

August 18, 2014

Via Federal e-Rulemaking Portal

Michelle Morin
Office of Renewable Energy Programs
Bureau of Ocean Energy Management
381 Elden Street
HM 1328
Herndon, Virginia 20170-4817

RE: Atlantic Lease Sale 4 (ATLW4): Commercial Leasing for Wind Power on the Outer Continental Shelf Offshore Massachusetts – Proposed Sale Notice [Docket No. BOEM-2014-0034]

Dear Ms. Morin:

Thank you for the opportunity to comment on the Proposed Sale Notice (“PSN”) for wind power off the coast of Massachusetts. The responsible development of offshore wind energy in the Massachusetts Wind Energy Area (“WEA”), and in United States waters in general, is vital to the interests of Oceana and its members. Offshore wind has incredible potential to reduce carbon dioxide and other greenhouse gas emissions otherwise generated by the combustion of fossil fuels. These emissions are causing climate change and ocean acidification, two of the most significant threats to the future of healthy marine ecosystems. In order to maintain healthy coral reefs, vibrant fisheries and abundant coastal resources, the United States must rapidly transition to renewable energy sources. The responsible development of offshore wind, **in a manner that is protective of marine resources**, is an important step in this process. Oceana is pleased, therefore, that the Bureau of Ocean Energy Management (“BOEM”) has released a PSN for the Massachusetts WEA, and we appreciate the opportunity to comment as BOEM prepares the Final Sale Notice (“FSN”).

Oceana applauds BOEM’s efforts to incorporate into the current Massachusetts PSN suggestions we have made in prior comments to BOEM on the Virginia PSN and the PSN for the Area of Mutual Interest between Massachusetts and Rhode Island. Because Oceana is committed to the expeditious development of clean, renewable offshore wind energy, we are pleased with BOEM’s plan to auction the Massachusetts WEA **as four zones**¹, as opposed to one zone as was done in the Virginia WEA. Oceana requested in prior comments² that BOEM split lease areas up into multiple zones to ensure a competitive process. While holding four lease sales does not a guarantee that a single entity will not

¹ Bureau of Ocean Energy Management. 2014. Atlantic Wind Lease Sale 4 (ATLW4) Commercial Leasing for Wind Power on the Outer Continental Shelf Offshore Massachusetts – Proposed Sale Notice. Page 15.

² Comments submitted by Oceana on February 1, 2013, regarding the Atlantic Wind Lease Sale 2 (ATLW1): Commercial Leasing for Wind Power on the Outer Continental Shelf Offshore Virginia – Proposed Sale Notice [BOEM-2012-0033]. Page 2.

win the lease rights to all zones, the greater potential for multiple leaseholders allows for a higher degree of competition.

Furthermore, Oceana agrees with BOEM's decision to award a bidder that holds a qualified Power Purchase Agreement ("PPA") or Community Benefits Agreement ("CBA") to receive a maximum credit of up to 25% and 5%, respectively. This will allow for preferential treatment to be provided to developers who have proven to be first movers in the industry. These credit allowances increase the likelihood that offshore wind projects offshore Massachusetts are brought online in a timely manner.

Oceana hopes to see offshore wind and renewable energy facilities developed efficiently, expeditiously and responsibly in order to protect North Atlantic right whales, a species in particular danger of extinction, and other marine life, and to gain the benefits of transitioning toward cleaner energies. To that end, in evaluating site characterization activities³ and site assessment activities⁴, BOEM must consider all of the potential impacts of data collection and equipment testing on vulnerable species. In that vein, we provide some recommendations below that would serve to enhance protection of the North Atlantic right whale and other vulnerable species during the development of the Massachusetts WEA. Oceana recommends that BOEM fully analyze potential impacts on the North Atlantic right whale and other protected species.

