

DOER Request for Stakeholder Comment on Offshore Wind Additional Procurement Study

Respondent Information:

1. Organization names and contact information:

- **National Wildlife Federation**
Amber Hewett, hewetta@nwf.org, (978) 518-6888
- **Conservation Law Foundation**
Caitlin Peale Sloan, cpeale@clf.org, (617) 850-1770
- **Mass Audubon**
Jack Clarke, jclarke@massaudubon.org, (617) 962-5187
- **Union of Concerned Scientists**
John Rogers, jrogers@ucsusa.org, (617) 301-8055
- **Environmental League of Massachusetts**
Eric Wilkinson, ewilkinson@environmentalleague.org, (413) 387-7197
- **Sierra Club, Massachusetts Chapter**
David Zeek, davidazeek@gmail.com, (617) 423-5775
- **Mothers Out Front**
Andra Rose, amherstamr@gmail.com, (413) 687-0019
- **Association to Preserve Cape Cod**
Don Keeran, dkeeran@apcc.org, (508) 619-3185
- **Environment Massachusetts**
Ben Hellerstein, ben@environmentmassachusetts.org, (617) 747-4368
- **Acadia Center**
Deborah Donovan, ddonovan@acadiacenter.org, (617) 742-0054

2. Please briefly describe your organization and your interest in the Commonwealth's OSW procurements.

As state, regional, and national, environmental and science advocacy organizations representing hundreds of thousands of members across the Commonwealth, we submit the following responses within the context of our deep concern for the urgency of climate change. The environmental, public health, and economic impacts of our reliance on fossil fuels must drive us to advance utility-scale clean energy solutions as swiftly as responsible development allows – and offshore wind power has a significant role to play in helping us rise to that pressing challenge.

Necessity:

3. Are additional OSW procurements for long-term Power Purchase Agreements that are above and beyond those authorized by Section 83C necessary to support the development of OSW?

Yes, given the larger-scale commitments to offshore wind development from neighboring states since Massachusetts set the stage in 2016, additional procurements are necessary to support the development of a vibrant offshore wind industry in the Commonwealth. Further, given the urgency of the climate crisis and the thousands of megawatts of legacy power plants retiring or

slated for retirement across the region, Massachusetts should have an offshore wind commitment that matches the scale of the challenges before us. When ISO-NE recently studied generation mix scenarios for the New England market in 2030, the only three scenarios that were forecast to meet emissions levels required for the region by RGGI had between 2,483 MW and 5,853 MW of offshore wind nameplate capacity installed and operating by 2030.

See ISO-NE, Final 2016 Phase I Economic Study NEPOOL Scenario Analysis, at 35, 92 (Nov. 20, 2017),

https://www.iso-ne.com/static-assets/documents/2017/11/final_2016_phase1_nepool_scenario_analysis_economic_study.docx; ISO-NE, *2017 Economic Study: Exploration of Least-Cost*

Emissions-Compliant Scenarios, at 6, 13 (Oct. 29, 2018),

https://www.iso-ne.com/static-assets/documents/2018/10/2017_economic_study_final.docx.

- a. **What are the advantages and disadvantages of longer and shorter term (i.e. 10 years, 25 years) periods for Power Purchase Agreements to developers, ratepayers, or others?**

Longer-term Power Purchase Agreements provide a lower unit price as well as greater rate-stabilizing benefits, and in turn, more significant rate-reduction potential and a more effective buffer between ratepayers and the volatility of the fossil fuel market. Longer terms help developers secure the financing necessary, and at the lowest cost, to get projects built and allow those benefits to reach ratepayers.

- b. **Are there advantages or disadvantages in soliciting OSW in a stand-alone procurement – or could it compete in a broader renewable or clean energy procurement?**

At this early stage in the establishment of an offshore wind market, specific solicitations are helpful in ensuring that the Commonwealth successfully launches an industry at the scale needed to meet greenhouse gas reduction goals, and to meet system needs resulting from power plant retirements. Such a targeted commitment also provides clear signals to supply chain companies that the Commonwealth is a safe and attractive place to make large-scale investments.

4. **Are the opportunities to participate and earn revenue in the wholesale markets (e.g. Energy, Capacity, and Ancillary Services) and renewable energy certificate payments sufficient to support the development of new OSW projects? Why or why not? Are there recommended changes to the wholesale market structure or renewable energy portfolio standard that would impact your answer?**

Without comprehensive reform of ISO-NE's entire regional wholesale market system to adequately compensate renewable resources for their capacity attributes and greenhouse gas reduction capabilities, long-term contracts with developers will be necessary to ensure that offshore wind resources are built. ISO-NE has given no indication that it is willing to engage in such reform in the near to medium term, and has publicly stated that it will be working solely on market reforms focused on winter energy security for the next two or three years. In the near

term, offshore wind developers are dependent on procurement contracts. Existing wholesale market rules provide limited options for offshore wind compensation and these options are insufficient to adequately support the industry.

5. Are there other forms of financing mechanisms, such as Offshore Renewable Energy Certificates (ORECS), that could support OSW?

The New York State Energy Research and Development Authority (NYSERDA) recently conducted a comprehensive analysis of financing mechanisms for offshore wind and found some merit to the OREC idea, at least on a conceptual level; however, the significantly different context in New York (e.g. no utility procurement mandate) makes it difficult to apply the findings of NYSERDA's analysis to an evaluation of a similar approach in Massachusetts.

See New York State Energy Research and Development Authority, *Offshore Wind Policy Options Paper*, at 5-6 (Jan. 29, 2018),

<https://www.nyserdera.ny.gov/-/media/Files/Publications/Research/Biomass-Solar-Wind/Master-Plan/Offshore-Wind-Policy-Options-Paper.pdf>.

6. What are the costs and benefits of an additional OSW procurement(s) on potential pricing and other impacts on wholesale markets (e.g. Energy, Capacity, and Ancillary Services)? Please be as specific as possible as to which markets you are referring too.

a. What, if any, would be the effect on the wholesale markets caused by an additional OSW procurement(s)?

More MW of offshore wind will help mitigate wholesale electricity price volatility, especially in times when it is needed most: cold winter nights. Recent studies show that even modest amounts of offshore wind will result in hundreds of millions of dollars in energy savings and prevent thousands of tons of carbon dioxide emissions annually.

With respect to the capacity market, preliminary analysis indicates that the exclusion of 100 MW of Vineyard Wind's capacity from FCA 13 will cost New England's electric customers \$270 million in unrealized capacity payment savings.

