricity over five years (2). This calculates into a load factor of approximately 19.5%. This floating turbine was decommissioned this past summer. Using the limited data we have for floating offshore wind turbines built with Principle Power's technology, it seems that a 35 to 40 percent load factor would be very optimistic, and that there is no significant evidence to support such an estimate.

What is known about Principle Power's floating offshore wind technology?

Principle Power's Windfloat technology has only been tested with a single 2 MW wind turbine deployed in waters of 45 meters deep off the coast of Portugal. This is not a windfarm. This is one floating wind turbine tested in shallow waters. Importantly, the waters of the call area northwest of Ka'ena Point are 1000 meters deep (3,300 ft). If you visit Principle Power's website (<http://www.principlepowerinc.com/>) they list their off shore wind projects. At first glance it appears that they have completed five projects, including one in Coos Bay, Oregon in waters of 300 meters deep. However, upon further research one finds no evidence that any of these projects, other than the Portugal one mentioned above, have been completed, and most have not been started. The Oregon project was to be a 24 MW windfarm with four turbines. This one is on hold because the cost for this windfarm is simply too high and none of the electrical utilities are willing to purchase it.

Do we have enough evidence that AW Wind Hawai'i, LLC has the technical experience to build Hawai'i an offshore floating wind farm that can cost effectively produce the energy we need to warrant offering them a lease?

Based on the fact that the offshore floating wind technology is still very much in the experimental stage the world over, and the fact that the Principle Power technology is totally untested in water depths of 1000 meters, and the fact that this technology has not been tried at a scaled up wind farm level with multiple wind turbines floating in somewhat close proximity to each other, I would argue that it would be irresponsible of Hawai'i to go forth with lease.

What will we lose if we issue a lease to the Northwest Oahu wind farm applicant, AW Wind Hawai'i, LLC?

First, and very important, Hawai'i would lose the opportunity to lease its water later on to any company that has developed a technology proven to work efficiently at the wind farm level and in water depths of 1000 meters (3,300 ft.) because once AW Wind Hawai'i, LLC. has secured its lease, it would have exclusive rights to these waters, and Hawai'i would not be able to solicit or entertain bids from any other off shore floating wind technology industry. Why should Hawai'i give up its options now? We are not under any serious time threats. In fact, according to the President and CEO of Hawai'ian Electric Company, "we are well ahead of our 2015 renewable energy goals." (3)

Secondly, we would now be heading down a track that is going to have several negative ecological impacts on our ocean. As stated earlier, Hawai'i is a very unique and special place on the Earth and it is our responsibility to restore and protect it from any further degradation. Do we dare take a chance with such unproven technology?

Effects of AW Hawai'i LLC's wind farm on Humpback Whales, Monk Seals and other large sea animals:

The technology that AW Wind Hawai'i proposes to use to anchor its floating turbines could create a major habitat disruption to humpback whales, monk seals or other large sea animals. Their windmills will be built on floating platforms made of three, 10-meter (33 ft) wide steel floating cylinders (see Fig. 1), with steel anchor lines and 20 ton anchors. Each cylinder of the platform will be anchored with one steel cable, except for the cylinder with the wind turbine attached to it, and that one will have two steel cables. AW Wind Hawai'i will need to use a minimum anchor scope (the ratio of anchor line to water depth—the amount of anchor line required to hold a ship in place under average ocean conditions) of 5 to 1 to keep its turbines reasonably in place in the rough waters of the Kauai Channel. (Let us hope that AW Wind Hawai'i would not use anchor lines of 850 meters, as written in their proposal. Even though that would fit nicely within each block of the OCS, it will hardly hold the turbines in place.) Since the water depth for this farm will be 1000 meters, this will require 20,000 meters (12 miles) of anchor line for each turbine. Thus for the entire 51 turbine farm, they will be placing 1,020,000 meters (600 miles) of steel cable underwater. Each turbine will have four anchor cables each of 5000 meters (3.1 miles) extending in four directions from its floating platform.



Figure 1: Principle Power Wind Float Technology. Arrows mark where anchor lines will come off of the floating platform.

AW Wind Hawai'i states that it is likely to layout its 51 turbines with a distance of 3 to 5 rotor diameters between turbines and 5 to 20 rotor diameters between rows. The rotor diameter is approximately 150 meters (500 ft). Regardless of which of these distances AW Wind Hawai'i decides to use for its layout, these cables will inevitably be crisscrossing underwater. These

crisscrossing cables will extend over an area of 13.4 square miles, the call area for this project. In addition to the proposed anchoring cables, there will need to be high voltage electrical cables coming off of each turbine. AW Wind Hawai'i does not yet know what technology will be used for this. It could be floating cables or umbilical cables connecting each turbine to its neighbor or maybe even buried cables coming the full 1000 meters down to the bottom of the ocean from each turbine and then going to shore. The point is, building this floating wind farm will be creating an underwater crisscrossing meshwork of cables, much like a large net, over an area of 13.4 square miles of relatively pristine ocean waters.

The call area for the Oahu North West Project is in a known Humpback whale migratory pathway, and it is inhabited by other marine mammals, including the endangered Monk seals, which can be seen regularly resting on the rocks at Ka'ena Point, as well as dolphins and other sea animals. This amount of underwater steel cabling poses a real threat to the habitat for the precious Humpback whales that visit the Hawai'ian Islands every year to birth and feed their young, and to the monk seals that make it their home year around. Will this create an entanglement for the Humpback? That is not known, but must be determined. What is known is that this will seriously disrupt their habitat, and likely cause confusion and perhaps lead to death of babies and mothers. How can we consider creating this potentially threatening habitat for these endangered species while we test a technology that has not yet been proven to generate the power that we need? This would be acting irresponsibly and not in accord with the privilege we have been given to live here.

Possible Effects on Coral Reefs:

Closely linked to the negative effects of the underwater steel cables to the lives of marine mammals are the potential effects that all this underwater steel, including the floating steel platforms and anchors, might have on our coral reefs. Recently it was shown that changes in reef biota from coral to microalgae could unambiguously be attributed to manmade structures. It is believed that the iron leaching from the steel of a ship wrecked in 2001 is the cause for a rapid invasive of the reef off of the remote Palmyra atoll by the corallimorph species, *R. howesii*. In addition, reefs within short distances of moored buoys also showed a similar displacement of coral by algae. Iron is an essential trace element for algal growth and iron is also a limiting nutrient for some primary producers. Thus increasing the iron concentration, even small amounts from manmade structures, can have major effects on colonization of reefs. The leaching of iron or any other elements from the cables and floating platforms must be carefully considered in an EIS before granting a lease for this windfarm.

The Nature Conservancy's Hawai'i Marine Program was launched in 2001 to restore and protect our near shore reefs. They inform us that our reefs are the home to 7,000 marine life forms, with one quarter of these life forms found nowhere else on Earth. We now know that manmade structures, specifically steel structures that leach iron into the water, can have deleterious effects on our ocean's reefs. How can we possibly grant a lease that would allow for more than 600 miles of steel cable and hundreds of tons of steel anchors and cylinders to be placed in our oceans? We have a responsibility to care for these precious waters and the native coral reefs.

Possible Effects on sea bird populations:

Hawai'i became one of the first states in the country to recognize the importance of its unique natural resources by establishing the Natural Area Reserves System (NARS), in 1970. The NARS were created to "...preserve in perpetuity specific land and water areas which support communities, as relatively unmodified as possible, of the natural flora and fauna, as well as geological sites, of Hawai'i." (Hawai'i Revised Statutes § 195-1) Ka'ena Point is known for its relatively unspoiled natural beauty and the Ka'ena Point Natural Area Reserve was established in 1983 to help protect what is Hawai'i's last intact dune ecosystem on the main Hawai'ian Islands. It is a 59-acre park managed by the Hawai'i DLNR and recognized as an important cultural and natural resource. Ka'ena Point has the largest seabird colonies of the eight main Hawai'ian Islands and recent surveys have estimated approximately 2,000 seabirds use Ka'ena Point as their breeding grounds, and many more than that use the area as a place of refuge.

The nesting seabirds at Ka'ena Point include the Laysan Albatross, Wedge-tailed Shearwater, and the White-tailed Tropicbird. There are also several species of migratory shorebirds that use Ka'ena Point. These include the Wandering Tattler, Ruddy Turnstone and Pacific Golden Plover. The presence of 51 floating wind turbines covering more than 13 square miles of ocean near Ka'ena Point will inevitably be taking the lives of many of these birds. Furthermore, these floating turbines will likely act as fish aggregation devices and actually lure these sea birds right into the turning rotor blades as they seek the fish below the surface. How can we justify doing this to the very birds we are responsible for protecting, while we experiment with an unproven offshore wind technology?

Disrespect to our Native Hawai'ian population

Ka'ena Point is recognized as an important site of archeological and cultural resources, and was proposed as a National Natural Landmark in a 1981 National Park Service survey of the Hawai'ian Islands. It is visited by many people, local and tourists and still used by Native Hawai'ians in their spiritual practices. There is a strong relationship in Native Hawai'ian culture between the people and the 'āina (land), wai (water), and kai (ocean) and this formed (and still forms) the basis of their lives and established the spiritual relationship between them and the environment. Building this windfarm within sight of a spiritually significant Native Hawai'ian area is a serious affront to our Native Hawai'ians.

Among the Native Hawai'ian uses of the area is the Leina a ka 'Uhane (Soul's Leap) a limestone formation, which plays a role in a spiritual practice for the dying. It is the basis of a Native Hawai'ian tradition and belief that marks Ka'ena Point as the place where the fate of departing souls is determined as death nears. This is a sacred tradition and the Native Hawai'ians do not want to "feel" the crisscrossed underwater entanglement cables or see the floating turbines and rotor blades or flashing red lights at the time of death. We must honor this sacred spiritual practice. It is an obligation we have. And even though I am not Native Hawai'ian, I can feel the insult this wind farm would cause to all of us who 'are of the ocean.'

Wouldn't it be more reasonable to focus on solar energy now and put aside wind energy until the technology improves?

The gains that an offshore floating windfarm built with unproven technology in the waters off Ka'ena Point will bring to Hawai'i's energy needs are very uncertain at best, yet the potential harm to our humpback whales, monk seals, albatrosses and other sea birds, coral reefs and Native Hawai'ians are very clear. Hawai'i needs to put aside wind energy, for now at least, and focus on our abundant feasible renewable solar energy.

The pressure to develop off shore wind is not great because of our abundant solar energy.

Hawai'i, unlike many other places on earth, has been blessed with an abundance of solar energy, because of our location on the Earth at 19° to 22° latitude. We receive far more solar energy than any of the countries that are pushing forward with wind energy, such as the UK, Europe and the Netherlands. Hawai'i is unique, and we should capitalize on this uniqueness when planning our path to 100% renewables, and not get caught up in the rest of the Earth's location-based issues. Remember we are the most isolated and remote population center on Earth, and our resources and issues are very different from anywhere else.

Because of the abundant solar energy in Hawai'i, we do not need to rush forward with wind energy. Instead, we can focus on our solar energy while the offshore floating wind technology matures. If, in the future, five to ten years from now, the offshore wind technology looks more feasible for Hawai'i, we can reconsider it for less sensitive ecological and cultural areas than Ka'ena Point water.

Already Hawai'i has made great gains in moving towards its 2045 energy goals and, in fact, as Alan Oshima, President and CEO of Hawai'i Electric Company recently reported in the HECO newsletter, Ho'oku'i, we went from 9 to 23 percent renewable energy in less than a decade, and we are well above the state's 2015 goal. He also said that we expect to be at 43 percent renewable by 2020 (2). Much of this has been through distributed roof top solar panels. But we have only just begun to harvest Hawai'i's solar energy, and we are nowhere near topping out on it.

Advantages of Distributed Solar Energy and Distributed Battery Storage

Rather than getting sidetracked by putting our effort and money into the unknown floating offshore wind energy, Hawai'i could put a concerted effort for the next few years on solar energy. There are many advantages of distributed solar energy. First, this solar energy technology is advanced and commercially available, and the costs have plummeted in the last five to ten years, and are expected to continue to decline. Combinations of grid connected solar panels plus battery backup that feed into the grid can provide significant amounts of energy, and has already been a big factor in moving us toward our energy goals. We can easily expand on this by speeding up and increasing the number of approved rooftop solar installations, and by offering incentives for people to invest in available battery backups like Tesla's wall power units. Such incentives might include establishing variable pricing of electricity (cheaper rates during the day when the sun is shining and higher rates during the peak hours of the evening, 6 to

9 pm) which would encourage people to purchase the Tesla-type wall battery and save their cheap energy produced during the day for evening use when the rates are higher.

Second, unlike the large moving parts of a wind turbine set in the harshest marine environment on earth, which will require a significant amount of maintenance, solar PV panels without moving parts, are low maintenance. The decreased down time for solar maintenance makes this a much more cost effective renewable energy than wind.

Also, whether we are installing roof top panels on homes, commercial or industrial buildings or building solar farms on vacant land, these structures are not obscuring our view planes and upsetting people the way that the large wind turbines do. This is a very important consideration. The natural beauty of Hawai'i is another one of its important resources and its tourism industry is based on this natural beauty.

How Distributed Solar Generated Energy Helps our Grid

Improvement of Hawai'i's grid should be a major priority and an important part of our clean energy agenda, regardless of the source of our renewable energy. Maximizing the amount of widely distributed solar generation and battery storage would help reduce grid costs in two ways. First, distributed electricity needs to travel shorter distances, so that helps reduce total grid costs. Secondly, the new Tesla power wall batteries actually smooth out the power on the grid creating less stress and reducing maintenance costs overall.

What about energy storage for large scale renewable energy production?

We need to consider the fact that as we get closer and closer to our 100% renewable energy goal we are going to be more and more dependent on variable energy sources. With any large scale variable, renewable energy like wind, or large solar farms, we are going to need utility level battery storage to feed energy back into the grid when it is dark or the wind isn't blowing. This fact is not discussed in the lease application, other than the fact that they acknowledge this is a huge problem to be solved, by presently unknown means. But if HECO wishes to have 30% of its renewable energy tied up in wind, as was reported by Mark Glick of DBEDT in his public presentations in May, then we are going to need utility level batteries to store the wind energy for times when the wind isn't blowing. We do not know what large scale battery technology, and or hydrogen storage technology, etc. will or will not, be available in 10 to 15 years. Therefore, it makes more sense for us to focus on the roof top distributed solar energy production now, while we wait to see what happens with the large scale batteries.

Conclusion

Commissioning a floating offshore wind farm in waters off of Ka'ena Point using the unproven Principle Power technology, or any other technology available at this time, is not going to bring Hawai'i the renewable energy benefits it is hoping for. The applicant, AW Hawai'i LLC, simply cannot demonstrate that it has the technological ability to build, operate, maintain and decommission the proposed a wind farm that meets our needs.

This applicant is a promoter with goals very different from Hawai'i's. AW Hawai'i LLC's goal is to lease the outer continental shelf and see if it can make money from that. Hawai'i's goal is to build a cost effective offshore wind farm that will deliver a stable amount of renewable energy over at least a 20-year period. There is absolutely **NO** evidence that AW Hawai'i LLC can do this. In addition, Hawai'i and the BOEM should be very concerned about forfeiting our options to lease Hawai'i's waters later to a future entity that might come forth with proven technology and experience, because we have prematurely given exclusive use rights to this promoter through signing a lease now.

Instead of signing leases for deep water offshore wind, when the technology for doing so has not even been developed, let's begin by seeing how much of our renewable energy goals can be met with distributed rooftop solar and distributed battery storage. That could also be coupled with large scale utility-scale solar production, which will certainly not require as much maintenance as a huge wind farm floating in extreme ocean waters off Ka'ena Point.