As you may know, Oceana and other environmental nonprofit organizations have entered into two agreements with offshore wind developers so far, which provide enhanced protections for the North Atlantic right whale during offshore wind development.⁵ The mitigation measures provided therein establish red, yellow and green time period recommendations for certain offshore wind activities that we believe BOEM should incorporate into all agreements the government enters into with offshore wind development companies, such as site assessment and site characterization activities, construction and operations plans ("COP"), and leases.

In addition to the previous agreements between developers and the environmental community, the Massachusetts' leases should include a discussion of alternatives and mitigation.⁶ We ask that BOEM consider, and adopt, the following mitigation alternatives:

- Place a year-round speed limit on all vessels over 65 feet in length to 10 knots;

³ Including geophysical, geotechnical, archaeological, and biological surveys.

⁴ Including installation and operation of meteorological towers and buoys.

⁵ "Proposed Mitigation Measures to Protect North Atlantic Right Whales from Site Assessment and Characterization Activities of Offshore Wind Energy Development in the Rhode Island and Massachusetts Wind Energy Area." 7 May 2014. Available at <http://www.clf.org/wp-content/uploads/2014/05/050714-NARW-Letter-to-BOEM-re-RI-MA-WEA-850.pdf>.

"Proposed Mitigation Measures to Protect North Atlantic Right Whales from Site Assessment and Characterization Activities of Offshore Wind Energy Development in the Mid-Atlantic Wind Energy Areas." 12 December 2012. Available at http://www.clf.org/wp-content/uploads/2012/12/final-mid-atlantic-measure-BOEM-ltr_12-12-12.pdf.

⁶ 40 U.S.C. §4332(C)(iii); 40 C.F.R. §§ 1508.9, 1508.25.

- Establish appropriate exclusion zones during pile driving and high-resolution geophysical (“HRG”) surveying and adequate training and number of observers;
- Use passive acoustic monitoring for real-time monitoring of the exclusion zone;
- Cease pile driving if a marine mammal or sea turtle enters the exclusion zone;
- Prohibit HRG surveys and pile driving at night or during times of poor visibility; and
- Incorporate the most current acoustic guidelines.

FULLY ANALYZE IMPACTS ON THE NORTH ATLANTIC RIGHT WHALE AND OTHER PROTECTED SPECIES

The North Atlantic right whale (*Eubalaena glacialis*) is a critically endangered species with a minimum population estimate of 455 individuals⁷ remaining. There are only about 100-150 breeding-age females left and harm to even one mother or calf can have a ripple effect on future populations. North Atlantic right whales are protected in the United States by both the Marine Mammal Protection Act (“MMPA”) and the Endangered Species Act (“ESA”), and, therefore, harm to this species must be avoided during any offshore activities.

Newly available data reveals that right whales are present in and around the WEA more often than previously thought. While earlier aerial surveys have indicated that right whales were present in the WEA in December, February, and March, results of new acoustic studies show that right whales were present in the WEA during 8 months (December through May and September through October).⁸ These acoustic results corroborate previous sightings data that right whales are most likely to occur in the highest densities in the WEA during the spring months. Moreover, they indicate that this species appears to be in the region for longer periods of time than previously known.⁹

Moreover, BOEM notes in the Environmental Assessment (“EA”) that endangered cetaceans, such as the North Atlantic right whale, would be “adversely affected by the proposed action; however, it is not likely to jeopardize the continued existence of any of these species ... [and] would not result in any population-level impacts to marine mammals, protected fish species, or sea turtles.”¹⁰ Nonetheless, due to the North Atlantic right whale’s presence in and around the WEA, it will be critical to carefully monitor this species during its spring and fall migrations.

Given both the endangered status of North Atlantic right whales and their frequent presence in the Massachusetts WEA, BOEM should carefully and fully analyze all potential impacts on this species. It

⁷ National Marine Fisheries Service. 2014. Draft U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2013. Available online at: http://www.nmfs.noaa.gov/pr/sars/pdf/ao2013_draft.pdf. Accessed June 18, 2014.