It is important to reiterate here that absent significant market reforms, renewable resources like offshore wind will only be able to provide forward capacity market savings like these with the support of state contracts to finance construction.

See ISO-NE, *High-Level Assessment of Potential Impacts of Offshore Wind Additions to the New England Power System During the 2017-2018 Cold Spell* (Dec. 17, 2018), https://www.iso-ne.com/static-assets/documents/2018/12/2018_iso-ne_offshore_wind_assessment_mass_cec_production_estimates_12_17_2018_public.pdf (assessing, at MassCEC's request, the potential for cost and emissions savings if large-scale offshore wind had been operational during the 2017-2018 winter cold snap); ISO-NE, 2015 Economic Study Evaluation of Offshore Wind Deployment (Sept. 2, 2016), https://www.iso-ne.com/static-assets/documents/2016/09/2015_economic_study_offshore

[wind_development_final.docx](#) (finding significant potential economic and environmental benefits to New England from the addition of 1,000 MW of offshore wind); S&P Global, ISO-NE capacity auction redo still needed: Vineyard Wind (Feb. 19, 2019), <https://www.spglobal.com/platts/en/market-insights/latest-news/electric-power/021919-is-o-ne-capacity-auction-redo-still-needed-vineyard-wind>.

b. If there would be any negative effect, are there recommended solutions to mitigate the effect?

7. Would additional OSW procurement(s) incremental to procurements under Section 83C have any specific wholesale market impacts on other low/no emission resources?

Given the scales of regional generation slated for retirement and the gap remaining between our current energy profile and greenhouse gas reduction requirements, there is no shortage of need to advance all clean energy resources available to us. We believe that increased offshore wind buildout can and must coexist with the expeditious development of other clean energy options. The wholesale market impacts from additional offshore wind will be felt more acutely by older fossil and nuclear generating resources as these plants tend to be more expensive to run.

8. What are the potential pricing and compliance impacts of additional OSW procurement(s) on Renewable Energy Certificate and Clean Energy Certificate markets?

Large influxes of new offshore wind energy may lower Massachusetts Class I REC prices in the absence of higher RPS and CES targets. Massachusetts is likely best served by a diverse mix of renewables, including a large contribution from offshore wind; ensuring that offshore wind not overtake the full Renewable Portfolio Standard requirement is best done by increasing the overall RPS requirement, not limiting commitments to offshore wind. In order to ensure continued support for smaller renewable resource projects, DOER should study the interplay between the REC and CEC markets and potential additional policy options to capture the value of the environmental attributes of solar and other small-scale non-emitting renewable resources.

9. Will additional OSW procurement(s) have specific seasonal market impacts?

Yes – offshore wind power is uniquely capable of meeting the seasonal challenges specific to the needs of this region’s climate. For example, at moments of peak demand in the winter – our grid-straining cold snaps – it is particularly windy offshore. With significant offshore wind development, we will be adding consistent, reliable, clean Massachusetts power to the grid at the moments we need it most.

This phenomenon of peak coincidence could eliminate our current pattern of reliance on the dirtiest, most expensive, and least efficient resources in our mix, and the price spikes that come with them. It will also minimize or eliminate the need to invest in costly expansion of the region’s natural gas transmission infrastructure.

See, e.g., ISO-NE, High-Level Assessment of Potential Impacts of Offshore Wind Additions to the New England Power System During the 2017-2018 Cold Spell (Dec. 17, 2018), https://www.iso-ne.com/static-assets/documents/2018/12/2018_iso-ne_offshore_wind_assessment_mass_cec_production_estimates_12_17_2018_public.pdf.

10. Is an additional 1600 MW of solicitation(s) the appropriate target? Why or why not?

As environmental and science advocacy organizations, we share the position that we need to develop as much offshore wind power as possible, and as quickly as responsible development allows. We support the solicitation of an additional 1,600 MW. We also note that it falls short of realizing the Commonwealth's full and even near-term potential, and unnecessarily limits the pivotal contribution offshore wind can make to fulfilling the Commonwealth's Global Warming Solutions Act requirements. With the federal lease auction that took place in December 2018, more than 4,000 MW of new potential became available to whichever state(s) act first to harness it. In total, there is more than 8,000 MW of potential in the leased areas off of southern New England, and we are already seeing lease-holding developers submit proposals and advance contracts with Connecticut, Rhode Island, and New York. Now is the moment for Massachusetts to clarify to developers and supply chain companies just how much of the region's offshore clean energy opportunity we seek to secure.

Among businesses, large institutions such as hospitals and universities, and municipalities, there is growing interest in using power purchase agreements as a way to procure renewable electricity in order to meet their climate action targets and reduce their environmental footprint. Institutions such as Boston University and Partners HealthCare have committed to a target of 100% renewable energy, along with more than 160 major global companies, including several with a significant presence in Massachusetts. It is in the interests of the Commonwealth to encourage institutions and businesses to meet these renewable commitments with in-region resources such as offshore wind power.

The Commonwealth should consider how to structure the procurement schedule in order to allow for additional voluntary procurements by businesses, institutions, and municipalities, and encourage offshore wind developers to design and permit their projects in such a way as to allow for the installation of additional capacity to meet voluntary demand on top of the Commonwealth's procurements.

Transmission:

11. What are the advantages and disadvantages of requiring a coordinated OSW transmission network?

As states throughout the region pursue large-scale offshore wind development, the potential importance of a comprehensive transmission strategy continues to increase. Some evidence suggests that a coordinated network could lower the environmental impact and costs of transmission development relative to the current approach of allowing each successive offshore wind developer to construct its own generator lead line. The Department should incorporate into

the current analysis the work already done by MassCEC and underway in New York laying out these and other potential benefits of coordinated offshore transmission.

While the environmental impacts of any transmission approach can only be evaluated within the specific context of location and development practices, the undersigned groups believe that there is sufficient evidence of potential benefits to recommend advancing the conversation to further explore transmission strategies – both on and offshore – to support the Commonwealth’s offshore wind energy pursuits in a manner that maximizes benefits to the environment as well as to ratepayers.

See Analysis Group, Strategic Options for Investment in Transmission in Support of Offshore Wind Development in Massachusetts (Jan. 2010), <http://files.masscec.com/research/StrategicOptionsInvestmentTransmissionSupportOffshoreWindDevelopmentMassachusetts.pdf>; ESS Group, Offshore Wind Transmission Study Final Report (Sept. 2014), <http://files.masscec.com/research/MassCECOSWTransmissionStudy.pdf>.

a. If there are advantages, what would be required to accomplish this?