Furthermore, there are many potential negative environmental, economic and human harms that could come from this project—harms to Hawai'i, its land and its ocean, which we that are privileged to live here have the responsibility to protect. These harms include those mentioned in this letter; humpback whale, monk seal, dolphin and other ocean animals' habitat destruction, reef destruction, devastation to sea bird populations, disrespect to Native Hawai'ian's, and loss of beautiful ocean views.

Other harms not mentioned in this letter include damage to our sustainable fishing industry, damage to our world renowned big-surf waves, damage to Ka'ena Point or the Waianae coast where the high voltage electric cable lines will need to come to shore, and loss of pristine ocean waters enjoyed recreationally by many.

Please, thoroughly address all of these potential harms in an EIS before granting a lease.

Mahalo for this opportunity to present comments.

Kendra Martyn
Mokuleia Resident

References

- 1.) Gordon Hughes, The Performance of Wind Farms in the United Kingdom and Denmark
Renewable Energy Foundation, 2012
- 2.) <http://www.principlepowerinc.com/en/news-press/press-archive/2016/06/02/principle-powers-windfloat-prototype-celebrates-its-5-year-anniversary-and-the-final-stage-of-technology-demonstration>
- 3.) Alan Oshima, Customer value, clean energy drive action and innovation, Ho'oku'i
Hawaii Electric Company, August 2016 Volume XXXV- Number 8
- 4.) Thierry M. Work, Greta S. Aeby, James E. Maragos, Phase Shift from a Coral to a
Corallimorph-Dominated Reef Associated with a Shipwreck on Palmyra Atoll, PLoS
ONE, www.plosone.org, August 2008, Volume 3, Issue 8: e2989

Kimberly Moore



NO WINDMILLS KAENA POINT. As a long time resident, homeowner and voter, I vehemently object to any windmills placed in our pristine Hawaiian waters. Our government should be protecting our Islands, not selling bits off to the detriment of all.

Margaret Bond



Why are we even discussing off-shore wind leasing when wind energy is inefficient (if not useless) and expensive? Some European countries have abandoned their off-shore projects. Shouldn't their experiences tell us something? This environmental assessment is just another way for our tax dollars to be wasted on pie in the sky ideas that will not benefit the average taxpayer. Please do not fund this project.

Miram Noelani



No more windmills on the north shore of Oahu. Leave the ocean and the land as it should be

Odin Hill



I firmly believe an offshore wind farm will have a negative effect on the whale migrations, the proximal land (some native Hawaiian), the aesthetics of the North Shore and possibly the waves as well. The existing wind farm in the Pupukea area is an eyesore and has little of the other concerns I just mentioned. I see no real benefit to having the proposed wind farm in the location that is being suggested. I oppose this wind farm. 

Submitter Information

Name: William Quinlan

Address:

Email:

Organization: NA

General Comment

Under the umbrella of increasing the production of clean energy, The Bureau of Ocean Energy Management (BOEM), is proposing that a wind farm to generate electricity be located offshore from Kaena point. Perhaps as close as 7 miles.

BOEM has issued a notice of Intent (NOI) to Prepare an Environmental Assessment (EA) for Wind Leasing and Site Assessment Activities on the Outer Continental Shelf (OCS) Offshore the Island of Oahu.

This despite the fact that at three separate Oahu community meetings BOEM employees were told clearly by attendees that Kaena Point is wrong for many valid reasons.

This is NOT NIMBY.

Here are three of the most significant reasons that Kaena Point is not appropriate:

Cultural.

The words "culturally offensive" were used by a highly respected practitioner.

No-one who does not live in Hawaii can understand how sacred Kaena Point is and how deeply the installation of windmills in the Ocean between Kaena Point and Lanai will hurt native Hawaiians. one analogy would be burning down a Christian Cathedral.

It is hard to believe that our President, who was born in Hawaii and has visited Kaena Point every Christmas since he became President, has not already put a stop to this proposal.

Environmental.

The potential negative effects to the environment are significant. Protected birds will be killed, fish habitats and spawning runs will be negatively affected, waves (read surfing, surf contests, tourism) will be affected. Too many negatives to cover in this comment..

Infrastructure.

Apart from the dangers involved in bringing the electricity across the ocean floor to land, (which Hawaii has already rejected) the plan includes above ground wiring from Mokuleia to Wahiawa which would be costly and very intrusive on the environment.

At the most recent BOEM presentation on Oahu I specifically asked if there was built into the process points in time when they are required to consider whether based on the information they have been provided with to that date they could recommend that the proposal be rejected.

The clear answer was: NO.

What this means is that they will continue with the Environmental Assessment, despite the unanimous rejection of the proposal by Neighborhood Board #27, and those who gave testimony at the two recent hearings.

The EA will undoubtedly find some issues that need to be dealt with.

That will trigger the need for an EIS (Environmental Impact Study). When the EIS finds issues the next step will be to find ways to make the negatives least offensive, as opposed to outright rejection of the proposal. Then the process will move inexorably to the next step towards ultimate approval.

During the hearings, the BOEM representatives regularly made the statement that no windmills will be built within 10 years.

Meaningless.

What they should have been saying is that unless someone with the necessary authority (our President, or the BOEM Director) rejects the proposal, it will slowly move to approval, and windmills will be installed in the Ocean off Kaena point some time after the 10 year mark, despite the negative feedback from those who will be most affected.

This proposal should be cancelled immediately and no further funds should be expended on unnecessary additional Assessments.

Submitter Information

Name: Rexann Dubiel

Address:



Email:



Organization: Private Citizen

General Comment

Bad idea. Solar is the answer. Wind is not sustainable. Track record in Hawaii proves it. Just another developer wanting a piece if Paradise Pie to the detriment of residents and guests.

Submitter Information

Name: Thomas Jacobs

Address:

[REDACTED]

Email:

[REDACTED]

Phone:

[REDACTED]

Organization: NA

General Comment

Our family is in favor of consideration of ALL options for environmental friendly energy production that will make Hawaii independent of carbon fuels. [REDACTED]

[REDACTED]

Thomas Shirai



Kawaihapai Ohana

The Kawaihapai Ohana is recognized by DOI (Dept of Interior) as an NHO (Native Hawaiian Organization) It's the only NHO which includes Ka'ena Ahupua'a as part of it's Kuleana. NO ATTEMPT TO CONTACT IT WAS EVER INICIATED moreso other entities without a specific relationship were contact and this is very DISRESPECTFUL The Kawaihapai Ohana has experience participating in this process successfully with other governmental agencies regarding similar matters. BOEM has along way to go regarding this and must be mindful were are ISLAND PEOPLE and not like a CONTINENT where similar situations occur. Having shared the above, as Po'o , the Kawaihapai Ohana, STRONGLY OPPOSE ANY INTENT AND PROPOSAL FOR A WINDMILL FARM OFF KA'ENA POINT. Ka'ena is an extremely rich and sacred area heavily documented in Bishop Museum. There are also several songs and chants about this sacred place. There is also a NAR (Natural Area Reserve) and BFRFA (Bottom fish Restricted Fishing Area) to protect flora, fauna and marine life offshore. Areas outside of the NAR and BFRFA are highly used subsistence gathering areas and interact with the migration of marine mammals and subsistence species. There are several state records of subsistence species and significance caught at Ka'ena. therefore some of the ancient stories coincide with the abundance and productivity of the area. Further verification is the documented fishing shrines of the area.. A unique story of this place is where the Demi God Maui fished up the Hawaiian Islands with his brothers while fishing there. There's also extremely religious and cultural significance regarding Ka'ena which is the departure point into the after life. Due to this highly sensitive and regarded subject I'll not mention further. The 500-600ft wind turbines greatly disrupts spiritual and visual realms. Also it also impeades of vessel and aircraft transiting the area along with possibly interfering with the USAF Tracking Station at Kuokala Ridge overlooking Ka'ena. Within that property is a heiau (temple) dedicated to sun worshipping. There are alternatives to renewable energy that doesn't require taking of land or ocean. Wind Energy is not as productive as heat therefore there is an alternative not being shared called Solar Roads which is being done on a portion of Highway 66 in Missouri and France is dedicating 1000kms o their roadways for this. It could be used to replace concrete or asphalt on our highways or roads instead of taking the ocean away. It seems since Sugar and Pineapple have diminished here the next entity to replace it as large landowner is HECO and or Renewable Energy. Thank you for the opportunity to provide comments opposing all proposals and intent to proceed for a wind farm off shore of Ka'ena Point. Thank you for the opportunity to provide comments OPPOSING ALL PROPOSALS AND INTEN TO PROCEED FOR A WIND FARM OFF SHORE OF KA'ENA POINT. Malama Ka'ena. Thomas T Shirai Jr - Po'o Kawaihapai Ohana

Thomas Shirai



Kawaihapai Ohana

See attached file(s) I'm a lifetime resident of Mokule'ia spanning several generations here in Waialua on the Northwest Coastline of Waialua encompassing the Ahupua'a of Kamananui, Mokule'ia 1 & 2, Kikahi, Aukuu, Kawaihapai, Kealia and Ka'ena. For this comment the focus is regarding Ka'ena. Through NAGPRA and State of Hawaii HRS Chapter 6E I've substantiated Lineal Descendant recognition applicable to my relationship to this Ahupua'a of Ka'ena where my family once owned before the Mahele. Today the parcel is called the Ka'ena Natural Area Reserve (NAR) where it protects the flora, fauna, marine life (near shore) along with cultural and historical sites and on the State of Hawaii Registry of Historic Places situated within the Ka'ena Complex as listed. Off shore of the NAR is an established BRAFA (Bottom Fish Restricted Fishing Area). This was not a random parcel that my kupuna were charged with but with strict stewardship however during the plantation era things and events began to change greatly and the diminishing of stewardship until about 15-20 years with manual cooperation and coordinated abandoned vehicle removal along with large tonnage of rubbish removed with the assistance of the Army. Today's condition is never like it was during the initial cleanups. Some residents and constituents throughout the years have also submitted several pieces of legislation aimed to protect and improve Ka'ena Ahupua'a and therefore create BOEMing layers of protection. It would be a waste if a proposal of this magnitude to destroy all our work to Malama Ka'ena. Before continuing, BOEM needs to follow and be more mindful regarding this NEPA process. I believe recognized Lineal and Cultural descendants along with Native Hawaiian Organizations have precedence regarding consultation prior to the public. In my community, I'm active in Cultural and Community Affairs. As a member of the Mokule'ia Community Association which is the host community and North Shore Neighborhood Board 27 (Sub District - 1 Mokule'ia to Ka'ena) I believe there is extreme opposition to this proposal and intent to proceed regarding a wind farm off shore of Ka'ena Point. The attachments included provide pertinent information applicable to this Wahi Pana. Noteworthy, in the attachments is an alternative and acceptable form of renewable energy called Solar Roads. The main component of this alternative is that taking of land or in this case water is not required because it can replace concrete and asphalt roadways (H-1, H-2, and H-3) along with others. This technology is being used for Route 66 in Missouri and 1000km in France. It's being used at secondary airport aprons. Heat is much more reliable than wind. If installed on street) During this election year, some areas have Capitol Improvement Projects to re-surface roadways and therefore the solar road panels can be easily installed for a pilot project. No community benefits package was ever presented at community hearings. Another concern is that since Pineapple and Sugar Industry have diminished I feel that HECO and Renewable Energy will replace them as large land and ocean owners and that we've also just disapproved HECO merging with an out of state entity based in Florida therefore trying to force this wind farm proposal. Thank you for the opportunity to provide comments opposing a wind farm off shore of Ka'ena Point. Malama Ka'ena Thomas T Shirai Jr Mokule'ia, Waialua





France to pave 1,000km of road with solar panels

26 January 2016 | By David Rogers

42 Comments

Ségolène Royal, France's minister of ecology and energy, has said that the government intends to pave 1,000km of road with photovoltaic panels in the next five years, supplying power to millions of people.

"The maximum effect of the programme, if successful, could be to furnish 5 million people with electricity, or about 8% of the French population"

-

The minister told a conference of transport authorities last week that the tenders for the "Positive Energy" initiative had already been issued and the tests on the panels would begin in the spring.

According to France's Agency of Environment and Energy Management, 4m of solarised road is enough to supply one household's electricity needs, apart from heating, and one kilometre will light a settlement with 5,000 inhabitants.

So the maximum effect of the programme, if successful, could be to furnish 5 million people with electricity, or about 8% of the French population.

The solarising of France's roads involves glueing 7mm-thick strips to the surface of the carriageway. The basic technology for this has already been developed by Bouygues subsidiary Colas.

The company's Wattway panels (pictured above), which took five years to develop, were unveiled [in October](#).

Wattway cells collect solar energy using a thin film of polycrystalline silicon, but are resistant to the passage of heavy goods vehicles and offer sufficient traction to prevent skids.

Ms Royal has proposed to pay for improvements in France's transport infrastructure by raising taxes on petrol, which she said was "natural" given the falling cost of oil.

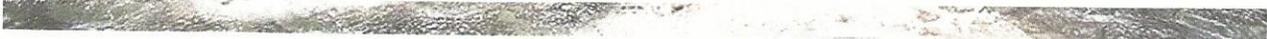
She estimates that this could contribute between 200 and 300 million euros (\$220-440m) to the cost of improvements such as road solarising.

A number of countries are pursuing the energising of roads. Last year a Dutch consortium built a 100m-stretch of [power generating road](#) in the Dutch town of Krommenie, and in the US a husband and wife team is [pursuing the idea](#) after a successful crowdfunding campaign.

Top photograph: A trial stretch of road being laid with Colas' Wattway. The photovoltaic surface can bear the weight of six-axle trucks (Colas)



Ségolène Royal, France's minister of ecology and energy, IN 2009 (Mikani/Wikimedia Commons)



Solar paving to make first public US appearance on Route 66

10 June 2016 | By GCR staff

28 Comments

The US state of Missouri has decided to test solar paving technology on America's most famous road, Route 66.

The state's transportation department will use tough, electricity-generating panels developed by the pioneering husband-and-wife team Scott and Julie Brusaw, founders of the company Solar Roadways, who [captivated the US in 2014](#) with their plan to pave America with solar panels.

The department hopes that the Historic Route 66 Welcome Center at Conway will get the country's first solar roadway panels on a public right of way, in a move one official said would bring "the history and the future together".

The plan was unveiled this week in Kansas City as one of four pilot schemes to probe future highways technology in the state.

"If their version of the future is realistic, if we can make that happen, then roadways can begin paying for themselves," said Tom Blair, leader of the department's Road to Tomorrow Initiative, according to newspaper [The Kansas City Star](#).

"We expect them to be in place, I'm hoping, by the end of this year, maybe before snow flies," Blair said, adding the project could generate a lot of interest by bringing "the history and the future together".

It was not revealed how large an area would be paved with the panels. According to the newspaper, to get the most out of the project the department will seek crowd funding.



The latest model of Solar Roadways' electricity-generating paving panel (Solar Roadways)

In this the department will be hoping to replicate the success of Solar Roadways' 2014 crowd funding campaign, in which they raised \$2.2m in two months, more than double their target of \$1m.

The Brusaws, of Sandpoint, Idaho, have been working on their system for 12 years, and got a boost in 2009 in the form of a \$100,000 grant from the Federal Highway Administration to build a prototype solar road panel.

They have since received two more research grants from the US Department of Transportation, the latest in November 2015, worth \$750,000, to study freeze-thaw cycling, moisture conditioning, shear testing, and advanced loading on their third-generation panel prototype.

They have claimed that paving all of America's roads and parking lots with the panels would generate 13,385 billion kilowatt-hours of electricity, more than three times the amount the whole country consumed in 2009.

“We are going to go out there publicly and on the internet ... and ask for money to make our solar roadway pilot project even bigger and better,” Tom Blair said.

More information about Solar Roadways can be found [here](#).

In [January this year GCR reported](#) that the government of France intends to pave 1,000km of road with photovoltaic panels over the next five years.

The idea drew strong [criticism from readers](#), who questioned the viability of paving roads with solar panels.