⁸ Kraus, S. D. et al. 2013. Field Surveys of Whales and Sea Turtles for Offshore Wind Energy Planning in Massachusetts. 2011-2012. Massachusetts Clean Energy Center.

⁹ *Ibid.*

¹⁰ Bureau of Ocean Energy Management. Revised Environmental Assessment for the Commercial Wind lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore Massachusetts (referred to as “EA”). June 2014. Page 5.

is critically important that BOEM note any knowledge gaps in the abundance, distribution and behavior of right whales in this region, and account for these gaps. During site characterization and site assessment activities, biological monitoring will be crucial to make an informed decision about the environmental impacts of developing offshore wind in this area.

MITIGATION MEASURES SHOULD BE INCORPORATED INTO SUBSEQUENT SITE CHARACTERIZATION AND SITE ASSESSMENT ACTIVITIES

Five endangered whale species are likely to occur in the vicinity of the WEA: North Atlantic right whales, fin whales, sei whales, humpback whales, and sperm whales.¹¹ Additionally, five species of sea turtles, all of which are listed as threatened or endangered, occur in the northwest Atlantic waters: Kemp's ridley, loggerhead, green, hawksbill, and leatherback.¹² As such, there should be robust procedures in place to protect these vulnerable species. Oceana recommends the following mitigation measures be incorporated into approved site characterization and site assessment activities, as well as leases, to avoid harm to marine life during data collection.

Incorporate seasonal restrictions agreed upon by offshore wind developers and environmental nonprofit organizations

In December 2012, Oceana and other conservation organizations signed an agreement with offshore wind developers in the Mid-Atlantic Wind Energy Areas establishing enhanced agreed-upon mitigation measures aimed at protecting the North Atlantic right whale.¹³ This agreement created green, yellow and red time period recommendations for various activities relating to the development of offshore wind. In April 2014, a new agreement¹⁴ was signed by the same conservation organizations and Deepwater Wind, LLC, the developer of the Area of Mutual Interest between Rhode Island and Massachusetts. The following mitigation measures were included in these agreements:

- Seasonal restrictions on sub-bottom profiling and pile driving for meteorological tower installation;
- Vessel speed restrictions;
- Use of noise attenuation and source level reduction technology during the yellow period for pile driving to reduce sound during meteorological tower construction;
- Establishment of exclusion zones;
- Real-time monitoring effort; and

¹¹ EA page 141.

¹² EA page 175.

¹³ "Proposed Mitigation Measures to Protect North Atlantic Right Whales from Site Assessment and Characterization Activities of Offshore Wind Energy Development in the Mid-Atlantic Wind Energy Areas" (Submitted to BOEM December 2012). [<http://www.nwf.org/~media/PDFs/Global-Warming/Right-Whale-Letter-to-BOEM-12-12-12.pdf>]

¹⁴ "Proposed Mitigation Measures to Protect North Atlantic Right Whales from Site Assessment and Characterization Activities of Offshore Wind Energy Development in the Mid-Atlantic Wind Energy Areas." 12 December 2012. Available at http://www.clf.org/wp-content/uploads/2012/12/final-mid-atlantic-measure-BOEM-ltr_12-12-12.pdf.

➤ Adaptive management review.

Oceana supports the inclusion of these agreed-upon measures into subsequent site assessment and site characterization activities, as well as in COPs and leases, as a means of protecting right whales during potentially harmful anthropogenic activities. **These mitigation actions would allow for the full leasing of the WEA as proposed in Alternative A, the Preferred Alternative, in the EA.**