Based on the experience of the first 83C RFP bid evaluation process with Expandable Transmission Network (ETN) bids, it is clear that a simultaneous or even separate but parallel procurement process for generation and transmission is not feasible.

The ETN bids under the first 83C RFP pairing expandable transmission up to 1,600 MW with a maximum of 800 MW of generation were not able to meaningfully compete against the generation-only bids due to the risk of stranded costs. It was also noted in the 83C RFP review proceedings at the Department of Public Utilities that a future solicitation fully separating an expandable transmission line or network procurement from a generation procurement would likely prevent generation developers from submitting cost effective bids, or potentially any bids, due to the risk of stranded costs from transmission that is not guaranteed to exist.

Accordingly, a coordinated offshore transmission line or network would need to be financed and fully permitted, if not constructed, in advance of any procurements of generation that would depend on the transmission line or network. This in turn means that time is of the essence if Massachusetts wants to put itself in a position to reap the benefits of coordinated transmission.

In conducting the current study required by the 2018 Act to Advance Clean Energy, the Department should prioritize analysis evaluating 1) how quickly such a network could be procured, permitted, and constructed, 2) potential grid interconnection points and the environmental impact of related cable routes 3) based on that construction timeline, at what stage of the buildout of the existing federal lease areas such a network could reasonably begin to enable generation-only wind power bids, 4) potential cost scenarios for expandable transmission options compared with the cost of building out the lease

areas using only generator lead lines, and 5) cost scenarios for Massachusetts ratepayers based on financing options including a) a coordinated offshore wind transmission network procured by Massachusetts only, b) procurement by a voluntary combination of Massachusetts and other New England states, and c) financing through a regional tariff. Given both the potential large-scale benefits of a coordinated transmission approach and the multi-state nature of our transmission upgrade needs, it is important that the Department assess multiple ways in which a coordinated offshore wind transmission network could be developed and financed, weighing the possibility of a regional undertaking against the need for timely action to access those overall benefits.

b. Are there changes to the solicitation process that could accomplish this?

While the Department analyzes the potential paths forward for coordinated transmission, the ETN model used in the first 83C RFP should be abandoned. The evidence presented in the recent Section 83C contract adjudication showed that the ETN model from that RFP resulted in increased time and cost to prepare bids, increased time and complexity to evaluate the bids, and ETN bids that could not meaningfully compete against generation-only bids due to the risk of stranded costs inherent to the ETN bids.

Absent a conclusion to the Department's analysis (requested in response to Question 11.a., above) as to the most cost effective and realistic approach to coordinated transmission, which the Department should seek with all reasonable haste in order to preserve the ability to reap maximum benefits from a coordinated transmission approach, the ETN option should be omitted from near-term future solicitations.

c. Could state or regional support for a transmission system to support further offshore wind development be sufficient to finance further offshore wind development?

The organizations submitting these comments support a detailed exploration of the options for state and regional approaches to the development of transmission infrastructure for offshore wind, in particular to answer the question of how such approaches would benefit ratepayers and support the orderly deployment of significant amounts of offshore wind. Given the complexity of such an analysis, it may be necessary to undertake the work on a timeframe longer than that envisioned in Chapter 277 of the Acts of 2018.

Without a full examination of opportunities, barriers, benefits and costs, it will remain unclear what the optimal approach to transmission development might be, and the role transmission will play in achieving the rapid and cost-effective deployment of offshore wind. In addition to the recommendations contained in response 11.a, the examination will need to take into account the impacts that the studied options could have on:

- The allocation of development costs and financial and performance risks between developers of generation and transmission and utility customers;

- The ability of coastal communities, landscapes, and infrastructure to accommodate the on-shore requirements of cable landfall associated with multiple offshore wind projects;
- The capacity of the grid's existing high voltage transmission system to interconnect with and carry the increased energy deliveries from new offshore wind projects;
- The interplay between optimal project size and cable size; and
- The likelihood and timing of future onshore generation retirements.

Such a study should also rely on experiences and best practices from other regions and technologies to inform the study of approaches to transmission development. Naturally, the extensive experience in Europe deploying offshore wind under a range of approaches to transmission development will provide important lessons learned and possible best practices that could be applicable to Massachusetts' and New England's offshore wind transmission build-out.

Beyond a generator lead-line, unbundled procurement of generation and transmission, or planned offshore transmission networks, other frameworks to explore could include:

- The ability to develop transmission through ISO-NE under the FERC Order 1000 Public Policy Transmission Upgrade process where state public policy requirements are assessed for their creation of a need for new transmission; and
- Opportunities for regional coordination of transmission development with other Eastern states that have made commitments to offshore wind procurement, building on the 2017 Northeast Offshore Wind Regional Market Characterization[1] and other ongoing efforts.

After completing this analysis, the Department should make concrete recommendations to the General Court regarding the most beneficial long-term approach to offshore wind transmission for Massachusetts.

See Northeast Wind Resource Center, Northeast Offshore Wind Regional Market Characterization (Nov. 2017), <https://www.northeastwindcenter.org/resources/opportunities-barriers-shaping-offshore-Wind-market-northeastern-us>.

Other Factors that Impact Cost and Price:

12. What, if any, impact will the expiration of the federal Investment Tax Credit have on future pricing for additional OSW procurement(s)?

If the December 31, 2019 qualification deadline for the ITC is not extended at the federal level, it is reasonable to assume that bid prices will be higher than the all-in cost achieved in the first 83C RFP in the near term.

13. What is the potential for advancement of technological improvements in offshore wind sector to affect pricing for any additional OSW procurement(s)?

Offshore wind power is a booming global industry with significant, ongoing advancements in technologies and development practices that have led to massive cost reductions across the sector. For example, the current industry trend of increasing turbine size, which drives down the levelized cost of energy for wind projects, is likely to continue with turbines as large as 15 MW already in the research and development stages. However, until the next level of turbine comes to market, it is not possible to predict the exact impact of this or other advancements in development practices on pricing for specific procurement rounds.

14. What restrictions on price shall there be on any additional OSW procurements, if any? Should each successional procurement be required to reflect a price decrease?