Top photograph: A concept rendering of a solar-paved highway (Solar Roadways)



Mail Buoy

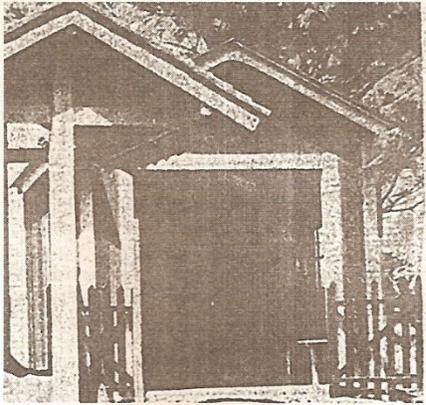
Aloha Chuck,

Hope this E-mail finds you and your family fine. I respectfully and humbly request the attached article I wrote be featured in an upcoming edition of *HFN*. Please contact me for any inquiries regarding this article.

Keep up the great coverage. Look forward to hearing from you.

Mahalo nui loa,
Thomas T. Shirai Jr.
Waialua, O'ahu

Akua House



■ This Japanese fishing shrine, also known as Akua House, was located on the shore of Mokule'ia Bay across from Kawaihapai Camp. In 1913 Japanese residents of Kawaihapai Camp built the shrine. Its purpose was the same as that of the Hawaiian fishing shrines (*ko'a*) along this northwest coastline of Waialua Moku: to ensure good luck when fishing. Coincidentally, that year my beloved Grandpa (David Peahi Keao Jr.) was born. He and with his 'ohana and *kupuna* (both men and women) were skilled *lauai'a* (fishermen). *HAWAII FISHING NEWS* recorded catches near Akua House that included 100-plus-lb ulua.

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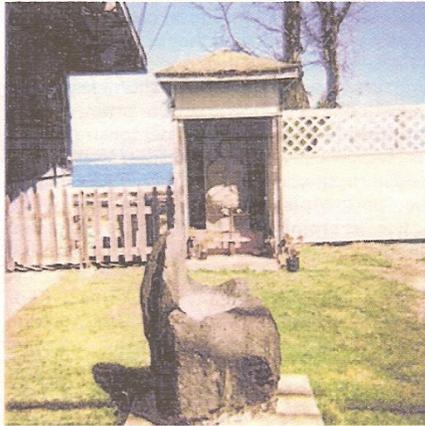
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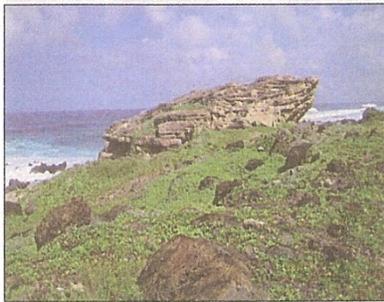


From 1913 through 2003, the community and fishermen of various ethnicities visited Akua House and left offerings until the property owner had this significant cultural and historical site removed and relocated to make a parking area to accommodate his boat and vehicle.



The old pictures are from an article in *The Honolulu Star Bulletin* dated February 28, 1931, on microfilm at Pearl City Public Library. I found them while doing research years ago. I took the color photo in about 2002. Only memories remain.

Thomas T. Shirai Jr.
Waialua, O'ahu

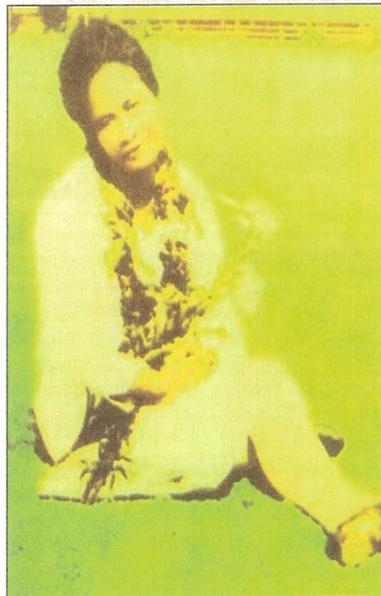
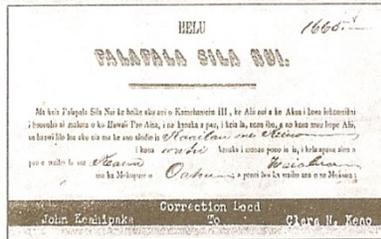


Aloha Chuck,

In the December 2006 issue, Hawaii Fishing News featured an article I wrote about *Ka'ena Point* and my family's legacy. Included are pictures from my photo album taken in 1968 when my Grandparents (*David & Abigail Keao*) and I were also accompanied by my Father (*Thomas Shirai*) on this *holoholo* to *Ka'ena*. The primary seafood subsistence area that my Grandparents would go to was located on *Ohana Aina* situated at the tip of *Ka'ena*. That parcel dates back to *The Mahele* (*Grant 1665*) when my Grandpa's *Kupuna* owned a portion of it and continued until *World War II* when the *US Military* condemned parcels such as this one to established their installations and training areas. After *WWII* ended *aina* (*land*) such as this was to revert back to owners however, many never did.

Regardless of this, my Grandparents continued to frequent there for subsistence purposes after my birth. These photos were taken in 1968 and a few years later, we stopped going to *Ka'ena* due to increased recreational and subsistence usage and along with the lack of stewardship such as conservation that defeating the concept of *Malama Aina*. Among the subsistence affected is gathering and making *paakai* (*sea salt*). In recent years entities such as the *Mokule'ia Community Association* have been a tremendous part of clearing *Opala* from this *Wahi Pana*.

Today this parcel is now known as the *Ka'ena Natural Area Reserve (NAR)* where *Wildlife (Flora and Fauna)* are protected. Gone are those memoirs of abundant seafood subsistence and vehicular transiting to *Keawaula* and the *Waianae Coastline* due to erosion of the road years ago which was part of the *O.R. & L* train track. The *Natural Area Reserve* also protects several cultural sites within it which includes *Leina Ka Uhane* and *Fishing Ko'a (shrines)* for the once abundant subsistence. Off Shore of the *NARS*, is an established *Bottom Fish Restricted Fishing Area (BFRA - A)*. The *Ka'ena Natural Area Reserve Predator-Proof Fencing Project* will give this area of *Ka'ena Ahupua'a* the afforded protection it is highly deserving of.



Information including a video about this project can be found on the *Department of Land & Natural Resources (DLNR)* website: <http://www.restorekaena.org/gallery-videos.html>



Thank you for the opportunity to share some of my *Ohana* legacy and *mana'o*.
Malama Ka'ena.
 Thomas T Shirai Jr.
 Mokule'ia, Waialua

Ka'ena's Significance and Legacy

by Thomas T. Shinn Jr.



Two farmer fisherman and master carpenter, David Pook (left) and David Keao, capture a lobster net in his front yard. **Aloha.** I'd like to take the opportunity to share with everyone some of my family's stories that illustrate how significant the Ka'ena chopua is to a seafood existence perspective. I will connect these stories of old with modern articles that were featured in past issues of HAWAII FISHING NEWS.



Kalani Smith, Paul Akiona and Bing Cheok standing onto a kumu kope in 1987 and appeared 280 lbs of fish. In 1994, HFN featured an article about three souls divers who were spear fishing at Ka'ena Point, discovered a pristine kumu kope and caught a lot of this species of fish in 1997. The photo that accompanied this article displayed the fish caught. Judging by the photo, the average size appeared to be about 5 lbs.



Stewart Matsuura, bottom fishing in 280 feet of water outside of Ka'ena Point when he got his 190-lb octopus.

I had the privilege to be raised in Mokuia'i by my grandparents, David and Aligai Keao. Through them, I've learned much about my grandfather's home and their relationship to the northwest coastline of Waialua, which encompasses Kamananui, Mokuia'i, Aukuu, Kawaiwani, Kaula and Ka'ena. The emphasis in this article will be on Ka'ena.

Hawaiian Stories of Ka'ena

The first story is a version of how Maui tried to unite O'ahu with Kauai. Excerpts from this publication are as follows:

In a version told to me by Annie Keahipaka, Maui had many jaspers tagging at the line. One was being drawn up to O'ahu. This caused the line to break and Kauai's to slip back into the ocean, with only the fragment Pihaku O Kauai remaining, which is proof of Maui's mighty effort.

Also from "Archaeology of Oahu," the next story mentions Ka'ena Point as an excellent fishing ground (kopa). "At one time Maui was fishing at Ka'ena and caught a huge red fish (kumu) which he dragged from Pihaku O Kauai to Kuekela He'au and placed it there. The men-ohane found this kumu (goatfish) named Kumunuiakoa and cut it into small pieces. Then when the sea covered the land (Kalaikuanani), pieces of this fish went back to the ocean. Since then the kumu are small."

This part of the story means that the variety of fish never attained the size of Kumunuiakoa, however, small kumu became abundant at Ka'ena.

Also from "Archaeology of Oahu," the third story that I'd like to share is about a supernumerary at Ka'ena - Pi'ikoi-a-Ika-Alala and his father planned on visiting his sister when Pi'ikoi-a-Ika-Alala while still far from land sighted a huge octopus in a hole near where the sea washes ashore. He informed his father, took aim at Kakabe'e with his bow and arrow, hitting it fly through the air and finally piercing Kakabe'e's. They landed at Waialua and then proceeded to beat it to death. Kakabe'e met the same fate as Kumunuiakoa, and thus creating an abundant lot (octopus) kope."

The February 1994 issue of HFN featured a fisherman who had caught a large octopus at Ka'ena. Also, it's fitting that the current state record for largest octopus was caught at Ka'ena.

In the Bishop Museum's 1940 publication entitled "The Hawaiian Planter," my great-grandfather Kaemoku Kalulu shared the name of a freshwater spring called Ka'ena located in the mountains just past Camp Egan where swampland from Ka'ena's crossed the atea a small midoat (headwater) where nutrients supply marine life with food and thus created an abundant seafood subsistence area (kopa). Swampland from Ka'ena made its way to the ocean up to 1998 when it was capped and never flowed again.

Family History

My grandparents and I would periodically go holo-holo to Ka'ena to gather such delicious food as shellfish (opih) and pipipi, seaweed (tumu koku), sea cucumber (koi), sea urchin (uana, haukiuku and hana) and many others. They would make pa'akai (salt) on a parcel of land that his family owned at Ka'ena where this seafood subsistence gathering took place.

Before I came along, my grandfather was a taro farmer and a fisherman who specialized in lobster fishing. He would pacify his canoe with my grandmother and uncle from a place he called McInerney (name store that was at Ala Moana) located on the shoreline at Aukuu, which is adjacent to Kawaiwani, and parallel to his fishing grounds. Ka'ena was one of his grounds. He learned these skills from his grandfather, Kaemoku Kalulu, who was the last kono'ihiki of Kawaiwani. The McInerney family allowed my grandfather to leave his canoe on the parcel that they owned during that time.

After catching the lobster, he would put them in 100-lb bushel bags and load them onto the train at Kawaiwani Station to be delivered to Kalaheala Market to a family that operated a fish stall. Later in the week, he would catch the train and pick up his money in Honolulu.

Although that era is gone, the names of places located within Ka'ena remain. I know these places and memories of our kupuna alive.

I hope this has been informative. I am grateful to share some of my family's legacy that included Ka'ena.

Maihana'ona.
... Thomas

DLNR Holds Public Meeting To Discuss Evening Closure of Keawe's Section of Ka'ena Point State Park

"We want to address long-standing problems with illegal evening activities at the park, damage to natural resources and potential for injury to the public at a very isolated and remote area."

-DLNR Chairperson Peter Young

"We strongly disagree with denying fishers and families access to shorelines. This is an enforcement problem, not an access problem."

-Chuck Johnston

"I understand that the people at state parties are trying to find a way for the fishers to continue using the shoreline during the evening hours, yet cut down on crime."

-Clifford Inn

U.S. Department of the Interior – Office of Native Hawaiian Relations
Native Hawaiian Organization (NHO) Notification List

Kawaihapai Ohana

Established:
2001

Summary: Protection and preservation of na iwi kupuna, cultural & historical sites with their applicable mo'olelo (stories) of Waialua with a primary emphasis of the northwest coastline of Waialua that encompasses the ahupua'a of Kamananui, Mokuleia, Aukuu, Kikahi, Kawaihapai, Kealia & Kaena. The ultimate emphasis is ahupua'a of Kawaihapai.

**Originally
Registered:**
12/19/2007

Last Renewed:
11/6/2012

Island: O'ahu	Moku: Waialua	Ahupua'a: Northwest Coastline of Waialua
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Contact: Mr. Thomas T. Shirai Jr.
Po'o
P.O. Box 601
Waialua, HI 96791
(808) 637-4690

E-mail:
kawaihapai@hawaii.rr.com
Website:
None Listed

To Department of the Interior
Bureau of Ocean Energy Management (BOEM)

Regarding Docket ID:BOEM-2016-0049

Date September 6, 2016

From Timothy Layser
[REDACTED]

Mahelani Sylva
[REDACTED]

Aloha

We are encouraged that you are considering exploring energy sources that would move Hawaii away from its dependence on fossil fuels to cleaner sources. Although we do have significant concerns over some of the proposal locations that you are exploring especially Ka'ena point. We would also like to encourage you to consider as an alternative a more active and aggressive program involving the use of solar.

Summary of Concerns:

1. Many Ohana in Hawaiian nui and elsewhere have strong ancestral ties to the aina associated with Ka'ena Point and are concerned that the construction and operation of a wind farm offshore will further degrade the spiritual and cultural integrity of location.
2. We have concerns about the impacts that the proposed wind farm offshore of Ka'ena Point will have on the Hawaiian hoary bat potential movements between the islands of Ohau and Kaua'i.

3. We have concerns about the impacts that the proposed wind farm offshore of Ka'ena Point will have on the population of Hawaiian Monk Seals, specifically inter-island movements within the MHI specifically between Oahu and Kaua'i.
4. We have concerns about the impacts that the proposed wind farm offshore of Ka'ena Point will have on the population of Laysan Albatross, specifically inter-island movements within the MHI specifically between Oahu and Kaua'i.
5. We have concerns of the impacts of the proposed wind farm on many species of sharks (Mano) found within the Hawaiian Islands. Especially important is the effect on movements, habitat utilization and effectiveness.

Cultural Significance

Ka'ena Point is steeped in Hawaiian history and legend and is an areas rich in cultural significance. Early Hawaiians believed as many do to this day, that Ka'ena point is a sacred place where souls departing the mortal world would leap into the spirit world to join the souls of their ancestors.

The mythology surrounding Ka'ena Points the story where Chief Ka'ena along with many of his men lost their lives at this point when while fishing were hit by a huge boulder that was hurled by Haupu from the island of Kaua'i. Haupu heaved the boulder towards Oahu after having a dream that warriors from Oahu were paddling from Oahu to wage war on Kaua'i.

Ka'ena point was once an important community for fishing, feather collecting and salt making. Many Hawaiians to this day can tract their ancestry back to Ka'ena Point.

The installation of the predator proof fence, military bunkers and radar and communications antennae within and adjacent to Ka'ena Point have all served to cumulatively distract and dispossess from the cultural integrity of this significant site. The addition of the proposed wind farm off shore will further add to this.

The environmental analysis must take into consideration , fully he negative impacts to the cultural significant of the proposed locations, specifically the location of Ka'ena Point. Especially important is the effect on cultural and spiritual integrity of this site

especially in light of the history of development and modernization within other locations on the islands. Many of which have or will result in the loss and the denial of many Hawaiians the opportunity to practice and past down to future generations their unobstructed heritage.