Place a Year-Round Speed Limit on all Vessels over 65 Feet in Length to 10 Knots

The North Atlantic right whale has the highest rate of vessel strikes of any large whale, and vessel strikes are the primary conservation concern for this endangered species. Vessel strikes pose a serious threat to sea turtles and marine mammals. Multiple studies have demonstrated a correlation between vessel speed and ship strikes resulting in mortality, specifically for North Atlantic right whales.¹⁵ The rationale behind limiting ships of 65 feet or longer to speeds of 10 knots or less is supported by a large and growing body of scientific literature. With respect to speed, one study by Kite-Powell *et al.*,¹⁶ **found that slowing speeds from 20 - 25 knots to 10 knots can reduce strike risk for right whales by 40 percent**, which is a significant reduction. Also, an extensive compilation of collision data by Laist *et al.*,¹⁷ shows that serious injuries to whales rarely occur at speeds below 10 knots. Thus, reducing large vessel speeds to 10 knots or less year-round would significantly reduce potential impacts to the right whale.

Establish Appropriate Exclusion Zones during Pile Driving and High Resolution Geophysical Surveying and Require Adequate Training and Number of Observers

Noise generated during site characterization and site assessment disrupts the behaviors of multiple marine species, including the North Atlantic right whale. The following could be utilized for HRG surveys in the Massachusetts WEA: **boomer; side-scan sonar; CHIRP sub-bottom profiler; and multi-beam depth sounder.**¹⁸ In light of recent publications connecting HRG technologies to marine mammal deaths, **we implore BOEM to carefully evaluate and incorporate the available literature to minimize and mitigate the effects of these technologies** on marine mammals before authorizing their use.¹⁹

¹⁵ E.g.: (1) Silber, G.K., J. Slutsky, and S. Bettridge. 2010. Hydrodynamics of a ship/whale collision. *Journal of Experimental Marine Biology and Ecology* **391**: 10-19. (2) Kite-Powell, H.L., A. Knowlton, and M. Brown. 2007. Modeling the effect of vessel speed on Right Whale ship strike risk. *NOAA*. (3) Laist, D.W., A.R. Knowlton, J.G. Mead, A.S. Collet, and M. Podesta. 2001. Collisions between ships and whales. *Marine Mammal Science* **17**: 35-75.

¹⁶ Kite-Powell, H.L., A. Knowlton, and M. Brown. 2007. Modeling the effect of vessel speed on Right Whale ship strike risk. *NOAA*.

¹⁷ Laist, D.W., A.R. Knowlton, J.G. Mead, A.S. Collet, and M. Podesta. 2001. Collisions between ships and whales. *Marine Mammal Science* **17**: 35-75.

¹⁸ EA page 29.

¹⁹ **Southall, B. L., Rowles, T., Gulland, F., Baird, R. W., & Jepson, P. D. 2013. Final report of the Independent Scientific Review Panel investigating potential contributing factors to a 2008 mass stranding of melon headed whales (*Peponocephala electra*) in Antsohihy, Madagascar.**

Establishing an appropriate exclusion zone would help reduce such negative impacts. The size of the exclusion zone should be based on site-specific acoustic modeling performed prior to pile driving or HRG surveys.²⁰ Pre-determined, non-site specific exclusion zone radii do not fully account for variations among sites that can alter propagation of underwater sounds, which could lead to greater than expected sound propagation and consequently insufficient exclusion zones.

BOEM should specify acceptable visibility and weather conditions in which exclusion zones can be plausibly monitored. Sea conditions, fog, rain, and darkness are all factors that can hinder effective monitoring. In conjunction with the National Marine Fisheries Service (“NMFS”), BOEM should also consider developing specific criteria for the training of the observers that are used to detect marine mammals and other wildlife, and make sure that the appropriate amount of qualified observers are available to monitor exclusion zones. These observers should be kept abreast of new developments in marine mammal behavior and migratory patterns.