While we recognize the appeal of the price-reduction provision included in 83C based on the earliest cost figures for the offshore wind industry in the US, we also acknowledge the need to reconsider it in light of the exceptionally low price brought forth by Vineyard Wind. The global offshore wind market is advancing so rapidly that the considerations that influenced the language signed into law in 2016 are no longer entirely applicable. Offshore wind power is far more cost-competitive than it was even just a few years ago, making mandated price reductions more difficult to achieve and arguably less needed based on current market realities. While the goal of protecting ratepayers needs to remain front-of-mind, we are increasingly confident that the highly competitive nature of the industry and the prices we are already seeing from developers – along with oversight from DOER to determine whether an individual proposal is cost-effective – can together achieve the goal inherent in the original price-reduction requirement.

Additionally, we want to see offshore wind power advance responsibly, with consideration for wildlife and our local workforce. We are concerned that too-steep price-reduction requirement – particularly given the low starting point and the expiration of the ITC it was initially based on – could put too much pressure on developers to prioritize speed and cost at the expense of these other important factors critical for ensuring public support of projects.

We support removing or re-evaluating this provision from 83C to better align with the trajectory of the industry, and replacing it with requirements for strong competition, robust transparency, and prioritization of local economic opportunities in the project selection process, to capture maximum benefits for Massachusetts ratepayers.

15. With pending retirements in New England should there be a particular focus on specific development areas and/or transmission interconnection points to relieve future reliability constraints?

Yes – communities impacted by retirements, such as Somerset, MA, and Plymouth, MA, should be prioritized for early development investments. Sites like Brayton Point are well-positioned to serve as points for interconnection, while easing some of the economic burden our energy transition has placed on the surrounding community. In 2017, environmental and science advocacy organizations joined in sending a letter to Governor Baker urging action to facilitate the

transition of the Brayton Point Power Station to a hub for offshore wind power as a way to maximize the economic benefits the resource can deliver to the Commonwealth (See Attachment A).

Economic Development and Supply Chain:

- 16. Will requiring the Distribution Companies to undertake an additional OSW solicitation of up to 1600 MW impact the development of offshore wind supply chain services in the Commonwealth? If so, what potential economic benefits to the Commonwealth may result if OSW supply chain services are located in MA?**

Other states like New York and New Jersey have declared ambitious offshore wind development targets since the Energy Diversity Act of 2016 was written, and Connecticut's legislature is currently considering policy that could exceed the Commonwealth's market. Additional offshore wind solicitations by Massachusetts will be critical to making a business case to offshore wind developers and suppliers to site supply chain facilities and headquarters in the Commonwealth. There is immense potential for rooting additional manufacturing jobs as well as other offshore wind industry-related jobs in whichever states are sending the clearest signals to the market at this pivotal time.

- 17. Are there certain services or products in the OSW supply chain that are more likely to locate in the Commonwealth than others?**

- 18. Are there actions, outside of additional OSW procurement(s), that the Commonwealth should consider to secure OSW supply chain services are located in MA? Please explain.**

We urge the Commonwealth to consider investments, ideally via public-private partnerships, in port infrastructure improvements and workforce training facilities that will entice developers and supply chain companies to do as much of their business in Massachusetts as possible.

The Commonwealth made an early decision to invest in the New Bedford Marine Commerce Terminal and establish the first port facility in the United States equipped to deploy offshore wind infrastructure. Years later, in 2016, all three of the developers holding offshore wind leases at the time signed a Letter of Intent to utilize the Terminal in development of their to-be-proposed projects. Beyond a fully state-funded approach, other states, including Connecticut and Rhode Island, have secured investment from developers to aid in preparing port facilities to be able to meet the needs of a local offshore wind industry. As developers and manufacturers determine where and how to launch this new industry for the region, there is immense value in being thoughtful and proactive about all the ways Massachusetts can contribute and reap enduring rewards.

Regional Coordination:

- 19. Should Massachusetts coordinate with other states in any future solicitations of OSW?**

While there are potential advantages to coordinating with other states and the economies of scale that it can garner, Massachusetts should consider coordination only if it does not delay the subsequent solicitation. The collaboration between Massachusetts, Connecticut, and Rhode Island

coming out of the first 83C RFP contrasted with the protracted time to undertake the prior three-state clean energy resource RFP supports an approach of Massachusetts leadership and voluntary subsequent collaboration with other states. A coordinated regional procurement designed to build upon prior experiences and avoid unnecessary delay could send an invaluable signal to the market that New England is indeed the now and future home for offshore wind development on the east coast.

Please see also the points made about the opportunities for coordination regarding transmission in response to question 11.c.

20. What are the advantages or disadvantages to coordinating?

Collaboration with other New England states could provide Massachusetts with greater cost-reduction benefits, by demonstrating a larger development pipeline to industry leaders. Additionally, by working together, New England states can better keep pace with the significant commitments articulated by New York and New Jersey, which will be important as manufacturing and supply chain companies consider where to invest.

Coordination does carry the risk of delaying progress, which is why we advocate for such an approach only as a complement to the leadership and pace Massachusetts has already established.

Other:

21. Please provide any other comments pertain to the necessity, benefits and cost of additional OSW procurement(s).

As the Department considers future solicitations, we urge the incorporation of stronger and more clearly articulated environmental protection criteria by which all bids will be evaluated. Setting baseline standards informed by current science and best management practices will help to ensure that in this highly competitive process, bidders do not need to weigh *whether* to employ an effective monitoring or mitigation technique, for example, but rather how to check that important box most cost-effectively.

For example, in the case of Vineyard Wind's 800 MW project, Conservation Law Foundation, Natural Resources Defense Council, and the National Wildlife Federation worked directly with the developer to negotiate a set of science-based measures to ensure the protection of the critically endangered North Atlantic right whale throughout all stages of development. Fortunately, the parties were able to reach agreement on needed protections for right whales, including seasonal restrictions on pile-driving, use of noise-reduction technology when pile-driving occurs, enhanced monitoring protocols, and vessel speed restrictions (See Attachment B).

In addition to concern for a species in grave peril, the referenced right whale protection agreement also reflects the only charted pathway to success for offshore wind projects in the United States to date (a similar agreement was negotiated for the Block Island Wind Farm). With only about 400 North Atlantic right whales alive today, it is imperative that all future developers follow Vineyard Wind's lead and commit to effectively protect this species and other vulnerable wildlife. Ideally, adhering to current, commercially feasible best management practices, would

simply be mandatory for entry into Massachusetts's RFPs. This would level the playing field, increase efficiency in evaluation, and eliminate potential significant barriers to a selected project's ability to secure the public support necessary successfully navigate state and federal review processes.