**‘Ope’ape’a Hawaiian hoary bat, *Lasiurus cinereus semotus*
(Chiroptera: Vespertilionidae)**

Other than marine mammals, the Hawaiian hoary bat, is the only extant native mammal in the Hawaiian Islands. The Hawaiian hoary bat, known as the Ope’ape’a occurs on all of the major islands in the Hawaiian Archipelago including Kauai’i, O’ahu, Maui, Moloka’i and Hawai’i (Tomich 1986)

The Hawaiian hoary bat is listed as an endangered subspecies based on apparent population declines and a limited knowledge of its distribution, abundance and habitat requirements (U.S. Fish and Wildlife Service, 1998)

It has been recently documented that the operation of the Kaheawa Wind Power turbines on the island of Maui has resulted in a more significant loss of Hawaiian hoary bats than originally anticipated. This unanticipated losses for this endanger population are unfortunate and will likely impede recovery of this species.

The operation of a wind turbine array off shore of Ka’ena Point lies directly in the path of the potential connectivity for this species between the islands of Kauai’i and O’ahu, thus potentially further jeopardizing the population of Hawaiian hoary bats. Additionally this proposed wind turbine array may jeopardize further colonization of O’ahu by bats from neighboring Kauai’i.

The environmental analysis should disclose the direct, indirect and cumulative impacts of the proposed location of wind farms on this species. Direct effect include mortality risk from turbine strikes, indirect effects include effects of movements between islands and effects to population production. Cumulative effects should include the effects on the ability of the MHI to provide a habitat given the known levels of mortality associated with wind turbines on other locations within the MHI. The environmental must also disclose the effect of the proposed activities on ‘the potential to take’ (i.e kill, harass, harm etc)and how this may impede eventual recovery of this species in the Hawaiian islands.

Mōlī or Laysan Albatross *Phoebastria immutabilis*

The Laysan Albatross is federally listed as a species of concern by the U.S. Fish and Wildlife Service. The Laysan Albatross (*Phoebastria immutabilis*) began re-colonizing sites across the Pacific in the 1970s after severe population declines, and fledged the first chick on the island of Oahu in 1992 (Young et al 2009).

Terrestrial: Mōlī (Laysan albatross) may prefer to breed on low coral and sand islands, but also breed on high volcanic islands. On the former sites they breed on flat open areas; on the latter, including such islands as Nihoa and Lehua, nest on steep rocky areas. A majority of the world's mōlī (Laysan albatross) breed within the Hawaiian Islands National Wildlife Refuge and on Midway Atoll National Wildlife Refuge. Two of the largest breeding colonies on the MHI occur in the **Kīlauea Point National Wildlife Refuge** on Kaua'i and the **Ka'ena Point Natural Area Reserve** on O'ahu.

Laysan Albatross populations across the Pacific severely declined during the early twentieth century as a result of human consumption, feather collecting, egg collecting, predation of introduced mammals, and military activities (Whittow 1993, Tickell 2000, Rauzon 2001).

Ka'ena Point was added to the state of Hawai'i Natural Area Reserve system in 1983 with one of the emphasis being its importance for the Laysan Albatross conservation. The proposed wind farm located off-shore of Ka'ena Point and in-between the island of Oahu and Kauai'i of the MHI would disrupt inter island movements of the species and potentially result in an increase in the risk of mortality.

Laysan Albatross adults occasionally change breeding colonies between seasons and even visit other islands while actively breeding on Oahu. Studies have shown the up to 10 percent of the adults observed each day on Oahu were visiting from the neighboring island of Kauai. While small, these colonies are at higher elevations than the NWHI and may serve as refugia in the event of sea level rise and, thus, should continue to be conservation priorities.

The environmental analysis should disclose the direct, indirect and cumulative impacts of the proposed location of wind farms on this species. Direct effects include mortality risk from turbine strikes, indirect effects include effects of movements between islands and effects to population production. Cumulative effects should include the effects on the ability of the MHI to provide a refugia in the future given the changes in habitat availability due to the impacts sea level rise resulting to climate changes. The cumulative effect analysis must take into consideration the effect of increased mortality resulting from turbine strikes will have on the movement of this species between Oahu

and Kauai and its ultimate impact of the ability of the MHI to provide the necessary refugia.

Hawaiian Monk Seal (*Neomonachus schauinslandi*)

Some families on Hawai'i and O'ahu islands that consider the species to be 'aumakua, (Pūkui and Elbert, 1986). Hawaiian Monk Seal was federally listed as an endangered species in 1976. In 2008, Lt. Governor Aiona signed into law legislation that establishes the Hawaiian monk seal as the official state mammal. Hawaiian monk seal is one of the rarest marine mammals in the world. Part of the "true seal" family (Phocidae), they are one of only two remaining monk seal species. The other is the Mediterranean monk seal. A third monk seal species--the Caribbean monk seal--is extinct.

A small and growing number of monk seals reside in the main Hawaiian Islands (MHI). Over 100 individual seals have been sighted here in recent years. However, despite the increase of animals in the MHI, the total population across their entire range, including the Northwestern Hawaiian Islands (NWHI), is in decline. The NWHI population is currently declining at a rate of 4.5% per year • Around 1,100 monk seals remain

There is little known about the historical significance of monk seals in Native Hawaiian culture and how Polynesian societies interacted with monk seals during the period prior to western contact (~AD 1250-1778). It is possible that the monk seal was distributed throughout the Hawaiian archipelago prior to the arrival of Polynesian voyagers, particularly given the available habitat in the MHI. One existing theory is that human hunters eradicated monk seals early and rapidly after human arrival in the MHI, sequestering the remaining portion of the population in the NWHI in Hawaiian prehistory. Monk seals were likely considered high value prey as they would have provided a significant return on investment in terms of the meat gained per hunting effort.

The environmental analysis should disclose the direct, indirect and cumulative impacts of the proposed location of wind farms and associated underseas cables on this species. Direct effect include mortality risk and disturbance during construction and operation, indirect effects include effects of movements between islands and effects to population distribution. Cumulative effects should include the effects on the ability of the MHI to continue to provide suitable habitat in the future given the changes in habitat availability due to the impacts sea level rise resulting to climate changes.

Other Species

Of concern is also the impact of the proposed wind and the associated acoustic disturbance and impacts of generated electromagnetic fields on marine species. The acoustic disturbances caused by the operation of the windmills are within the hearing range of fish and mammals, but underwater sound levels are unlikely to reach dangerous levels or mask acoustic communication of marine mammals (Bergström et al. 2014), (Bailey et al. 2014). Transmission cables transporting the generated electricity produce electromagnetic fields, which can affect cartilaginous fish, like sharks, which use electromagnetic signals in detecting prey (Bergström et al. 2014). The electromagnetic fields could also disturb fish migration patterns by interfering with their capacity to orientate themselves in relation to Earth's magnetic field (Bergström et al. 2014).

Some early Hawaiians worshiped, cared for and protected sharks as 'aumakua, or family gods, while many others viewed sharks an important source of food and tools.

IN closing, we are eager to review and provide comment on the draft of your environmental impact statement once it is completed.

Mahalo nui

Tim Layser

Timothy Layser

Mahelani Sylva

Mahelani Sylva

Literature Cited:

Bergström, L., Kautsky, L., Malm, T., Rosenburg, R., Walberg, M., Capetilli, N. Å., and Wilelmsson, D. 2014 Effects of Offshore Wind Farms on Marine Wildlife – A Generalized Impact Assessment. *Environmental Research Letters*, 9. doi:10.1088/1748-9326/9/3/034012

Lindsay et al. 2009. Demography and natural history of Laysan Albatross on Oahu, Hawaii. *The Wilson Journal of Ornithology* 121(4): pages 722-729.

Kittinger JN, Bambico TM, Watson TK, and Glazier EW (2011). Historical and contemporary significance of the endangered Hawaiian monk seal in Native Hawaiian culture. A report prepared for the NOAA Pacific Islands Regional Office. Impact Assessment, Inc., Honolulu.

Pukui, M.K. Elbert, S.H. 1986 *Hawaiian dictionary: Hawaiian-English and English -Hawaiian*, University of Hawai'i Press, Honolulu

Rauzon, M. J. 2001. *Isles of refuge*. University of Hawaii Press. Honolulu, USA.

Tickell, W.L.N. 2000 *Albatrosses*. Yale University Press, Cambridge, Massachusetts. U.S.A.

Tomich, P.Q. 1986 *Mammals in Hawai'i*. Bishop Museum Special Publication 76. Bishop Museum Press, Honolulu, Hawai'i.

U.S. Fish and Wildlife Service. 1998 *Recovery plan for the Hawaiian Hoary Bat*. U.S. Fish and Wildlife Service, Portland, Oregon

Whittow, G.C. 1993. Laysan Albatross (*Phoebastria immutabilis*). *The birds of North America*. Number 66.

Young et al. 2009. Demography and natural history of Laysan Albatross on Oahu, Hawaii. *The Wilson Journal of Ornithology* 121(4):722-729.

RECEIVED

AUG 16 2016

BUREAU OF OCEAN ENERGY MANAGEMENT

BOEM-2016-0049

8 August 2016

To Whom It May Concern,

I am submitting information about natural resources, specifically seabirds, known to exist in and near the "Oahu North" and "Oahu South" areas proposed for development of wind energy projects.

Oahu and its offshore islets support large nesting colonies of several seabird species. These seabird species make regular, sometimes daily, commutes between their nesting colonies and offshore areas where they forage for food. There is a high probability that these birds would be impacted by construction of wind turbines in these areas, through collisions and disruption of wind and ocean currents they use for locomotion and finding prey. All of the species discussed below are protected by Federal and State laws, including the Migratory Bird Treaty Act and the Hawaii Revised Statutes.

Kaena Point Natural Area Reserve, at the northwestern tip of Oahu and directly southeast of the Oahu North area, supports an important colony of Laysan Albatrosses (*Phoebastria immutabilis*) and one of the largest colonies of Wedge-tailed Shearwaters (*Puffinus pacificus*) in the main Hawaiian Islands. The Laysan Albatrosses regularly pass through the Oahu North area during their foraging trips to waters north of Hawaii. Scientific data collected by placing small GPS devices on the backs of Wedge-tailed Shearwaters have shown that the Oahu North area comprises part of the area used most frequently for foraging by shearwaters that nest at Kaena Point and other locations on Oahu. They not only transit the area, but actively forage in the area. This tracking data was collected in collaboration with the U.S. Geological Survey under a grant from BOEM, and will be made available separately by USGS. The Oahu North unit is located very close to the albatross and shearwater nesting colonies and has high potential to seriously affect these species.

The southern coastline of Oahu supports the only nesting area in the main Hawaiian Islands for the White Tern (*Gygis alba*). In addition to being protected by the Migratory Bird Treaty Act, this population of White Terns is listed as endangered by the State of Hawaii. The terns make daily foraging trips from their nesting areas in Honolulu and return to land each night. Because they are limited to the distance they can cover in a day, the waters immediately south of Oahu are their primary foraging grounds. Furthermore, White Terns tend to fly higher off the water than many other seabirds, and thus have a higher chance of colliding with wind turbines. There also is an important nesting colony of Red-tailed Tropicbirds (*Phaethon rubricauda*) on the southern coast of Oahu near Hanauma Bay. Tracking data collected in collaboration with the USGS have shown that these tropicbirds forage primarily south of Oahu, including the area encompassed by the Oahu South unit. Tropicbirds also tend to fly higher off the water, and thus also have a higher chance of colliding with wind turbines.

Finally, the submerged land form called Penguin Bank, which is an extension of the island of Molokai, is known to be an important foraging area for many species of seabirds, including

species that nest on other Hawaiian Islands. Seabird species I personally have seen foraging at Penguin Bank include the endangered Hawaiian Petrel (*Pterodroma sandwichensis*), the threatened Newell's Shearwater (*Puffinus auricularis newelli*), the Black-footed Albatross, and Great Frigatebird (*Fregata minor*), as well as several species of migratory petrels and shearwaters. Because Penguin Bank lies in the center of the Oahu South wind energy unit, turbines located in this area have the potential to affect many species of seabirds.

Sincerely,



Dr. Eric VanderWerf

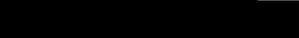
Submitter Information

Name: Alice Abellanida

Address:



Email:



Organization: NA

General Comment

I am vehemently opposed to these wind turbines. They are destroying Hawaii's beautiful scenic coastlines by their absolute hideousness, not to mention the fact that they are killing birds too. I am horrified that it's even being considered. Please put a stop to this legislation.

Submitter Information

Name: Allen Frenzel

Address:



Email:

Phone:

Organization: NA

General Comment

I'm in strong disagreement with this proposal.

What can I say to persuade decision makers not to approve this action? Is there anything I can say that would be listened to? I doubt it. Would comments on the impact on killing seabirds mean anything? The visual blight and insensitivity? The environmental impact of rusted hulks? The adverse impact on navigation (air and sea)? The environmental impact of installation, dismantling, and wire installation underwater and overland? The low return on investment? The likelihood of hurricane damage? These are just a few things that came off the top of my head; I suspect the contractors will offer ineffective mitigation options or underestimate the projects impact on such issues. I suspect I'm wasting my time with this input.

Cynthia K.L. Rezentes

September 7, 2016

BOEM, Pacific OCS Region
760 Paseo Camarillo, Suite 102
Camarillo, CA 93010

RE: Scoping Comments, Environmental Assessment for Commercial Wind Leasing and Site Assessment Activities on the Outer Continental Shelf (OCS) Offshore the Island of O`ahu, Hawai`i

Aloha,

As someone who is in support of our State's commitment to become 100% dependent on renewable energy resources for electricity by 2045, I am concerned with the intent to allow leases for wind turbines in our ocean waters off of O`ahu. While concerned about wind turbines located in our near ocean waters I will speak primarily to those being proposed at Ka`ena Point, O`ahu.

Ocean resources for the Wai`anae Coast and North Shore are very valuable and utilized on a regular basis for sustenance and recreation along with having a valuable status of hosting some of our most remote areas on the island still capable of supporting natural resources long since eliminated elsewhere on the island.

Given that, I am very concerned about the location proposed for a utility scale wind turbine facility in the Call Area proposed off of Ka`ena Point and submit the following observations and questions for consideration to be included for addressing in the proposed EA to study whether leases should be awarded for any lands in the area identified.

Is this proposed project within this Call Area the best renewable energy solution for the State and O`ahu if it impacts those natural resources that have so far withstood the demands of urbanizing most of O`ahu? Have other alternatives been considered to increase utilization of various types of renewable energy without impacting significant resources in the Ka`ena Point area? These other resources could include additional solar energy capture, perhaps thinking out of the box and considering geothermal to produce hydrogen gas to promote development of technologies to reduce the dependency on fossil fuel, etc.?

The water area off of Ka`ena Point, O`ahu is very unique in that it is an area where currents moving Northwest along the Southern Coast of O`ahu meets with the currents moving Southwest along the Northern Coast of O`ahu. This provides a challenging intersection of currents along with the impacts of our normal wind direction (ENE which over time is becoming more easterly). The trough that results where the currents meet off of the area near Ka`ena Point is visible to the practiced eye and presents challenges to recreational and commercial fishermen who frequent this area. One must know what one is doing to be able to safely traverse the area in going "around the point".

This area of the coastline is also known historically for the effects of severe winter storm surges where 30-40' wave heights have been documented as coming ashore at Ka`ena Point (See "Sites of Oahu" by Sterling and Summers). Many years ago, when the road did allow one to drive around Ka`ena Point, it was not uncommon to experience wave spray and surf washing up upon the raised road on the Wai`anae side of Ka`ena Point demonstrating the ferocity of the waves during the winter months and the strength of nature in moving water with tremendous energy onto the land. While this proposed project is further offshore where there might not be cresting waves, the surges would still be of concern for the engineers proposing to maintain a stable floating

platform for the wind turbines currently being discussed (600' in height). In addition to the normal storm surges experienced, how stable will these platforms be when faced with hurricane force winds. Two significant hurricanes, `Iniki and Iwa, struck the island of Kaua`i and caused significant damage (multi-millions of dollars). The winds of Hurricane `Iniki were reputed to be greater than 145 mph as it passed on Kaua`i. Will this design be able survive this force of wind, especially if the ocean currents are not travelling in the same direction in the Ka`ie`iewaho Channel (between O`ahu and Kaua`i)?