Use Passive Acoustic Monitoring for Real-Time Monitoring of the Exclusion Zone

Passive Acoustic Monitoring (“PAM”) is a commercially available and well-tested technology²¹ and it should be used to complement surface observation. The EA does not require its use during the monitoring of exclusion zones or surveying of marine fauna prior to and during construction and/or HRG surveys. BOEM notes that PAM may be included in any site assessment plan, but does not make use of this important technology a prerequisite for approval.²²

BOEM should ensure that the exclusion zone can be appropriately monitored at all times. For species that surface infrequently (e.g., North Atlantic right whales²³) or are difficult to spot visually when they surface, or when large areas (e.g., 7 km radius exclusion zones) must be monitored, PAM could assist in ensuring the area is clear of marine mammals prior to the inception of construction and/or HRG surveys.²⁴ In fact, PAM is already used in this way: the Northeast Gateway LNG Port operations in Massachusetts Bay use a type of fixed PAM for real-time acoustic monitoring of the presence of North Atlantic right whales.²⁵ BOEM should utilize this helpful technology more broadly in the development of offshore wind energy.

²⁰ E.g., Source Level-Transmission Loss model. Nedwell, J., and D. Howell. 2004. “A Review of Offshore Windfarm Related Underwater Noise Sources.” *Cowrie*. Oct 2004.

²¹ Bingham, G., ed. *Status and Applications of Acoustic Mitigation and Monitoring Systems for Marine Mammals: Workshop Proceedings*. BOEMRE. November 17-19, 2009. Boston, MA. Pg. 72.

²² EA page 270.

²³ Fields, Helen. “Right Whale Roadkill.” *ScienceNOW*. 2 August 2011.

<http://news.sciencemag.org/sciencenow/2011/08/right-whale-roadkill.html?ref=hp>.

²⁴ Parvin, S.J., J.R. Nedwell, and E. Harland. “Lethal and Physical Injury of Marine Mammals, and Requirements for Passive Acoustic Monitoring.” *Subacoustech*. 2 Feb 2007.

<http://www.subacoustech.com/information/downloads/reports/565R0212.pdf>.

²⁵ Bingham, G., ed. *Status and Applications of Acoustic Mitigation and Monitoring Systems for Marine Mammals: Workshop Proceedings*. BOEMRE. November 17-19, 2009. Boston, MA. Pg. 7.

Cease Pile Driving if a Marine Mammal or Sea Turtle Enters the Exclusion Zone

BOEM should not allow pile driving to continue if a marine mammal or sea turtle is sighted within the exclusion zone after pile driving has already begun. Although stopping and restarting pile driving may require pile driving to be done over a longer period of time and at increased energy levels, wildlife would likely not be affected because pile driving would stop if they re-entered the exclusion zone.

Prohibit HRG Surveys and Pile Driving at Night

In prior comments to BOEM, Oceana has repeatedly requested that BOEM prohibit seismic surveys and pile driving at night or when visibility is otherwise poor in order to ensure that marine life do not travel into the exclusion zone undetected.²⁶ Visual monitoring and the creation of an exclusion zone to avoid marine mammals, sea turtles and other marine life during HRG surveying and pile driving would be undermined if these activities were allowed at night. Nighttime visibility, even in the best lighting conditions of a full moon, is far worse than daytime visibility and this would make it difficult for observers to detect protected marine animals and shut down operations accordingly. The EA notes that right whales are “challenging to detect visually, with their black coloration, absence of a dorsal fin and at/subsurface logging behavior, and are even less observable at night.”²⁷ Site characterization and site assessment activities should include provisions that exclude pile driving and HRG surveying to be conducted at night. Prohibiting these activities during night hours would greatly minimize potential acoustic impacts on marine mammals and sea turtles at little cost to developers.

Incorporate the Most Current Acoustic Guidelines

Pile driving generates sound intensities in excess of 160 dB, which are well above levels that are known to cause harm to marine species. The finalized leases should set limits for sound intensity that can be generated during pile driving. Given that scientific understanding of acoustic effects on marine mammals and other marine life evolves over time, these limits should be based on the most current available science as it emerges. Limiting the intensity of sound generated during pile driving to a scientifically accepted threshold would avoid many potential impacts to marine life in the exclusion zone. Dozens of studies show that 160 dB is dangerous to marine mammals. In fact, on July 2, 2012, Oceana and other parties informed the BOEM of dozens of the most recent studies concerning acoustic-threshold data.²⁸ Three letters sent in 2014 from both the U.S. House of Representative and U.S. Senate urged BOEM and the Department of Interior to consider the best science available for acoustic guidelines (with respect to seismic activity, however the impacts are the same for offshore

²⁶ Comments submitted by Oceana on May 2, 2014, regarding the Environmental Assessment for Potentially Interim Policy Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf (OCS) Offshore Georgia [BOEM-2014-0010]. Pages 5-6.