ATTACHMENT A



October 12, 2017

Governor Charles D. Baker
Massachusetts State House
Office of the Governor
Room 280
Boston, MA 02133

Dear Governor Baker,

On behalf of the undersigned organizations and our thousands of members and supporters across the Commonwealth, we thank you for positioning Massachusetts to be a national leader on offshore wind power and applaud your Administration's work to issue the largest-ever Request for Proposals (RFP) for offshore wind power in the U.S.

In that spirit, we write to encourage continued action to jumpstart the development of a local supply chain for offshore wind power to ensure that the Commonwealth realizes the industry's promise of long-term job creation and stays at the forefront of America's energy transition.

As the first phase of the Massachusetts Clean Energy Center's (MassCEC) *Offshore Wind Ports and Infrastructure Assessment* shows, we have many assets across the Commonwealth that can support offshore wind power manufacturing, assembly, deployment, and training – and now is the moment to ensure these sites are prepared to do so. First-mover economic advantages in this new industry are still within reach, provided Massachusetts acts swiftly and strategically. We believe Brayton Point Power Station in Somerset, recently retired, decommissioned, and posted for sale, is a particularly important place to start.

Brayton Point is ideally positioned to bring offshore wind power into the grid, and the site is capable of far more. The uniqueness of 300 waterfront acres in close proximity to offshore wind lease areas – zoned for industrial use, with strong local public and political support for development – cannot be overstated. To let this site slip to other uses would be to pass a major economic opportunity on to neighboring states. Offshore wind power momentum is quickly building throughout the northeast. With the Commonwealth leading the process to jumpstart both public and private investment, Brayton Point promises to play a key role in creating a vibrant local offshore wind industry.

The closure of Massachusetts's last coal-fired power plant underscores the opportunity and urgency underpinning the Commonwealth's transition to clean energy. The economic challenges now facing Somerset and its local workforce are significant and deserve attention. With visionary leadership and Massachusetts

ingenuity, the site can serve as a world-class clean energy hub that provides not only an interconnection point and deployment area for offshore wind, but also a large site for other clean energy innovations, such as energy storage and solar power – all while supporting municipalities and workers displaced from the fossil fuel industry.

To maximize the economic benefits offshore wind power can offer the Commonwealth, we urge you to take action to secure and facilitate the transition of Brayton Point to a hub for offshore wind power and other clean energy innovation. Leadership from the Baker Administration – whether through a convening role, facilitation of public-private partnership opportunities, or an outright lease or purchase of the land – would provide an immense boost for the Commonwealth’s nascent offshore wind industry at this key moment. We would be eager to discuss what roles the Administration might consider playing at this critical juncture, as part of the overall strategy to maximize the job creation and broader economic development benefits this new industry can bring to the South Coast and communities across the Commonwealth.

Our organizations commend your strong leadership on offshore wind power to date, and we encourage you to keep pushing Massachusetts forward as we confront our most pressing energy and environmental challenges. Thank you for your leadership and your consideration.

Sincerely,

Catherine Bowes, Senior Manager
National Wildlife Federation

Carol Oldham, Executive Director
Massachusetts Climate Action Network

Eric Wilkinson, Energy & Climate Policy Director
Environmental League of Massachusetts

Emily Norton, Massachusetts Chapter Director
Sierra Club

Jack Clarke, Director of Public Policy
Mass Audubon

Cindy Luppi, New England Director
Clean Water Action

John Rogers, Senior Energy Analyst
Union of Concerned Scientists

Craig Altemose, Executive Director
350 Mass for a Better Future

Ben Hellerstein, State Director
Environment Massachusetts

Pauline Rodrigues, Steering Committee
Coalition for Clean Air South Coast

Sylvia Broude, Executive Director
Toxics Action Center

cc:

Karyn Polito, Lieutenant Governor
Matthew Beaton, Secretary of Energy and Environmental
Affairs Jay Ash, Secretary of Housing and Economic
Development Patrick Woodcock, Assistant Secretary of Energy
Judith Judson, Department of Energy Resources Commissioner
Stephen Pike, Massachusetts Clean Energy Center CEO
Patricia Haddad, Speaker Pro Tempore, Massachusetts House of
Representatives Jeffrey Grybowski, Chief Executive Officer, Deepwater Wind
Erich Stephens, Chief Executive Officer, Vineyard Wind
Thomas Brostrøm, President, North America, DONG Energy Wind Power

ATTACHMENT B



**Vineyard Wind – NGO Agreement
January 22, 2019**

This Agreement dated as of January 22, 2019, is made by and between VINEYARD WIND, LLC (“Vineyard Wind”), which has its principal place of business at Suite 510, Bank Plaza, 700 Pleasant Street, New Bedford, MA 02740, the NATIONAL WILDLIFE FEDERATION, the NATURAL RESOURCES DEFENSE COUNCIL, and the CONSERVATION LAW FOUNDATION (the “NGOs”) (collectively the “Parties”).

WHEREAS, the Parties are united in the belief that responsibly developed offshore wind power has a major role to play in America’s energy future;

WHEREAS, the Parties recognize that wind energy does not have the negative climate effects of carbon emissions from other generation sources, and wind power thus helps to ameliorate impacts like ocean acidification, loss of sea ice, sea level rise, more extreme weather, and many other climate effects;

WHEREAS, the Parties are committed to working together to ensure that the development of much-needed wind electricity generation capacity off the nation’s coasts will occur in a manner that avoids, minimizes, and mitigates adverse impacts on the health of our coastal and marine wildlife;

WHEREAS, the development of offshore wind energy provides a unique opportunity for offshore wind developers to collaborate with academic research institutions, government, environmental organizations, ocean user groups and other stakeholders to advance scientific research that enhances protections for the critically endangered North Atlantic right whale, including research on the effects, if any, of wind farm operations on right whale distribution and habitat use;

WHEREAS, Vineyard Wind is committed to developing offshore wind power projects in the U.S. with robust standards of environmental protection during pre-development, construction, and operations and maintenance activities, while making a meaningful contribution to science that can support the responsible development of America’s vast offshore wind resources;

WHEREAS, the protection of the North Atlantic right whale is a top priority, the Parties recognize and agree that protective actions set forth herein must be done in a manner that ensures human health and safety when working in the offshore environment;

WHEREAS, while this Agreement pertains to protections for the North Atlantic right whale specifically, the Parties agree that the measures set forth herein may also provide additional protections to other marine mammals and protected species;

WHEREAS, this agreement is intended to serve as a model for similar agreements pertaining to offshore wind projects along the East Coast;

WHEREAS, the Parties agree that the commitments made herein apply specifically and solely to Vineyard Wind’s first 800 MW project located in the northern portion of the lease area OCS-A-501 (the “Project Area”), and as more fully described in the Construction and Operations Plan submitted to the Bureau of Ocean Energy Management (“BOEM”) dated December 19, 2017, as supplemented thereafter (the “Project”).