The floating platforms themselves with the anchor system currently published within one unsolicited proposal, raises numerous questions:

1. Will the anchor system be solid enough to endure the stress and strain on the system given the known potential "normal" conditions of winter surf?
2. Will the anchor system be strong enough to withstand hurricane force winds compounding the tremendous currents that may be encountered without allowing drift or toppling of a wind turbine platform?
3. How will the anchor system cables impact the marine mammals which traverse this area, i.e. dolphins, monk seals, various whale species? Will it act like a barrier during their migrations? It has been stated at a public meeting that not only do humpback whales frequent this channel but also other lesser known whale species currently under study.
4. Will the anchor system cables impact the other fish that frequent the area by impacting their migration efforts along the coastline (many of our fish do migrate along the coastline from breeding locations to other locations)?

The floating platforms also give rise to other questions:

1. What if any impacts will there be to the U.S. Air Force Radar Tracking Station at the top of Ka`ena Point on the Wai`anae Mountain Range? This facility provides information across the Pacific and is not site/point specific.
2. Due to the proposed height of the wind turbines, will signal lights be required not just for air traffic but also ocean traffic and how will that affect our seabirds as they fledge and head out to sea (artificial lights are known to draw birds to locations where placed and can cause situations leading to death due to fatigue or crashing into obstacles)?

In speaking of seabirds, Ka`ena Point is home to a healthy Laysan albatross and Wedge-tailed shearwater colony. If you look towards Kilauea Point on Kaua`i, the colony located there and the one located at Ka`ena Point are in a fairly straight line of transit. While some birds might not transit between the two sites, the other concern is the location of the wind turbines with respect as to the direction the seabirds traverse to be able to forage and especially as they are nursing their young prior to fledging. The wind turbines will act as Fish Aggregating Devices (FADs) and the seabirds will naturally head to the areas where the wind turbines are planned to take advantage of this phenomenon. With these colonies in close proximity to the wind turbines and probably accessing the most direct and closest location of almost always guaranteed fish, it is most likely a given that there will be a significant "take" of seabirds. Unfortunately measurement of the "take" numbers will be difficult to identify and verify. In addition to these two species that are not currently on the endangered list, there have been sightings within the past few years of other more threatened and endangered species of seabirds in the area. It has been stated that these sightings may be the initial foray into looking at new locations to nest. At that point, the location of the wind turbines may become an even more critical factor to the continued recovery of Hawaiian seabirds in the Main Hawaiian Islands.

The communities of Wai`anae and the North Shore (Haleiwa, Waialua, etc.) are of strong fishing families both on the shore and at sea. The wind turbines could provide a potentially challenging problem for our fishermen. A portion of the location of the proposed Call Area lies along a "trench" or ridgeline which is a favorite line-up for fishermen to troll as this "trench" allows nutrient rich waters to upwell and provide nutrients for various fish

found in the area. Pelagic as well as those which reside closer to shore are commonly found off the shore in waters as close as the proposed wind turbines to much further off shore. What impacts will the wind turbines have on the fishing stock in the area and as they migrate? Will the presence of numerous cables provide deterrents for schools of fish? Will the wind turbines provide impediments to fish migration from one side of the point to the other? Will the sound propagated by the wind turbines effect fish (and also marine mammals)?

Over and above the impacts to our recreational fishermen, what will be the economic impacts to our commercial fishermen? One method of fishing is to use a surround net to gather the fish for market. With the placement of the cables to stabilize the platforms how much area will be removed from commercial use? How much reduction in annual income can be expected in the fishing sector of our economy?

In addition to our recreational fishermen, we also have a very diverse community who uses the ocean as a recreational resource for paddling, surfing, etc. How will the location of the proposed wind turbines affect events such as paddling or sailing events from O`ahu to Kaua`i (most of these events are initiated on the North Shore with much fewer from the West and South Shores?) How will the location of the wind turbines effect our shore breaks or waves as they come ashore? (Changes to our shores have affected previous surf breaks that come into Waikiki and could have the same effect here.)

Hawai`i has provided FADs along many of our coastlines as a "collector" for various fish species. It is anticipated that the wind turbines will probably have the same effect off of Ka`ena Point BUT the question becomes one of whether or not the fishermen will be allowed in the area to fish around individual wind turbines? Will the anchoring cables provide a net from which fishermen doing recreational trolling will end up catching their lines on the cables (if fishermen are even allowed to fish around the wind turbines). There is also the question of whether, from a Department of Homeland Security standpoint, since this is a utility scale (size in Megawatts) energy production facility, whether the entire area would be closed off to preclude any type of terrorism threat, etc? Also, considering there will need to be either an high-voltage AC or DC cable to bring the electricity to the shore and connect to an existing power grid on the island of O`ahu, what restrictions will that place on what kind of fishing and where?

In the past, much has been made of electromagnetic effects upon sea-life, especially fish, mammals and sharks. Considering a power line would need to traverse the near shore waters, what would the effects be on our fish migration along the shorelines? Are there **any** studies on the fish (including sharks) in our waters and the effects that could occur or are there just studies on other fish in other areas of the world? What about the effects on our marine mammals that migrate long distances, i.e. humpback whales, etc.? We need to understand the impacts on our natural resources from these un-natural conditions that we are perpetrating on the ocean and near shore waters.

Our Hawaiian culture looks at Ka`ena Point as a significant cultural and spiritual location. The out-cropping called, *Leina-a -ka-uhane*, is said to be that western-most point of the island where the souls, once they leave the body, travel to and then transit to the other side. In fact, the significant importance of the area, led the designers and builders to install a third gate into the predator proof fence near the out-cropping. This was done to acknowledge the importance of the location and the significance of the cultural connection to the area by many families on both sides of the Point. The area of Ka`ena Point also has tremendous significance in local myths of the demi-god Maui. It is from Ka`ena Point that he was reputed to have pulled up the islands of Hawai`i from the ocean. It is not just some land jutting out into the ocean to our local practitioners of Hawaiian culture and spirituality and should not be treated as such.

At this time, turning towards the proposed Call Area along the South shore of O`ahu I have just a couple of comments and concerns.

With respect to a wind turbine farm proposed off of Waikiki, even at the distance being proposed, has anyone done a study to see what the effects of all this hardware in the ocean will have on the shore breaks that our surfers have come to rely upon as they challenge themselves in the sport of surfing, practiced in Waikiki for hundreds of years? As information to mull, the changing of our shorelines with structures has changed the breaks as evidenced by referral to the longest ride done by Duke Kahanamoku in 1917 (between 1-1.5 miles) starting at a break called Castle's (off of Diamond Head) to Honolulu Harbor. While these wind turbines would not be the demise of this type of surf (changed configurations of the shoreline as to how it is today precludes a repeat of a wave like that), how would it change the surf breaks as are known today?

Also, with regards to the proposed wind turbine farm off of Barber's Point, has an analysis been done on submarine training grounds and the impact a wind turbine farm with its myriad of cable would have on compromising the grounds now being used for training? This can best be addressed by the U.S. Navy and they should be consulted as to what the impacts would be on military readiness.

The National Environmental Policy Act (NEPA) analysis for these areas must consider alternatives, especially given what the economic, social and cultural impacts would be. Alternatives, such as all variations of solar generation and geothermal (there has been identified a volcano, albeit not active) located off of Ka'ena Point should be considered and weighed against the larger impacts to the people who live in the area and utilize the oceans for both recreation and sustenance. When weighed against all parameters and impacts, wind turbines will be the least desirable alternative and should be removed from consideration.

I would further recommend that if this process goes beyond "interest" and to actual bidding for specific sections within the identified call areas, that public meetings be held to receive comments from the public as to the impacts to their sustenance, recreation, and spiritual well-being if these areas are compromised to full and free use. While I acknowledge that continuing investigation to determine the impacts of these projects may provide valuable information from the scientific data generated by the various studies that would be required to address those issues I raise, it would not be at an insignificant cost, costs that should not be borne by the public as it is not the public that is requesting the approval to proceed with further investigation towards establishing feasibility of these wind turbine farms in areas utilized by our friends and neighbors on a regular basis.

Mahalo for your consideration and, hopefully, favorable decision to allow the continuing traditional uses that have been enjoyed for generations by our communities.

Cynthia K.L. Rezendes
Wai`anae District Resident and Concerned Citizen

Submitter Information

Name: Carl Jellings

Address:

Email:

Phone:

Fax: none

Organization: NA

General Comment

To Whom it may concern

Comments In Regards Waianae Coast Boem EA

A Study (Project Description) (Tagging yellow fin Tuna off of the Waianae Coast) done by the National Oceanic Atmospheric Administration fisheries Service back in the early 1980's showed clear patterns of Yellow fin tuna seasonal migratory movements BOEM can use this study as a baseline for any potential migratory change.

The Study showed Yellowfin Tuna during Fall and Winter months traversing from Kaena Point's 30 and 40 fathom Southern ledge's to both Romeo and Sierra Fad's located just 4 miles off shore then from Waianae's R and S Fad's traversing into Waianae's Maile Point's 30 and 40 fathom ledge's then Back to Sierra and Romeo then back to Kaena.

Waianae Small Boat Harbor was not named in random! most the entire fleet was made up of boats with a total length of less then 20 feet with many of them being even less then 18 feet.

I remember the early sixties during my early fishing experiences trolling with my Dad who was mate on the old 24 foot Cabin Cruiser Pelekunu. at the time The Good Ship Pelekunu was owned and operated by Captain " Uncle Louie" Louis Vincent from Makaha and moored in Pokai Bay.

The few trips I made with them never extended beyond 8 hours and never beyond 80 fathom's I remember strike after strike hooking up to Mahi ono Kawakawa and medium sized Yellow fin. Back then there were no artificial Fad's anywhere just Our Waianae near shore ledges that Our small boat fishers trolled to catch deep sea "pelagic" fish .

BOEM's Proposed EA places a single massive fish aggregating device a Floating study platform or barge in the vicinity of where CO Buoy is today. The BOEM EA needs to include such similar tagging project's of Yellow fin and Skipjack tuna to help identify potential migratory changes post placement of study barge for Yellow fin and skip jack as well as other pelagic species, in my opinion by the metric's "will" have a more offshore aggregating tendency favoring these sites

for feeding and spawning which will put these fish resources out of reach for our small boat fisher's.

FAD CO Buoy is located approximately 15.7 miles
21-33.7' N
158-26.8' W

West of Pokai Bay and 10 miles South West of Kaena Point historically a very treacherous region of ocean where swift North West Bound current's collide with strong North Easterly Trade Winds. These condition's often limit Our Waianae small boat fishing fleet to venturing into these fishing grounds and as it is approximately the proposed site for BOEM's proposed wind farm and EA study area.

My opinion is just my humble opinion but with fish finder placement recordings and seasonal tagging efforts during the EA. studying aggregated biomass and potential migratory changes in species specific fish movement BOEM can identify potential for both economic loss and lost opportunity regarding Our Waianae Small Boat Fishery.

In my Professional opinion 51 massive turbines or inadvertently placed FAD's placed West South West of Kaena will intercept and hold pelagic fish species in the metric's, holding them in treacherous oceans off shore keeping them from their normal migratory spawning trek into Waianae's Lee Ocean's.

In closing My Ohana supports the EA but opposes any placement of turbines off Kaena Waikiki or Penguin Bank.

sincerely

Carl Paoo Jellings Sr

Capt CFV Henry J II

Submitter Information

Name: Carl Jellings

Address:

Email:

Phone:

Fax: none

Organization: NA

General Comment

To Whom it may concern

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sincerely

Carl Paoo Jellings Sr

Capt CFV Henry J II

Submitter Information

Name: Dean Capelouto

Address:

[REDACTED]

Email:

[REDACTED]

Organization: NA

General Comment

Not desired.... please do this somewhere else in the United States.... not appropriate for our island lifestyle...

Aloha,

My name is Cedric Gates, I am a lifetime resident of the Wai'anae Coast and a very active member of my community. I am writing to you today in opposition of the proposed request to lease outer continental shelf space to develop a commercial windfarm off the shores of Ka'ena Point on the island of Oahu, HI.

I attended multiple community meetings in regards to this proposal and personally testified against this project at two BOEM Public Hearings. The vast majority of community members oppose this project due to a number of concerns with this proposal. Concerns that were shared by many residents including myself relate to the impact a windfarm made up of 600 feet wind turbines could have on the migration of birds and sea creatures, access to fishermen and vessels, cultural and religious aspects, and the natural landscape of the Wai'anae Coast.

I am a proud supporter of renewable energy and support Hawaii's initiative to be the first state in the nation to be dependent on 100% renewable energy. I cannot support this project due to the outpour of community opposition, and the potential of unintended consequences that may harm the Wai'anae community and the livelihoods of our residents.

With Aloha,

Cedric Gates



BOEM Wind Oahu Comments September 6, 2016

DEPARTMENT OF THE INTERIOR, Bureau of Ocean Energy Management

[Docket No. BOEM–2016–0049]: Environmental Assessment for Commercial Wind Leasing and Site Assessment Activities on the Outer Continental Shelf (OCS) Offshore the Island of Oahu, Hawaii.

Comments submitted by Donald Michael Fry, PhD, to the Federal eRulemaking Portal:

[http:// www.regulations.gov](http://www.regulations.gov).

My name is Donald Michael Fry, and I am an Oahu resident and former Federal Advisory Committee (FACA) member (12 years) and Chairman of the Minerals Management System and BOEM OCS Scientific Committee (4 years). My expertise on the committee was seabird biology and environmental toxicology.

I do not believe that offshore wind projects near the island of Oahu are environmentally, economically, or technologically feasible. I believe they will not withstand a rigorous NEPA analysis

There are six primary issues that must be considered in the scoping analysis for offshore wind near Oahu. The two areas selected as possible offshore wind farm locations have highly unfavorable characteristics.

The primary environmental issues are risks to threatened and endangered seabirds and endangered marine mammals. The Northwest Oahu site is located immediately west of the largest Oahu seabird colony at Ka'ena Point. This recently rehabilitated and protected area is the nesting area for Laysan Albatross, wedge-tailed shearwaters, and other seabird species. Locating an offshore windfarm in a prime fishing and seabird foraging area would put albatross and other seabirds at high risk of collision with turbines. The turbine platforms will be effective Fish Aggregation Devices (FADS) and serve to attract birds to the wind farm to forage. This will exacerbate the risk for boobies, which forage from the height of the turbine blades, and will be at high risk of collisions.

The tension cables with drag anchors used to stabilize and fix the locations of each turbine and platform base will create a forest of vertical cables presenting a significant entanglement hazard for marine mammals, especially humpback whales and endangered Hawaiian Monk Seals. Hawaiian waters support as many as 10,000 humpback whales each winter during the mating and calving season, during which the whales are often engaged in interactive behavior, making them prone to entanglement. Hawaiian Monk Seals often forage along the deep-water shelf west of Ka'ena Point, making a wind farm in this location especially hazardous for monk seals.

The third issue to be mitigated would be the loss of commercial fishing at the shelf-break area west of Ka'ena Point. This is a favored fishing area for commercial fishermen located in Oahu. Locating a wind farm in this area will force the curtailment of fishing in the area and present a significant economic loss to commercial fishermen, which will have to be mitigated.

The fourth issue facing turbines would be destruction of the turbines by storms. The Ka'ie'ie Waho Channen (Kauai Channel) between Oahu and Kauai Islands is subject to intense storms throughout the winter with ocean swells often in excess of 40 feet. Additionally, tropical cyclones passing the Hawaiian Islands create hazardous winds and swells in this channel, which will be a significant hazard for overturning turbine platforms, just as Gulf of Mexico hurricanes have overturned large oil platforms in recent years. The 100m to 200m turbine blades would not withstand the impact of hitting the ocean surface in a storm, and would result in the total destruction of the turbine and creation of significant marine debris.