²⁷ EA page 173.

²⁸ Oceana, *et al.*, Comments on the Draft PEIS for Atlantic G&G Activities at 37-45 (July 2, 2012) (attached).

wind development).^{29 30 31} In order to accurately assess the scope of marine mammal impacts, the Service must include all relevant scientific data. Reducing the amount of noise created can be accomplished by a variety of technologies, including vibratory hammers, bubble sleeves, waterless cofferdams and, where impact hammers are necessary, smaller and/or hydraulic hammers.

* * * * *

In conclusion, Oceana strongly supports the development of offshore wind in the United States, as it offers immense potential for economic growth and clean energy generation. Thus, we applaud and fully support BOEM's efforts to spur development in this nascent industry, including the preparation of the Massachusetts FSN. We are pleased that there will be multiple lease auctions in the Massachusetts WEA to ensure adequate competition. Furthermore, the multiple-factor auction format allows those developers who have proven they wish to expeditiously develop offshore wind to receive monetary credits in the auction.

To ensure the successful, responsible, and timely development of offshore wind off the Massachusetts coast, we hope BOEM will incorporate the aforementioned recommendations into site-specific plans and leases to protect marine life. Specifically, BOEM should:

- Incorporate the recommendations to protect North Atlantic right whales agreed upon by offshore wind developers, Oceana and other conservation organizations;
- Place a year-round speed limit on all vessels over 65 feet in length to 10 knots;
- Establish appropriate exclusion zones during pile driving and HRG surveys and require adequate training and number of observers;
- Use PAM for real-time monitoring in the exclusion zone;
- Cease pile driving if a marine mammal or sea turtle enter the exclusion zone;
- Prohibit pile driving at night; and
- Incorporate the most current acoustic guidelines.

We thank BOEM for the opportunity to submit these comments to guide the preparation of the upcoming FSN, site-specific plans, and leases, and we are looking forward to reading these documents upon their completion.

²⁹ Letter from Rep. Peter DeFazio, Rep. Frank Pallone, Jr., Rep. Rush Hold, Rep. Joe Carcia to Sec'y Sally Jewell, Dep't of the Interior (Jan. 8, 2014) (attached) (Letter concerning the impacts of offshore oil and gas exploration and development activities on living marine resources).

³⁰ Letter from Matthew Huelsenbeck, *et al.*, to Pres. Obama (Feb. 20, 2014) (attached) (Re: Use the Best Available Science before Permitting Seismic Surveys for Offshore Oil and Gas in the Mid- and South-Atlantic).

³¹ Letter from Sen. Cory Booker, Sen. Edward Markey, Sen. Brian Schatz, Sen. Maria Cantwell, Sen. Barbara Mikulski, Sen. Sheldon Whitehouse, Sen. Robert Menendez, Sen. Benjamine Cardin, Sen. Barbara Boxer to Sec'y Sally Jewell, Dep't of the Interior (Feb. 26, 2014) (attached) (Letter concerning the PEIS on seismic airgun testing for offshore oil and gas exploration in the Atlantic Ocean).

Re: Oceana Comments on Massachusetts Proposed Sale Notice
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Sincerely,

A handwritten signature in blue ink, appearing to read "Andrew Menaquale". The signature is fluid and cursive, with the first name "Andrew" and last name "Menaquale" clearly distinguishable.

Andrew Menaquale
Energy Analyst
Oceana