NOW THEREFORE, in consideration of the foregoing the Parties agree as follows:

I. Protective Measures for North Atlantic Right Whales

Vineyard Wind agrees to implement the following measures for responsible offshore wind development in constructing and operating the Project.

A. Construction Activities

Table 1. Seasonal Restrictions on Pile Driving Activities

Timeframe	Mitigation Protocol
Red Period: January 1 – April 30	No pile driving
Yellow Period: November 1 – December 31; May 1 – 14	Enhanced mitigation protocol required
Green Period: May 15 – October 31	Comprehensive monitoring / clearance zone protocol required

1. Red Period: No Pile Driving

During this period of most likely presence of North Atlantic right whales, as specified in Table 1, no pile driving shall occur.

2. Yellow Period: Enhanced Mitigation Protocol for Pile Driving

During the times of likely presence of North Atlantic right whales, as specified in Table 1, an Enhanced Mitigation Protocol will be implemented during each day that pile driving is scheduled to take place. This will include:

- a) Pile driving shall not be initiated at night or when the clearance zone cannot be visually monitored, as determined by the lead Protected Species Observer (hereafter, “PSO”)¹ on duty. Pile driving may continue after dark only if the action began during the day and must proceed for human safety or installation feasibility² reasons;
- b) A clearance zone for North Atlantic right whales shall extend 10,000 meters in all directions from the center of the pile. Pile driving activities shall not be initiated when there is either a visual observation or acoustic detection of one or more North Atlantic right whales within the clearance zone through (i.), (ii.), or (iii.) of this section, and shall be shut-down under either of these circumstances unless it must proceed for human safety or installation feasibility reasons.
 - i. Real-time passive acoustic monitoring (“PAM”)³, assuming a detection range of 10,000 meters, shall be undertaken from a vessel other than a pile driving vessel, or from a stationary unit, to avoid the hydrophone being masked by the pile driving vessel or development-related noise and to ensure that the clearance zone is clear of North Atlantic right whales. PAM shall begin at least 60 minutes prior to commencement of pile driving and shall be conducted throughout the time of pile driving activity; and
 - ii. There shall be vessel-based PSOs stationed at the pile driving site. There shall be a minimum of four PSOs following a two-on, two-off rotation, each responsible for scanning no more than 180° per pile driving event. Observation shall begin at least 60 minutes prior to the commencement of pile driving and shall be conducted throughout the time of pile driving activity; and
 - iii. Between May 1 – 14, a track-line survey fully covering the clearance zone to detect the presence of North Atlantic right whales must be completed prior to commencement of pile driving using at least one of the following methods:

¹ PSO refers to an individual with current National Marine Fisheries Service (“NMFS”) certification as a Protected Species Observer.

² Installation feasibility refers to ensuring that the pile installation event results in a usable foundation for the wind turbine (e.g., installed to the target penetration depth without refusal and with a horizontal foundation/tower interface flange). In the instance where pile driving is already started and a PSO recommends pile driving be halted, the lead engineer on duty will evaluate the following: 1) Use the site-specific soil data and the real-time hammer log information to judge whether a stoppage would risk causing piling refusal at re-start of piling; and 2) Check that the pile penetration is deep enough to secure pile stability in the interim situation, taking into account weather statistics for the relevant season and the current weather forecast. Determinations by the lead engineer on duty will be made for each pile as the installation progresses and not for the site as a whole. This information will be included in the reporting for the Project.

³ Throughout this agreement “PAM” refers to a real-time passive acoustic monitoring system, with equipment bandwidth sufficient to detect the presence of vocalizing North Atlantic right whales.

- An aerial survey, weather permitting (based on safe flying conditions), conducted once the lead aerial observer⁴ determines adequate visibility based on standardized environmental parameters (*e.g.*, glare, sea state, wind speed, etc.); or
 - A vessel-based survey carried out by PSOs conducted during daylight hours.
- c) Pile driving may resume upon confirmation that all North Atlantic right whales have departed the clearance zone:
- i. May 1 – 14: after one day of monitoring using methods described in (b.i.), (b.ii.), and (b.iii.) of this section.
 - ii. November 1 – December 31: methods listed under (b.i.) and (b.ii.) of this section may be used by the lead PSO on duty to confirm that the whales have departed the 10,000 meter zone; if so, piling may commence following observance of the clearance zone monitoring protocol described in (b.i.) and (b.ii.).

3. Green Period: Comprehensive Monitoring / Clearance Zone Protocol for Pile Driving

During this period of less likely presence of North Atlantic right whales, as specified in Table 1, a Comprehensive Monitoring / Clearance Zone Protocol will be implemented during each day that pile driving is scheduled to take place. This will include:

- a) Pile driving shall not be initiated at night or when the clearance zone cannot be visually monitored, as determined by the lead PSO on duty. Pile driving may continue after dark only if the action began during the day and must proceed for human safety or installation feasibility reasons; and
- b) A clearance zone for North Atlantic right whales shall extend a minimum of 1,000 meters in all directions from the center of the pile. Pile driving activities shall not be initiated when there is either the visual observation or acoustic detection of one or more North Atlantic right whales within the clearance zone through (i.) and (ii.) of this section and shall be shut down under either of these circumstances unless it must proceed for human safety or installation feasibility reasons. If a shut-down is implemented, pile driving may resume upon confirmation that all North Atlantic right whales have departed the clearance zone after 60 minutes of monitoring through (i.) and (ii.) of this section.

⁴ The lead aerial observer shall be selected from a roster of qualified lead aerial observers who are available for duty with 12 hours' notice. This roster to be provided by either the New England Aquarium, the Center for Coastal Studies, National Oceanic and Atmospheric Administration ("NOAA"), or other organizations recommended by the organizations listed in this sentence. The Project will use only observers from this roster to the extent they are available at the time needed to perform the monitoring.

- i. Real-time PAM will be implemented at least 60 minutes prior to pile driving. PAM will be undertaken from a vessel other than the pile driving vessel, or from a stationary unit, to avoid the hydrophone being masked by the pile driving or other development-related noise; and
- ii. There shall be a minimum of four PSOs stationed at the pile driving site, following a two-on, two-off rotation, each responsible for scanning no more than 180° per pile driving event. Observation will begin at least 60 minutes prior to the commencement of pile driving and shall be conducted throughout the period of pile driving activity.