The fifth issue presented by an Oahu Offshore Wind Farm would be radar clutter and disruption of both the US Space and Missile Defense system radars located above Ka'ena Point and the air traffic approach control radars for Honolulu International Airport and Hickam Air Force Base. I was made aware of the issue during testimony before the MMS and BOEM Science Advisory Committee that I chaired. I do not have expertise in this area, and will leave specific comments to the Department of Defense and Federal Aviation Authority.

The sixth major issue and hazard posed by offshore wind farms is disruption of marine traffic and potential for oil spills from ships that could lose steerage and collide with turbine platforms while transiting the approach to the busy Honolulu Harbor. The South Oahu wind area would pose a greater risk than the Kauai Channel site, but both pose significant risk for marine traffic collisions. The US Navy will have additional concerns with hundreds of vertical tension cables obstructing submarine traffic into Pearl Harbor. Both proposed wind farm areas would force avoidance of submarine traffic near the main Central Pacific submarine base.

The National Environmental Policy Act (NEPA) analysis for this area must consider alternatives, such as solar, both centralized and distributed (rooftop) generation that can be done at less capital cost and less environmental risk. The completed NEPA analysis will demonstrate that the combination of centralized and distributed solar will provide the preferred alternative for energy generation compared to offshore or terrestrial wind energy. The NEPA analysis will demonstrate that offshore wind will be the least desirable alternative, and therefore excluded from development.

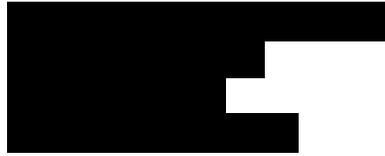
Thank you very much for the opportunity to comment on the proposed offshore wind project areas in Hawaiian waters. BOEM is conducting sophisticated environmental studies to assess risks from offshore wind farms, and I am confident that the BOEM studies will confirm the risks presented in these comments. There will be significant cost for the required environmental studies, but there will also be valuable scientific data generated by the studies, similar to the data generated during the Minerals Management Service Outer Continental Shelf Environmental Studies Program (OCSESP) which proved highly valuable in 1980s and provided the baseline information needed to evaluate the environmental injury caused by the Exxon Valdez oil spill. I trust that the Hawaiian Offshore Studies will provide similarly valuable information and that this exercise will not be a total waste of time.

Thank you for the opportunity to comment,
Sincerely,

Michael Fry, PhD

[REDACTED]
[REDACTED]
[REDACTED]

Glen Kila



My name is Glen Kila and I am a Kanenuiakea worshiper. Kanenuiakea is a Hawaiian indigenous religion recognized by the International Association of Religious Freedom, a non-governmental organization of the United Nation.

I am against the leasing and development of wind turbines at Ka'ena Point. Ka'ena Point is sacred to Hawaiians as the meeting place where departed souls leap into the heavens. At leina-ka-uhane sacred rock, Kanenuiakea worshipers pray to departed loved ones. Having the wind turbines built will desecrate the view plane and sense of serenity of this religious practice.

Ka'ena is also the site of the Pohaku-o-Kaua'i, an ancestor of both Pele, our Volcano Goddess and Ka'ena, our Fire God. The wind turbines will desecrate the home of our Gods. Ka'ena is also the sacred place where our demigod Maui tried to unite the islands of Oahu and Kaua'i.

At Keawa'ula and Nenele'a sand dune, Kanenuiakea worshiper pray to Kanaloa, our Ocean God and deity of the Dead. The movement of these wind turbines will desecrate our religious ceremonies.

For religious reasons, wind turbines should never be built at Ka'ena Point.

Jan Makepa



Aloha, I am writing on behalf of my island home, on the West coast of Oahu. ALL of our moku means more to us than anything money can buy. It is not for sale and not to be compromised. I write in opposition of windmills being placed offshore of Kaena Pt.. A location very sacred to our culture and much more than a bird sanctuary. If you don't already know, please educate yourselves on why this location is sacred. We have, and continue to fight to keep what areas left sacred, sacred. Development has wreaked havoc on our islands and in our world. We cannot sit idly by and continue to allow this to happen. Overcrowding, overdevelopment, overuse, overhunting, overfishing, overbearing and the overages go on and on. Please explain to me what BOEM does? They manage energy thru ocean activity? Does it take into consideration the effects on the land it is adjoined to? Or the damage on the oceans and reefs when drilled? Does it take into consideration the cultural effects it has on its people? Or does it even care? Does it feel that these windmills will benefit the whole, with little thought to the few that oppose it? And now with the expansion of Papahnaumokukea does this not infringe on the protection of our coastal waters? I, WE THE PEOPLE OF HAWAII, OPPOSE THE BUILDING OF WINDMILLS OFFSHORE OF KAENA POINT. As a government entity that regulates, please make good on your kuleana and not allow encroachment in, around or near our sacred sites. When is enough is enough?! He huh kkou! Hewa Loa kia! Jan "Kana" Makepa Kanaka Maoli no Hawaii Nei

Julie-Ann Cachola
86-062 Ho'aha Street, Wai'anae, Hawai'i 96792

September 6, 2016

Department of the Interior
Bureau of Ocean Energy Management
Joan Barminski, Regional Director
Pacific OCS Region
760 Paseo Camarillo, Suite 102
Camarillo, California 93010

RECEIVED

SEP 13 2016

BUREAU OF OCEAN ENERGY MANAGEMENT

Subject: Docket No. BOEM-2016-0049 Environmental Assessment (EA) for Commercial Wind Leasing and Site Assessment (SA) Activities on the Outer Continental Shelf (OCS) Offshore the Island of O'ahu, Hawai'i

Mahalo for the public informational meetings and for the extended deadline to provide public comments. I am born and raised in Wai'anae, O'ahu and am proud to say that I am an elected member of the Wai'anae Coast Neighborhood Board. Communities along the Coast deserve special consideration in the EA and SA since they will be disproportionately impacted by development of the O'ahu North OCS sub-area and related land-based activities. I have a Master's Degree in Urban and Regional Planning from the University of Hawai'i and have been employed in Hawai'i as a community/land-use planner in both the public and private sector for the past 30 years.

Living in the most isolated land mass in the world, I support efforts to develop renewable energy alternatives that provide low-cost/affordable energy aimed at securing energy self-sufficiency within my household, my community, and the island of O'ahu, all of which serve to meet State renewable energy goals.

General Concerns

While your request for comments is specific to the EA and SA, it is difficult to focus on the specifics when you don't have a good understanding of the larger context (the realm and powers of BOEM). What are BOEM's goals in Hawai'i? BOEM recently arrived in Hawai'i and immediately asserted authority within the Hawaiian archipelago. Hawai'i is not familiar with the Bureau of Ocean Energy Management, and similarly, BOEM is not familiar with Hawai'i. We do not have an Outer Continental Shelf--we are not aware of any gas, oil or minerals to explore on our ocean floor. The unsolicited proposals do not originate in Hawai'i and by definition, they do not originate from BOEM. So why are we doing this? The EA should clearly identify how BOEM intends to help the State of Hawai'i, the island of O'ahu, residents of the Wai'anae Coast, including specific attention to BOEM's relationship and responsibilities to Native Hawaiians. While I think the State of Hawai'i will benefit from BOEM's involvement and attention, I'm not sure. The purpose, need and rationale/justification for the proposed action should be clarified in the EA, including a detailed explanation of BOEM's roles, responsibilities and authorities. In particular, BOEM's dual role as a regulator and private sector advocate for commercial offshore wind leasing is very confusing. Who (what agency) advocates on behalf of public interest and resident concerns?

SITE ASSESSMENT

The Constitution of the State of Hawai'i identifies the State's boundaries as: all the islands, together with their appurtenant reefs and territorial and archipelagic waters, included in the Territory of Hawaii on the date of enactment of the Admission Act. What is the federal jurisdiction within archipelagic waters? How does BOEM intend to deal with outstanding native Hawaiian claims? How will BOEM honor and promote recent DOI efforts to reestablish a government-to-government relationship between the United States and the Native Hawaiian community? The highest concentration of Native Hawaiians in world, live on the Wai'anae Coast. What efforts will BOEM/DOI make to ensure that the proposed development not only address Native Hawaiian needs and concerns, but actually turn the corner and generate direct benefits and opportunities for Native Hawaiian advancement?

The EA and SA must extend its scope to include the activities and impacts that will occur as energy is transmitted from the wind turbines to land-based electric power stations. The wind project cannot occur without its corresponding land-based activities, so it follows that the EA and SA must also address impacts of related land-based activities. This will require clear delineation of the areas of State jurisdiction and areas of jurisdiction relating to the City and County of Honolulu. How will BOEM respect these jurisdictions while it advocates for private commercial wind leasing and unprecedented leasing of ocean columns for corporate gain?

The introduction of the concept and means to sell/lease ocean space will fundamentally change the future of Hawai'i. The EA/SA must consider the full ramifications of this element of the proposal. Native Hawaiians still remember, and now understand, the far-reaching effect of the "Great Mahele" of 1848, which created the concept and means to sell land as private property. This 'invention' changed the Native Hawaiians' relationship to the land and its resources; it changed culture. It marked the beginning of Native Hawaiian alienation from traditional lands and resources. Ocean leasing will have similar effects. It will change the way Native Hawaiians interact and utilize ocean resources; it will change culture; it will create boundaries and the privatization of a resource that is inherently communal. Please do not take this lightly; it is truly the element that will have the greatest impact on the entire State, not only for the duration of the project, but for all future generations.

The EA/SA should identify and evaluate alternatives to ocean leasing. It might have worked in the US continent and the Outer Continental Shelf, but it is not a good fit for Hawai'i. The negative cumulative impacts of ocean leasing far outweighs the convenience of a conveyance instrument that grants special rights and privileges that allow a private entity to profit from the use of a public resource. BOEM/DOI should be the first to recognize that ocean leasing is an untenable proposal in Hawai'i. You don't want the disposition instrument to be the reason that people reject the renewable energy proposal. The EA/SA must identify alternatives to promote off-shore wind energy without having to create a whole new tenure system--and without fundamentally destroying the psyche and culture of indigenous Native Hawaiians.

I am unclear as to whether or not BOEM has identified Priority offshore Wind Energy Areas as the O'ahu North and O'ahu South subareas. If so, what set of criteria did BOEM use to select those areas? The South O'ahu call area, which includes the area south of Diamond Head (12,099 acres) and the area Southeast of Barber's Point (77,440 acres) would be in clear view of Waikiki resorts, the Central Business District and mixed commercial/industrial-waterfront redevelopment projects in Kaka'ako that all depend on clear ocean views. The South O'ahu call area appears to lie directly in the path of shipping routes and could also affect Department of Defense operations. These proposed areas would destroy landmark views of Diamond Head and O'ahu south shore sunsets; Honolulu City Lights would never be the same. Why is the South subarea still on the table? The reality is that this area should be rejected

outright. It simply cannot be justified. You don't need to spend money to make this determination; anyone with any knowledge of Hawai'i would draw the same conclusion. O'ahu contains 80% of the State's population, the majority of which work in Honolulu or Waikiki. You will have not only Native Hawaiians in opposition, but the resort industry, condo owners and developers, retailers (Ala Moana Shopping Center, Ward Warehouse, Ward Center, etc.), boat operators, fishermen, surfers, even tourists! If BOEM rejects these areas now, it only affects Progression Hawaii Offshore Wind, Inc., which could easily submit a proposal for the Ka'ena area. BOEM could then clearly function as a regulator versus a regulator/private sector advocate. Please do not spend taxpayer dollars on analyzing a site that is not politically viable.

Your request for viable alternatives is not clear because the goals of BOEM intervention is unclear. If the proposed area is narrowed down to Ka'ena Point, then alternative routes to Kahe Power Plant could be considered or alternate scales of production reflecting HECO RFPs could be considered. Alternatives could also be identified around different types of renewable energy (solar, land-based wind, etc.). If alternatives must be contained to ocean-based renewable energy resources, consideration should be given to wave energy, ocean-thermal conversion, and/or a salt-water variation of hydro-electric pump storage.

The key alternative to consider is the scale of the project. BOEM has no experience in actually developing off-shore wind projects. BOEM is getting close to actual construction, but these projects are in ocean depths averaging 150-feet deep. The Danish company does not appear when wind companies in Denmark are queried, however the companies that do appear all have projects that occur in ocean depths ranging from 50' to 80-feet deep. No one has experience working with off-shore wind projects that require anchors and cable spanning depths starting at 900-feet down to 3,280-feet deep. No one has experience working these types of projects in the world's largest ocean. Why would we endeavor in uncharted territory at the scale currently being proposed? Is it possible and desirable to do a pilot project at a much smaller scale first? ! *

Finally, since this type of project is unprecedented, why is the proposed action only considering the preparation of an EA? The scope of the proposed action, in terms of nautical miles, acres of land, and in terms of the level of energy that will be produced, warrant the development of an EIS. The fact that this type of development is the first of its kind also warrant the development of an EIS. I hope that the EA will arrive at the clear conclusion that an EIS is necessary, but residents fear that as an advocate for off-shore commercial wind leasing, BOEM would utilize NEPA to support its agenda through a declaration of a FONSI.

Specific Comments on the Scope of the EA

The scoping of the EA immediately encounters the issue of overlapping jurisdictions. Off-shore commercial wind projects have wind turbines at the energy source, but that energy must then be transported to land-based facilities. The EA should include all undersea and land-based transmission routes in order to connect to existing HECO power plants. The EA should identify corresponding State and City and County permits, processes and approvals necessary for a viable commercial wind project. Consideration should be given to the order in which the commercial wind project should seek approvals.

Ultimately, a commercial wind project would need a Power of Purchase agreement with HECO. But HECO is only looking for 200 MW of energy, not 800 MWs or even 400 MWs. Why should consideration be given to a project that produces much more than is required? The only conclusion

would be that the wind project intends to serve a larger service area. Therefore, those additional transmission lines (ocean and land) and land-based facilities required to utilize the proposed level of energy production should also be included in the EA, which might have to include service to Kaua'i, Molokai, or Maui, if HECO does not release an RFP for additional renewable energy.

The Ka'ena Point area is at the point where north shore currents meet south shore currents. The collision of these forces is a sight to see. I can't imagine what would happen if a structure had to face these forces 24-hours a day. I don't know how this impact can be measured, but the EA needs to address this issue. Hawaiian waves and undercurrents are very strong, especially in the channel between Kaua'i and O'ahu. These are primary site characteristics.

Your cultural section should note that Kamehameha the Great conquered all the islands, except for Kaua'i, due to treacherous currents and conditions in the channel. He tried several times, but was forced to turn back due to the ocean conditions. As a result, Kaua'i wasn't conquered, Kaua'i surrendered. Mo'olelo could highlight other travels between Kaua'i and O'ahu (especially regarding Pele's travels) which might help to illuminate weather and ocean conditions that would be encountered in the Ka'ena area. Since you are proposing a wind project, the cultural section should identify stories related to Paka'a, the Wind God. For cultural impacts related to land-based components, there are a lot of cultural impacts studies and mo'olelo that have already completed. Care should be taken to use proper Hawaiian diacritical markings for all Hawaiian words and place names.

Please note that any transmission along Farrington Highway must be thoroughly analyzed in terms of its impact on traffic, which is already a big problem along the Coast.

Security, public safety and enforcement issues need to be identified and addressed. Fishermen might try to use the wind turbine platforms as fish aggregation devices. What would happen if a boat gets too close? What is too close? If there is a buffer around the turbines, where boats are prohibited, who will monitor and enforce it?

The Ka'ena Point area is located on a relatively shallow ledge that drops off to deep sea. This area of transition is where deep sea fish frequent, which makes it a prime area for local fishermen, many of whom depend on their catch to support their families. The impact of the magnitude of the area under consideration and the amount of platforms and wind turbines that would be developed, anchored with thousands of feet of cable extending to the sea floor, must be considered. What are the impacts of anchoring 4 cables per platform on the sea bed and marine life?