4. Installation of Jacket Foundations

No more than two jacket foundations will be installed.

B. Geophysical Surveys During Construction and Post-Construction

This section does not refer to any geophysical surveys carried out as part of site assessment and characterization (“SAC”) stage of offshore wind development. The Parties believe further discussion is necessary to agree upon feasible protocols for SAC surveys that would allow Vineyard Wind to meet BOEM geophysical survey requirements.

Table 2. Seasonal Restrictions on Geophysical Surveys During Construction and Post-Construction

Timeframe	Mitigation Protocol
Red Period: January 1 – May 14	No geophysical surveys with RMS sound pressure levels > 180 dB re 1 uPa at 1 meter for equipment that operates between 7 Hz and 35 kHz unless with Enhanced Mitigation Protocol
Green Period: May 15 – December 31	Comprehensive monitoring / clearance zone protocol required

1. Red Period: No Surveys or Surveys with Enhanced Mitigation Protocol

During this period, as specified in Table 2, no surveys with RMS sound pressure levels > 180 dB re 1 uPa at 1 meter for equipment that operates between 7 Hz and 35 kHz shall occur. An exception can be made for infrequent geophysical surveys that are essential during the construction and micro-siting of the Project to ensure proper installation or maintenance of the Project post-construction. In these instances, the following enhanced mitigation protocol shall be implemented:

- a) A clearance zone for North Atlantic right whales shall extend 1,000 meters in all directions from the survey vessel;

- b) Surveys shall not be initiated at night or when there is either a visual observation or an acoustic detection (confirmed by visual observation) of one or more North Atlantic right whales within the clearance zone and shall be shut down under either of these circumstances. After daylight hours, surveys shall be shut down following an acoustic detection only. Observation and PAM shall begin at least 60 minutes prior to commencement of the survey and shall be conducted throughout the period of the survey activity. Surveying may resume upon confirmation that all North Atlantic right whales have departed the clearance zone after 60 minutes of both visual and acoustic monitoring; and
 - i. Real-time PAM shall be undertaken in a manner that avoids masking of the North Atlantic right whale vocalizations by vessel noise, including use of a system that is independent from the survey vessel if necessary; and
 - ii. There shall be a minimum of four PSOs following a two-on, two-off rotation, each responsible for scanning no more than 180°.
- c) Survey equipment will commence following a ramp-up procedure and will be operated at the lowest source level feasible to meet survey requirements.

2. Green Period: Comprehensive Monitoring / Clearance Zone Protocol for Surveys

During this period, as specified in Table 2, a Comprehensive Monitoring/ Clearance Zone Protocol will be implemented during all surveys with RMS sound pressure levels > 180 dB re 1 uPa at 1 meter for equipment that operates between 7 Hz and 35 kHz. This will include:

- a) A clearance zone for North Atlantic right whales shall extend 500 meters in all directions from the survey vessel and, to the extent feasible, shall be extended to 1,000 meters;
- b) Surveys shall not be initiated when there is either a visual observation or an acoustic detection of one or more North Atlantic right whales within the clearance zone and shall be shut down under either of these circumstances. After daylight hours, surveys shall be shut down following an acoustic detection only. Visual and acoustic surveys shall begin at least 30 minutes prior to commencement of survey activity and shall be conducted throughout the period of the activity. Surveying may resume upon confirmation that all North Atlantic right whales have departed the clearance zone after 30 minutes of visual or acoustic monitoring; and
 - i. Real-time PAM shall be undertaken in a manner that avoids masking of the North Atlantic right whale vocalizations by vessel noise, including use of a system that is independent from the survey vessel if necessary; and

- ii. The clearance zone shall be monitored by at least one PSO and at least two PSOs if feasible.
- c) Survey equipment will commence following a ramp-up procedure and will be operated at the lowest source level feasible to meet survey requirements.

C. Vessel Speed Restrictions

All Project-associated vessels shall adhere to the following speed restrictions:

1. A mandatory speed restriction of 10 knots shall be observed within Dynamic Management Areas (“DMAs”) established by National Oceanic and Atmospheric Administration (“NOAA”) Fisheries, with the exception of crew transfer vessels.⁵
2. A mandatory speed restriction of 10 knots shall be observed within DMAs established by NOAA Fisheries by crew transfer vessels, unless the following procedures result in confirmation that the North Atlantic right whales are clear of the transit route and Project Area for two consecutive days:
 - (a) Vessel based surveys carried out by PSOs conducted during daylight hours and real-time PAM shall be undertaken, in a manner that avoids masking of the North Atlantic right whale vocalizations by vessel noise; or
 - (b) An aerial survey, weather permitting (based on safe flying conditions), conducted once the lead aerial observer⁶ determines adequate visibility based on standardized environmental parameters (*e.g.*, glare, sea state, wind speed, etc.) and real-time PAM shall be undertaken, when feasible, in a manner that avoids masking of the North Atlantic right whale vocalizations by vessel noise.

⁵ A crew transfer vessel is a vessel whose principle purpose is to transfer technicians who work offshore, and the supplies and small-scale components used by these technicians, to and from a port facility and their offshore work location.

⁶ The lead aerial observer shall be selected from a roster of qualified lead aerial observers who are available for duty with 12 hours’ notice. This roster to be provided by either the New England Aquarium, the Center for Coastal Studies, NOAA, or other organizations recommended by the organizations listed in this sentence. The Project will use only observers from this roster to the extent they are available at the time needed to perform the monitoring.

- (c) Following clearance from C. 2. (a.) and (b.), vessel transits conducted within a DMA will employ at least two observers⁷ aboard the vessel to visually monitor for North Atlantic right whales. If a North Atlantic right whale is spotted within or approaching the transit route, vessels shall operate at less than 10 knots until the procedures in C. 2. (a.) and (b.) result in clearance of the transit route for two consecutive days.

3. From November 1 through May 14:

- (a) A 10-knot speed restriction shall be observed by all vessels, with the exception of crew transfer vessels operating within and transiting to/from the lease area and vessels operating in Nantucket Sound (which has not been demonstrated by best available science to provide consistent habitat for North Atlantic right whales).
- (b) A 10-knot speed restriction shall be observed by crew transfer vessels operating within and transiting to/from the Project Area (except while in Nantucket Sound, which has not been demonstrated by best available science to provide consistent habitat for North Atlantic right whales) unless the following measures are in place:
 - i. At least one observer,⁸ and two when personnel are available, aboard the vessel to visually monitor for North Atlantic right whales; and
 - ii. Real-time PAM shall be undertaken in a manner that avoids masking of the North Atlantic right whale vocalizations by vessel noise.
 - iii. If a North Atlantic right whale is detected as a result of the monitoring measures identified in (i.) and/or (ii.) of this section, a 10-knot speed restriction shall be in effect for the remainder of the day.
- (c) To the extent that a DMA occurs between November 1-May 14 the provisions in C. 1. and 2. apply.