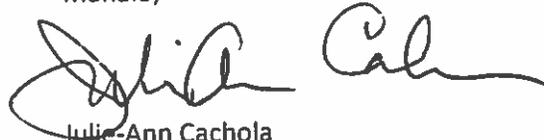
The migration patterns of marine life related to Papahānaumokuākea must also be considered. It's good that BOEM has already contracted studies of seabirds and their large areas of migration, but you should also consider how the 'taking' of seabirds would be documented if they simply fall into the ocean. For that matter, how would the 'taking' of any marine life be documented?

A fiscal impact analysis should be conducted since the premise of an off-shore wind project is not only related to the development of a renewable energy resource, but we presume the development will also create financial benefits for residents on O'ahu through lower electric bills, and additional financial benefits for Wai'anae Coast residents through a community benefits package. But beside these direct financial benefits, what are the fiscal impacts to the State and City and County of Honolulu? Financial gain cannot be solely for the private developer and the federal government. BOEM should consider ways in which lease revenues can be diverted to the State and City and County government. If

not, there needs to be a clear and compelling reason for the revenues going exclusively to the federal government.

Mahalo for the opportunity to comment. Please ensure a public review and comment period on the draft EA.

Mahalo,

A handwritten signature in black ink, appearing to read "Julie-Ann Cachola". The signature is fluid and cursive, with the first name "Julie-Ann" written in a larger, more prominent script than the last name "Cachola".

Julie-Ann Cachola

Wai'anae Coast Resident

Submitter Information

Name: Luwella Leonardi

Address:

[REDACTED]

Email:

[REDACTED]

Phone:

[REDACTED]

Organization: DHHL lessee

Government Agency Type: Local

General Comment

I object to any activity off Kaena for development for it is a sacred fishing Koa that my family use to feed our local communities. Any development will destroy the Eco system for fishing.

Hawaii Scoping Meetings – Waianae (July 20)

Melva Aila



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

First of all I do not support your unsolicited leases request for Kaena Point.

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

Kaena Point is a very special place and should be left alone. The area is fine right now with no man-made industries and its impacts to our community.

Submitter Information

Name: Michael Krijnen

Address:

Email:

Phone:

Organization: NA

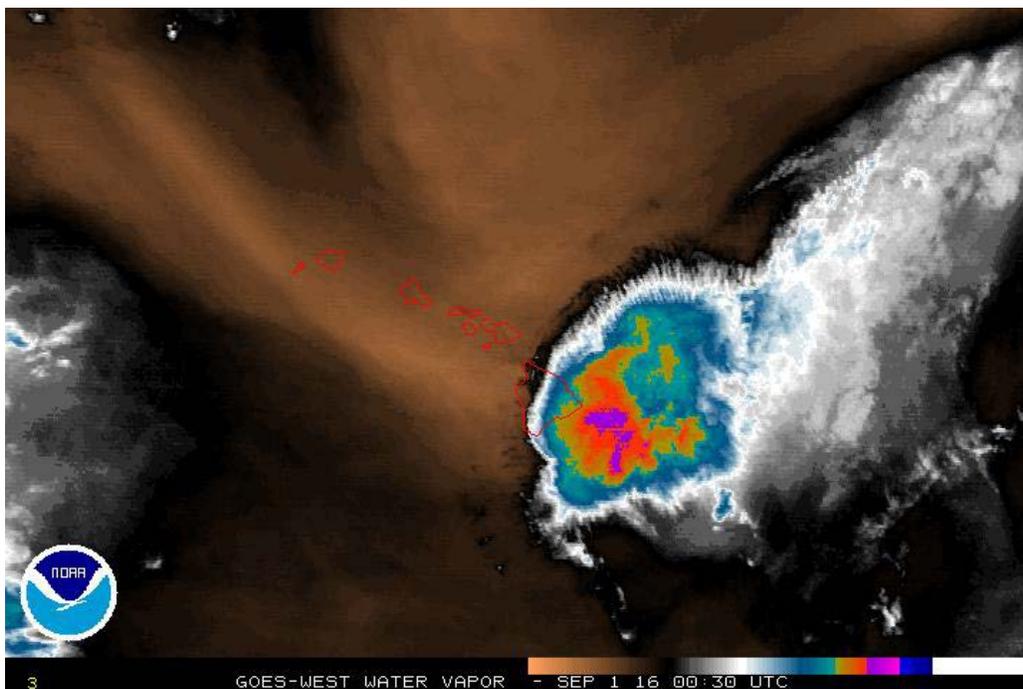
General Comment

Let me know when you are having meetings available to the public in Hawaii to either make comment find out more, or make comments.

Without a local presence this procurement or decision making process is not making sense, we cannot all leave this place to talk to people not from this place who are making decisions about this place.

Who will insure a place that has so many hurricanes - was it 16 last year and 16 the year before.

Big is not beautiful it is pathetic.



Submitter Information

Name: Maelani Lee

Address:

[REDACTED]

Email:

Organization: NA

General Comment

I oppose to wind farming due to the fact that it is sacred grounds. The area must remain status quo (same as it is now) for preservation and protection of our Hawaiian culture. Also, there are more negative concerns than there are positive so I suggest that this project not go through. It will harm our sea life and birds which we can't have happen. Once it's up, it won't come down and then we will have to deal with all the damages incurred by the wind turbines, which would not be rather fair for our people, wildlife and sea life. There is a spiritual connection that Hawaiians have and having turbines will affect our culture as it will not be the same as it is now. So I oppose this project in its entirety especially since it will limit our way of life as we fish and paddle out in the area.

Submitter Information

Name: Alana Bryant

Address:

[REDACTED]

Email:

[REDACTED]

Organization: NA

General Comment

Aloha,

I grew up in Manoa, Oahu, and I spend much of my life outdoors, swimming, surfing, hiking, and sailing. I live on a boat in Waikiki and sail very frequently off of southern Oahu. I am concerned with several effects the proposed offshore wind farm off of southern Oahu will have, and request that these potential effects be thoroughly addressed in the Environmental Impact Statement.

1) Restricted areas and/or obstructions to safe navigation for recreational sailing vessels

When sailing far to the south or sailing between islands (i.e. Oahu to Molokai), the transit will be far more difficult if there is a field of giant wind turbines to navigate through. Though it appears that the wind farm will not lie in the direct line between the islands, the reality is that on a sailing vessel, one must often sail far to the south-east before turning again to the north-north-east in order to reach Molokai or Lanai. This will likely cause a vessel to be required to navigate through the wind farm.

Moreover, and related to the above concern, I believe that it is likely that recreational vessels will not be permitted into the waters surrounding the wind turbines. What this means is that vessel will have a giant red area on the charts where they will not be permitted to enter, and will be required to continuously monitor their proximity to the restricted area or face penalties. Avoidance of man-made obstructions and security zones should be the least concern to a mariner who is navigating a small vessel in some of the world's roughest channels. This also means that vessels will not be able to take the usual south-easterly take before taking the north-north-easterly take to reach Lanai or Molokai. Instead, they will be required to make dangerous maneuvers (i.e. many small tacks), in order to stay north of the restricted zone.

I believe that any such obstruction, with or without a Coast Guard enforced restricted area, will make one of the most enjoyable experiences of sailing in Hawaii waters far less pleasurable. Not only will it create obstacles to sailing, but those on the vessels will be forced to look at what has become an industrial area rather than a boundless ocean. I am completely opposed to any such obstacle.

Please include the above consideration in your Environmental Impact Statement.

2) Mental Borders.

Every single day of my life I look out at the waters off Hawaii and it creates in my mind a feeling of wonder at the expanse of the ocean. I believe that with a man-made industrial area will create a Mental Border or Mental Wall which will severely detract from the feeling one currently has when looking out at the ocean.

Here in Hawaii, we look to the south and sense an unfathomable expanse. We are set here in the middle of the ocean in the most isolated islands on earth. I believe that this feeling of awe will be severely tainted when one looks out and sees the product of modern technology's grip on this wild ocean. It will be an ugly wall that will destroy a beautiful, awe inspiring view.

I was extremely insulted by the complete disregard evidenced in the initial application for the lease. To paraphrase, "the horizon off Oahu is already cluttered with ships, airplanes, surfers, tourist, etc." That is an abhorrent attitude. Do birds, sunsets, water, waves, and clouds also clutter the horizon? It is an absurd thing to say and is highly inconsiderate of a foreseeable and legitimate concern of those who will be forced to look at these new structures NIGHT AND DAY for the rest of our lives and probably our children's lives too, before these rusty things are finally removed.

3) Fishing.

These wind turbines will essentially function as fish aggregate devices, and fishermen (many of my friends are recreational fishermen) will not be able to enter the waters where the fish are. I believe that this concern has been thoroughly discussed in comments other than this one, so I will not elaborate further.

Conclusion:

There are many other negative effects of this proposal. I am adamantly opposed to any grouping of turbines that would be visible from Oahu or would obstruct the waters here, either in navigation or visual.

I know that there is a strong coalition opposed to wind farms on the North Shore; I support their opposition too. However I limit my discussion to the south shore effects because I believe that the North Shore has strong representation and there are fewer voices from the southern shore.

Thank you,
Alana Bryant

Bruce Beekman



No more wind turbines or wind farms in Hawaii pushed by lobbyists making handsome profits from a source of energy that wind up being way more expensive than they say it will be and delivering much less than promised! Wind turbines are ugly in a state that's world famous for its natural beauty. That beauty is hugely diminished when wind turbines are in sight. They are also unreliable, do NOT solve Hawaii's energy needs and drive up the costs, which are already the highest in the nation, thanks to politicians who don't know what they're doing and rely on sweet-talking, campaign-contributing, wind energy lobbyists.

Submitter Information

Name: Caterina Desiato

Address:

[REDACTED]

Email:

Organization: NA

General Comment

Aloha, thank you for requesting feedback. As a scholar I know that assessments of any kind should be conducted by independent third party and critical voices in order not to minimize negative aspects and externalities and in order to identify farsighted solutions. I am strongly confident that if you would allow that, and if you would seriously consider a radical shift toward more decentralized and empowering choices with no negative impact on wildlife and scenery, you would set a a very successful precedent. Mahalo.

Submitter Information

Name: Cruz J Vina Jr

Address:

[REDACTED]

Email:

Phone:

Organization: NA

General Comment

Great idea!

Hawaii Scoping Meetings – Honolulu (July 19)

John Corbin



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

Hawaii had the first open ocean aquaculture farm in the nation established in state waters in 2001. Currently we have the only open ocean fish farm in the nation off Kona Hawaii. Hawaii has a state ocean leasing law that allows commercial aquaculture in state waters. There is interest. I believe Federal law allows co-location of aquaculture with oil & gas and wind energy projects. Include consideration of offshore aquaculture in the assessment.

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

Currently there is a PEIS being prepared for permitting aquaculture in federal waters around Hawaii and the American Flag islands. Agency is NOAA fisheries.

Other comments?

Submitter Information

Name: D'Arcy Kerrigan

Address:

[REDACTED]

Email:

[REDACTED]

Phone:

[REDACTED]

Organization: NA

General Comment

I am opposed to the wind farm proposal off of Kaena Point for many reasons that have been put forth eloquently by other individuals. Our community has an abundance of sunshine to harness for power, unlike the other areas of the world where the wind farms are being tested.

The energy generated by the sun far out paces the energy produced by current wind turbine technology. Let's use the resource that is accessible and generate the maximum amount of energy without harm to animals and environment.

Our unique community of islands is able to generate far more power with the sun, with less maintenance than any turbine technology available today.

Aloha BOEM,

The following comments are submitted for BOEM–2016–0049 regarding proposed Oahu, Hawaii offshore wind project.

<http://www.ililani.media/2016/05/offshore-wind-meeting-in-honolulu.html>

What impact would this project have on those who have powerboats / sailboats? Would they be restricted from sailing to within a certain distance from the entire project?

Will any future SuperFerry or shipping barges need to alter current headings significantly to reach their destinations?

Will the turbines be a hazard to aircraft, especially at night and especially in low visibility during storm? Or, is height of the turbines low enough that they are not a hazard? Will they require red flashing lights that can be seen by aircraft, ships, barges, military vessels, and pleasure boats at night? Will aircraft flight paths need to be altered for landing and takeoffs? Will this all need FAA approval?

What impact will the project have on future RIMPAC exercises?

Will the project hinder the entrance to any of Oahu's harbors, including Pearl Harbor for large ships?

How many offshore birds does Hawaii have in the area, including endangered species that could be killed by these wind turbines? Onshore turbines kill lots of wildlife that can't defend itself in court.

The island of Kauai'i doesn't allow wind energy at all because of the native bird population. Some turbines are reported to be surrounded by cages of some sort, like the shroud around a house fan. That could reduce bird deaths.

What will be the impact of a hurricane or tsunami or just storm surges and high seas on the project? Just look at the impact of tropical storm Darby the weekend of July 23-25. It was a mild storm compared to what can occur.

Study eyes risk of big tsunami in Hawaii from mega-earthquake in Aleutians

<http://www.hawaiinewsnow.com/story/31972360/study-eyes-risk-of-big-tsunami-to-hawaii-from-mega-earthquake-in-aleutians>

The UH School of Ocean and Earth Science and Technology (SOEST) has already provided maps of flood and tsunami inundation zones for Oahu.

Department of Emergency Management - Tsunami maps and information

<https://www.honolulu.gov/demevacuate/tsunamimaps.html>

UH researchers have recently reported that there is a 10% chance that an earthquake off the Aleutian Islands is likely to occur within 50 years and produce a tsunami that hits Oahu.

Hawaii Could Be Devastated By A Tsunami Within 50 Years

http://www.huffingtonpost.com/entry/hawaii-tsunami-threat_us_57364719e4b077d4d6f32c28

The findings suggest there is between a 6 percent and 12 percent chance of a mega-earthquake striking the Aleutians and causing a tsunami in Hawaii in the next 50 years. If and when it happens, it could cause some \$40 billion in damage and affect 400,000 residents and tourists.

Alaskan earthquake triggers massive tsunami - 1946

<http://www.history.com/this-day-in-history/alaskan-earthquake-triggers-massive-tsunami>

Hawaii is certainly not immune to tsunamis as shown by past tsunamis:

Three tsunamis that changed Hilo and Hawaii's Big Island

http://www.hawaiimagazine.com/blogs/hawaii_today/2009/11/25/tsunami_Hilo_Big_Island_Hawaii

Maybe Hawaii is long overdue for a "Big One" just like earthquake predictions for San Francisco and Los Angeles area. What happens to the project if a big earthquake in SF generates a huge tsunami that hits Hawaii?

Underwater wave technology is both safer and unobtrusive to vacationers looking for that perfect sunset photo from a clear view of the horizon with sailboats instead of a bunch of ugly wind turbines.

<http://carnegiewave.com/projects/ceto-6/>

<http://carnegiewave.com/what-is-ceto/>

Named after a Greek sea goddess, CETO offers the potential to revolutionize power and water production globally. CETO harnesses the enormous renewable energy present in our ocean's waves and converts it into two of the most valuable commodities underpinning the sustainable growth of the planet; zero-emission electricity and zero-emission desalinated water.

The CETO system is different from other wave energy devices as it **operates under water where it is safer from large storms and invisible from the shore.** The fully submerged buoys drive pumps and generators that are contained offshore, within the buoy itself, with power

delivered back to shore through subsea cables to power desalination plants as well as for export into the grid.

What happens if climate change affects wind patterns negatively and even causes trade winds to decrease as one longtime sailor predicts, based upon historical wind patterns? Perhaps lower trade wind issues won't matter because the developers will have already gotten their millions in tax write offs before wind patterns change significantly enough to make floating offshore wind production impractical and uneconomical.

Will the developers be required to remove the turbines if damaged beyond repair by a hurricane or tsunami or if they are no longer producing enough power to be cost effective to operate because of less wind?

Have developers done computer modeling to show that the turbines will be cost effective to operate if the wind blows X mph for Y number of days per year? Do they have a worse case scenario and best case scenario?

Will developers simply be allowed to abandon the turbines in place and let the Navy sink them with a RIMPAC target practice exercise?

Will all the issues be clearly spelled out in contracts and power purchase agreements regarding requirements to be

met if a hurricane or tsunami or even a local earthquake damages or destroys any or all of the project's turbines?

Denmark company absent from Hawaii offshore wind energy meeting

<http://www.bizjournals.com/pacific/news/2016/05/16/denmark-company-absent-from-hawaii-offshore-wind.html?>

Denmark probably has more experience with offshore wind than anyone. I saw them flying into Copenhagen a few years ago.

I was unable to read the above article, but it is likely that Denmark, like Iceland (HECO geothermal RFP bidder) and others, know from experience and news reports of Hawaii's anti-business attitude that it isn't worth the time or expense to put in a bid.

Denmark, like Iceland, and even OTEC LLC, know from experience that HECO calls all the shots on energy in Hawaii and only awards projects to its favorite, preferred inside monopoly partners to maximize profits and control of projects. The cards are deliberately stacked against outsiders by HECO.

In the end, it is all about the worship of MOOLAH, not about common sense, not about renewable energy or

saving the planet or becoming sustainable with renewable energy or lowering costs for ratepayers.

Hawaii, and Oahu in particular, would be better served by using a small modular nuclear reactor or SMR on an energy ship or on a military base like Schofield Barracks, much like the SMRs in the Navy's fleet at Pearl Harbor.

This approach has been promoted extensively for years by retired Hawaii Senator, Fred Hemmings.

As I recall, however, any other nuclear power in Hawaii besides the huge amount at Pearl Harbor would require a 2/3 vote by the Hawaii Legislature

Also, the Windward side of the island, at the Pali Lookout where King Kamehameha's enemies met their death, there is a huge amount of wind. Turbines could be placed INSIDE the face of the mountain, camouflaged, and power lines run down the Pali HWY to HECO's power plant. This would be a safer approach than offshore wind in the event of storms, high seas, and tsunamis.

Geothermal energy has the potential to power the entire state, but HECO clearly does not support geothermal energy and especially hydrogen production from geothermal energy for a transportation economy because HECO can't have absolute control over such energy and

maximize profits from electricity sales for EVs. HECO won't profit from hydrogen powered cars and trucks.

Storms are less likely to curtail 24/7 base-load energy production from a properly designed new geothermal plant [not problematic PGV] than intermittent energy production from offshore wind, but HECO prefers intermittent wind energy over base-load energy because it has more control over big wind and big solar projects to protect its profits.

This new solar powered “Smart Flower” may weather a storm better than offshore wind turbines because they close up like a flower at night.

Solar Powered Smart Flowers

<http://www.renewableenergyworld.com/articles/2016/07/solar-powered-smart-flowers-are-new-focus-for-cape-wind-champion-jim-gordon.html?>

Will this Federal Appeals Court ruling impact Hawaii's project?

Cape Wind Project Suffers Loss at Federal Appeals Court

<http://www.renewableenergyworld.com/articles/2016/07/cape-wind-project-suffers-loss-at-federal-appeals-court.html?>

RenewableEnergyWorld is an excellent national / international source of information on new technologies.

This link is a search for floating wind farms.

http://www.renewableenergyworld.com/_search?q=floating+wind+farms

From HawaiiFreePress:

New California Gold Rush beckons wind developers off coast

<http://phys.org/news/2016-05-california-gold-beckons-coast.html#jCp>

by Jennifer A. Dlouhy, Bloomberg News (excerpts)

When turbines start spinning at the first U.S. offshore wind farm near Rhode Island later this year, some energy developers will already be eyeing a bigger prize....

...The technology is in its early days. Globally, there are just 15.33 megawatts of floating wind capacity, mostly coming from a handful of pilot projects involving one or two turbines, according to Bloomberg New Energy Finance. That's less than a percent of the total 11.6 gigawatts of capacity from traditional wind projects in waters around the world....

...Offshore wind projects aren't free from environmental criticism. Fishermen and conservationists have warned that some projects could disturb seabirds, marine mammals and fish spawning grounds.

But the major challenge is cost. Floating wind could cost around \$8.95 million per megawatt by 2020 - more than double the \$4.03 million per megawatt projected for conventional offshore, bottom-fixed wind projects - said BNEF analyst Tom Harries....

Floating turbine foundations cost about eight times more than seafloor-based supports for their conventional counterparts, according to BNEF. But they can be reused to support replacement turbines when old ones reach the end of their quarter-century lifespan.

(IQ Test: Do you believe that?)

"Every 20 or 25 years, no matter what you do, you have to replace the turbine," said Habib Dagher, executive director of the University of Maine's Advanced Structures and Composites Center. Since the biggest expenses of offshore wind projects are foundations and associated infrastructure - not the turbines - floating designs that allow reuse of those expensive structures are more cost-effective....

(Yeah right. After floating in salt water for 25 years, the barge will be ready to float for another 25 years. The whole enterprise is being financially justified by this absurd claim.)

Related:

2015: Rusting Windfarm Junk off Waikiki: Europe's Disaster Coming to Hawaiian Waters

<http://www.hawaiiifreepress.com/ArticlesMain/tabid/56/ID/15278/Rusting-Windfarm-Junk-off-Waikiki-Europes-Disaster-Coming-to-Hawaiian-Waters.aspx>

2016: Rusting Wind Junk off Waikiki? Ige Flies to NYC, DC for Meetings

<http://www.hawaiiifreepress.com/ArticlesMain/tabid/56/ID/16957/Rusting-Wind-Junk-off-Waikiki-Ige-Flies-to-NYC-DC-for-Meetings.aspx>

2016: Oahu Windfarm Proposed for Live Explosives Dumping Area

<http://www.hawaiiifreepress.com/ArticlesMain/tabid/56/ID/17124/Oahu-Windfarm-Proposed-for-Live-Explosives-Dumping-Area.aspx>

Oahu's Future: 757 square miles of Rusting Wind Junk

<http://www.hawaiiifreepress.com/ArticlesDailyNews/tabid/65/ID/17518/May-17-2016-News-Read.aspx>

Bottom line for me is that offshore wind production is not suitable for Hawaii so the project should be rejected. It is all about tax write offs, not about doing what is best for Hawaii's future or any of the wildlife that can't defend itself against man's encroachment on their habitats, man's technology and man's greed for money.

The public and planet have never been relevant in the making of political decisions. All that matters is MOOLAH worship, and that idolatry of a false god is destroying Spaceship Earth.

Mahalo,

Ed Wagner

Erik Rask



I am a long time resident of Honolulu and an avid sailor and surfer. I live on my boat in Waikiki and sail very frequently off of southern Oahu. I am concerned with several effects the proposed offshore wind farm off of southern Oahu will have, and request that these potential effects be thoroughly addressed in the Environmental Impact Statement.

1) Restricted areas and/or obstructions to safe navigation for recreational sailing vessels. When sailing far to the south or sailing between islands (i.e. Oahu to Molokai), the transit will be far more difficult if there is a field of giant wind turbines to navigate through. Though it appears that the wind farm will not lie in the direct line between the islands, the reality is that on a sailing vessel, one must often sail far to the south-east before turning again to the north-north-east in order to reach Molokai or Lanai. This will likely cause a vessel to be required to navigate through the wind farm. Moreover, and related to the above concern, I believe that it is likely that recreational vessels will not be permitted into the waters surrounding the wind turbines. What this means is that vessel will have a giant red area on the charts where they will not be permitted to enter, and will be required to continuously monitor their proximity to the restricted area or face penalties. Avoidance of man-made obstructions and security zones should be the least concern to a mariner who is navigating a small vessel in some of the world's roughest channels. This also means that vessels will not be able to take the usual south-easterly take before taking the north-north-easterly take to reach Lanai or Molokai. Instead, they will be required to make dangerous maneuvers (i.e. many small tacks), in order to stay north of the restricted zone. I believe that any such obstruction, with or without a Coast Guard enforced restricted area, will make one of the most enjoyable experiences of sailing in Hawaii waters far less pleasurable. Not only will it create obstacles to sailing, but those on the vessels will be forced to look at what has become an industrial area rather than a boundless ocean. I am completely opposed to any such obstacle. Please include the above consideration in your Environmental Impact Statement.

2) Mental Borders. Every single day of my life I look out at the waters off Hawaii and it creates in my mind a feeling of wonder at the expanse of the ocean. I believe that with a man-made industrial area will create a Mental Border or Mental Wall which will severely detract from the feeling one currently has when looking out at the ocean. I have been to the Gulf Coast of Alabama (during the 2010 oil spill as a responder), and I distinctly remember the feeling I had when I looked out at the ocean and saw lines and lines of oil well platforms. It looked as though the ocean ended there and did not expand further for hundreds of miles. Here in Hawaii, we look to the south and sense an unfathomable expanse. We are set here in the middle of the ocean in the most isolated islands on earth. I believe that this feeling of awe will be severely tainted when one looks out and sees the product of modern technology's grip on this wild ocean. It will be an ugly wall that will destroy a beautiful, awe inspiring view. I was extremely insulted by the complete disregard evidenced in the initial application for the lease. To paraphrase, "the horizon off Oahu is already cluttered with ships, airplanes, surfers, tourist, etc." Why not add to that list other things that comprise a beautiful view of the ocean such as "birds, sunsets, water, waves, clouds, etc." I think this is a completely absurd thing to say and is highly inconsiderate of a foreseeable and legitimate concern of those who will be forced to look at these new structures NIGHT AND DAY for the rest of our lives and probably our children's lives too, before these rusty things are finally removed.

3) Fishing. I believe that all of the fish will congregated around these wind turbines, which will essentially function as fish aggregate devices, and fishermen (many of my friends are recreational fishermen) will not be able to enter the waters where the fish are. I believe that this concern has been thoroughly discussed in comments other than this one, so I will not elaborate further.

Conclusion: There are many

other negative effects of this proposal. I am adamantly opposed to any grouping of turbines that would be visible from Oahu or would obstruct the waters here, either in navigation or visual. I know that there is a strong coalition opposed to wind farms on the North Shore; I support their opposition too. However I limit my discussion to the south shore effects because I believe that the North Shore has strong representation and there are fewer voices from the southern shore. The attached picture was taken off Penguin Banks, south-west of Molokai. This is what's at stake.

I am a long time resident of Honolulu and an avid sailor and surfer. I live on my boat in Waikiki and sail very frequently off of southern Oahu. I am concerned with several effects the proposed offshore wind farm off of southern Oahu will have, and request that these potential effects be thoroughly addressed in the Environmental Impact Statement. 1) Restricted areas and/or obstructions to safe navigation for recreational sailing vessels When sailing far to the south or sailing between islands (i.e. Oahu to Molokai), the transit will be far more difficult if there is a field of giant wind turbines to navigate through. Though it appears that the wind farm will not lie in the direct line between the islands, the reality is that on a sailing vessel, one must often sail far to the south-east before turning again to the north-north-east in order to reach Molokai or Lanai. This will likely cause a vessel to be required to navigate through the wind farm. Moreover, and related to the above concern, I believe that it is likely that recreational vessels will not be permitted into the waters surrounding the wind turbines. What this means is that vessel will have a giant red area on the charts where they will not be permitted to enter, and will be required to continuously monitor their proximity to the restricted area or face penalties. Avoidance of man-made obstructions and security zones should be the least concern to a mariner who is navigating a small vessel in some of the world's roughest channels. This also means that vessels will not be able to take the usual south-easterly take before taking the north-north-easterly take to reach Lanai or Molokai. Instead, they will be required to make dangerous maneuvers (i.e. many small tacks), in order to stay north of the restricted zone. I believe that any such obstruction, with or without a Coast Guard enforced restricted area, will make one of the most enjoyable experiences of sailing in Hawaii waters far less pleasurable. Not only will it create obstacles to sailing, but those on the vessels will be forced to look at what has become an industrial area rather than a boundless ocean. I am completely opposed to any such obstacle. Please include the above consideration in your Environmental Impact Statement. 2) Mental Borders. Every single day of my life I look out at the waters off Hawaii and it creates in my mind a feeling of wonder at the expanse of the ocean. I believe that with a man-made industrial area will create a Mental Border or Mental Wall which will severely detract from the feeling one currently has when looking out at the ocean. I have been to the Gulf Coast of Alabama (during the 2010 oil spill as a responder), and I distinctly remember the feeling I had when I looked out at the ocean and saw lines and lines of oil well platforms. It looked as though the ocean ended there and did not expand further for hundreds of miles. Here in Hawaii, we look to the south and sense an unfathomable expanse. We are set here in the middle of the ocean in the most isolated islands on earth. I believe that this feeling of awe will be severely tainted when one looks out and sees the product of modern technology's grip on this wild ocean. It will be an ugly wall that will destroy a beautiful, awe inspiring view. I was extremely insulted by the complete disregard evidenced in the initial application for the lease. To paraphrase, "the horizon off Oahu is already cluttered with ships, airplanes, surfers, tourist, etc." Why not add to that list other things that comprise a beautiful view of the ocean such as "birds, sunsets, water, waves, clouds, etc." I think this is a completely absurd thing to say and is highly inconsiderate of a foreseeable and legitimate concern of those who will be forced to look at these new structures NIGHT AND DAY for the rest of our lives and probably our children's lives too, before these rusty things are finally removed. 3) Fishing. I believe that all of the fish will congregated around these wind turbines, which will essentially function as fish aggregate devices, and fishermen (many of my friends are recreational fishermen) will

not be able to enter the waters where the fish are. I believe that this concern has been thoroughly discussed in comments other than this one, so I will not elaborate further. Conclusion: There are many other negative effects of this proposal. I am adamantly opposed to any grouping of turbines that would be visible from Oahu or would obstruct the waters here, either in navigation or visual. I know that there is a strong coalition opposed to wind farms on the North Shore; I support their opposition too. However I limit my discussion to the south shore effects because I believe that the North Shore has strong representation and there are fewer voices from the southern shore. The attached picture was taken off Penguin Banks, south-west of Molokai. This is what's at stake.



Eugene Tierney



We need wind power! I am in full support.

Lucas Bond



I oppose any wind projects in Hawaii. Wind projects are an eye sore and should not even be considered in a beautiful place like the islands of Hawaii. Solar still has plenty of room to grow, and will benefit the local population instead of greedy energy companies.

Submitter Information

Name: Marian Grey

Address:

Email:

Phone:

Fax:

Organization: NA

General Comment

I am strongly opposed to Wind Mills. People are too willing to ignore items like killing birds, and the noisy environment surrounding them. That is on the land, same detriment to the birds over water, and who knows what damage would be created below water. This is the wrong thing to do! Our endangered State Mammal, the Hawaiian Hoary Bat is being destroyed by windmills on land.

Moku Anonymous



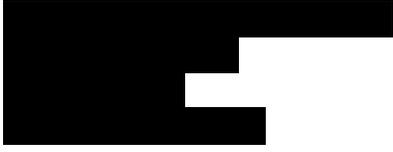
Stop the development of these windmills in Hawaii. The current windmills on Maui and Oahu look horrible. I would hate to see these things over the ocean ruining the view. This is U.S imperialism and colonialism at it's worst taking resources from the Sovereign Hawaiian Islands and giving it to large foreign corporations for greed and profit.

L. Pyle



These can be very ugly and ruin an otherwise beautiful view plane. I have seen this in California where the land or sea scape is destroyed by these towering structures. We must be mindful of preserving beautiful views as one of our greatest assets.

Stuart Novick



NO wind farms off Waikiki! Terrible idea! Keep them out of the view plain. Have respect for Hawaiian culture!

Hawaii Scoping Meetings – Waianae (July 20)

Lloyd Reinhardt



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

Does the amount of “proposed project area aliquots” dictate the amount of turbines? There are 32 aliquots covering 11 OCS blocks.

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