D. Reporting

Vineyard Wind commits to report all visual observations and acoustic detections of vocalizing North Atlantic right whales to the National Marine Fisheries Service (“NMFS”) or the Coast Guard within two hours of occurrence when feasible and no later than the end of their shift.

⁷ During construction the observers shall be NMFS certified PSOs. During Project operations and maintenance, the observers shall have North Atlantic right whale observer training provided by a company utilized by NMFS for PSO training or recommended by the organizations listed in footnote 6. Two individuals shall be designated during each vessel trip to conduct monitoring.

⁸ See footnote 7.

E. Underwater Noise Reduction

Vineyard Wind is committed to employing technically and commercially feasible noise reduction and attenuation measures that minimizes impacts to North Atlantic right whales and other high-priority species. Vineyard Wind will implement attenuation mitigation to reduce sound levels by a target of 12 dB. A noise attenuation technology will be implemented (*e.g.*, Noise Mitigation System [NMS], Hydro-sound Damper [HSD], Noise Abatement System [AdBm], bubble curtain, or similar), and a second back-up attenuation technology (*e.g.*, bubble curtain or similar) will be on-hand, to be used if needed given results of field verification. For the Project, Vineyard Wind will not request Level A takes of a North Atlantic Right Whale. Vineyard Wind will inform and receive input from the other Parties as it identifies noise attenuation measures and technologies to be used for the Project.

F. Additional Mitigation Strategies

In addition to the above measures designed to avoid and minimize impacts to North Atlantic right whales, Vineyard Wind commits to considering other mitigation approaches aimed at overall species protection.

II. Commitment to Collaborative Science

Vineyard Wind has made a \$3 million commitment to develop and deploy technologies that ensure heightened protections for North Atlantic right whales and other marine mammals as the U.S. offshore wind industry continues to grow. Vineyard Wind commits to implement the following principles when undertaking marine science and science-based conservation efforts:

- A.** Plan and conduct science and science-based conservation efforts in a collaborative and transparent manner, utilizing recognized marine experts, engaging relevant stakeholders, and making results publicly available;
- B.** Contribute to the field of marine science and make efforts to address the priorities defined by regional and state ocean planning efforts; and
- C.** Advance understanding of the effects of offshore wind development on marine and coastal resources, the effectiveness of mitigation measures (*e.g.*, noise attenuation, thermal detection), and strategies to reduce other stressors facing affected species (*e.g.*, incidental fishing gear entanglement reduction), such as the North Atlantic right whale.

III. Inclusion of Protective Measures in Agency Submittals

Where Vineyard Wind seeks state and federal authorizations to conduct Project activities that may potentially affect the North Atlantic right whale, Vineyard Wind agrees to propose mitigation strategies

consistent with the protective measures set forth herein as they relate to the activity for which authorization is sought. Vineyard Wind will also inform the relevant state and federal agencies of Vineyard Wind's voluntary commitments under this Agreement. To the extent that a state or federal agency declines to adopt, for regulatory purposes, a protective measure specified herein, Vineyard Wind will nevertheless implement the measure provided it does not conflict with regulatory requirements.

IV. Modeling and Adaptive Management

The intent of this agreement is to minimize disruption of normal feeding, breeding and migratory behaviors and prevent injury to right whales. The mitigation measures of this Agreement aim to lower risk from injury to a level approaching zero and to reduce other effects caused by marine noise significantly below that estimated in BOEM's December 2018 Draft Environmental Impact Statement ("DEIS") for Vineyard Wind. The Parties' expectation is that the mitigation measures included in this agreement will meet these goals. To confirm this before construction, Vineyard Wind agrees to re-run and share with the Parties its piling noise exposure model to incorporate the execution of mitigation measures in this Agreement and the Project parameters (*e.g.*, number of monopiles, number of jackets) planned to actually be built (as opposed to the permitting envelope analyzed in the DEIS). Should the revised modeling not demonstrate that impacts from construction are reduced to the levels described in this paragraph, the Parties will consider additional mitigation measures.

While this Agreement applies only to Vineyard Wind's 800 MW project located in the northern portion of the lease area OCS-A-501, the Parties recognize that Vineyard Wind intends to propose future projects. In a good faith effort to continue to work collaboratively and evaluate lessons learned from the Project subject to this Agreement, every two years, or if one of the Parties so requests, the Parties agree to review the scientific data on the occurrence, abundance, habitat use, and conservation status of North Atlantic right whales, particularly in the vicinity of the Project Area, along with any other relevant data, including information on new noise attenuation and monitoring technologies or practices that have become available. This review will inform future projects and agreements between the Parties. To the extent that new protective measures are identified relevant to this Project, Vineyard Wind agrees to evaluate their technical and commercial feasibility and implement them if appropriate.

V. Dispute Resolution


In the event of a dispute among the Parties concerning implementation of or compliance with any aspect of this Agreement, the initiating Party or Parties shall provide the other Party or Parties with a written notice outlining the nature of the dispute and the remedy that is sought. The Parties shall meet and confer, either in person or over the telephone, to work in good faith to attempt to resolve the dispute, including by modification of the agreement if all Parties agree. If agreement on the appropriate resolution of the dispute cannot be reached, the Parties reserve their right to withdraw from the agreement as a last resort.

VI. Term of Agreement

The Parties agree that the protective measures set forth herein will remain in place for five years unless extended or modified by mutual agreement of the Parties.

[SIGNATURE PAGE TO FOLLOW]

Vineyard Wind, LLC

By: 

Name: Erich Stephens
Chief Development Officer

Date: January 22, 2019

Natural Resources Defense Council

By: 

Name: Katherine Kennedy
Senior Director, Climate & Clean Energy
Program

Date: January 22, 2019

National Wildlife Federation

By: 

Name: Collin O'Mara
President & Chief Executive Officer

Date: January 22, 2019
NWF ID: 1901-041

Conservation Law Foundation

By: 

Name: Priscilla Brooks, Ph.D.
Vice President and Director of Ocean
Conservation

Date: January 22, 2019