



*Ocean Advocacy
Since 1984*

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July 3, 2023

Chief, Environmental Branch for Renewable Energy
Office of Renewable Energy Programs
Bureau of Ocean Energy Management
45600 Woodland Road
Sterling, Virginia 20166

Re: Draft Environmental Impact Statement for Atlantic Shores South Offshore Wind Projects (Docket No. BOEM-2023-0030)

Attachment (1): Clean Ocean Action Petition signatures

Dear Chief,

Clean Ocean Action (“COA”) submits the following comments to the Bureau of Ocean Energy Management (BOEM) regarding the Draft Environmental Impact Statement (“DEIS”) for Atlantic Shores South Offshore Wind Projects (“Projects”) proposed by Atlantic Shores Offshore Wind Project 1, LLC and Atlantic Shores Offshore Wind Project 2, LLC (Docket No. BOEM-2023-0030). The projects are a joint venture partnership between Shell New Energies US LLC and EDF-RE Offshore Development, LLC (a subsidiary of EDF Renewables North America). These comments are in addition to those already provided by representatives of Clean Ocean Action at the virtual public meetings held on June 26, 2023, and 28, 2023, as well as in other written submissions made to the federal docket.

Clean Ocean Action is a regional, broad-based coalition of conservation, environmental, fishing, boating, diving, student, surfing, women’s, business, civic and community groups with a mission to protect and enhance the water quality of the marine waters off the New Jersey/New York coast. For over 37 years, COA has been the leading coalition successfully campaigning to improve the waters in the region known as the New York/New Jersey Bight (hereafter, “the NY/NJ Bight”). These shared waters have a long history. COA’s campaigns have ended ocean dumping, resulting in the closing of eight disposal sites, blocked five offshore liquefied natural gas export/import facilities, and prevented commercial seafloor strip-mining for aggregate, offshore oil and gas drilling proposals and associated seismic activities, and other industrialization activities that threaten the marine ecosystem. Thus, COA speaks from this extensive experience and commitment to the region to protect the ocean.

The Proposed Action under review is for Atlantic Shores Offshore Wind Project 1, LLC and Atlantic Shores Offshore Wind Project 2, LLC (“the Applicants”) to build two electrically distinct wind energy generation facilities and associated export cables, known as “Atlantic

Shores South,” located approximately 8.7 miles off the coast of southern New Jersey (“NJ”) in a 102,124-acre federal offshore lease area. The DEIS assesses “the potential impacts on physical, biological, socioeconomic, and cultural resources that could result from the Projects’ construction and installation, operations and maintenance (O&M), and conceptual decommissioning.”¹ According to the Federal Register Notice announcing the availability of the DEIS for Atlantic Shores South:

The Project would comprise up to 200 total wind turbine generators (WTGs) (between 105 and 136 WTGs for Project 1 and between 64 and 95 WTGs for Project 2), up to 10 offshore substations (up to 5 in each project), 1 permanent meteorological (met) tower, up to 4 temporary meteorological and oceanographic (metocean) buoys (1 met tower and up to 3 metocean buoys in Project 1 and 1 metocean buoy in Project 2), inter-array and inter-link cables, up to 2 onshore substations, 1 operations and maintenance facility, and up to 8 transmission cables making landfall at up to 2 New Jersey locations: the Atlantic County landfall site in Atlantic City, New Jersey, or the Monmouth County landfall site in Sea Girt, New Jersey, or both. Project 1 proposes to produce 1,510 MW. The MW for Project 2 has not been determined as Atlantic Shores is still seeking an offtake power agreement for Project 2.²

In addition, the Proposed Action includes:

the installation of up to 547 miles (880 kilometers) of interarray cables, 37 miles (60 kilometers) of interlink cables, and 441 miles (710 kilometers) of export cables between 2025 and 2027. The Proposed Action also includes 30 years of O&M over its commercial lifespan and decommissioning activities at the end of commercial life.³

Following the review of the Applicants’ DEIS and the Final EIS for Atlantic Shores South, BOEM will determine whether to approve, approve with modifications, or disapprove the Applicants’ Construction and Operations Plans (“COP”) for the two massive OSW projects.

The EIS process is critical as the Proposed Action has a litany of expected impacts that are germane to COA’s interests. The expected impacts include, without limitation:

Air quality, water quality, bats, benthic resources, invertebrates, essential fish habitat, invertebrates, finfish, birds, marine mammals, terrestrial and coastal habitats and fauna, sea turtles, wetlands and other waters of the United States, commercial fisheries and for-hire recreational fishing, cultural resources, demographics, employment, economics, environmental justice, land use and

¹ Bureau of Ocean Energy Management, “[Atlantic Shores Offshore Wind South Draft Environmental Impact Statement](#),” BOEM 2023-0029 Docket Number: BOEM-2023-0030, May 2023 Volume 1: Chapters 1-4 , page ES-1.

² Federal Register, “[Notice of Availability of a Draft Environmental Impact Statement for Atlantic Shores Offshore Wind Project 1, LLC and Atlantic Shores Offshore Wind Project 2, LLC's Proposed Wind Energy Facilities Offshore New Jersey](#),” Vol. 88, No. 97, Friday, May 19, 2023, page 32242.

³ Bureau of Ocean Energy Management, “[Atlantic Shores Offshore Wind South Draft Environmental Impact Statement](#),” BOEM 2023-0029 Docket Number: BOEM-2023-0030, May 2023 Volume 1: Chapters 1-4 , page ES-8.

*coastal infrastructure, navigation and vessel traffic, other marine uses (including marine minerals, military use, aviation, scientific research, and surveys), and recreation and tourism.*⁴

Despite the progress made in improving the ocean off the NY/NJ coast, the ocean remains threatened, especially due to climate change. The ocean continually and naturally regulates climate change impacts after enduring years of industrialization and its impacts. Climate change is an existential threat, and all efforts must be made to reduce the causes, particularly the reduction of carbon emissions. While offshore wind energy development represents a long overdue progression from fossil fuels, the Proposed Action poses many risks to the marine ecosystem and threatens many serious consequences that must be carefully and diligently reviewed through the EIS process. **To be clear from the outset, COA supports responsible and reasonable offshore wind energy development, including a comprehensive, independent pilot project to determine the impacts of an offshore wind project from preconstruction, construction, operation, management, and decommissioning, as well as the associated onshore infrastructure support.** However, this new, uncertain industry requires additional investigation of areas with a focus on comprehensive, inclusive assessments of all offshore and onshore wind energy life-cycle impacts. Clean Ocean Action has concerns and questions about the Atlantic Shores projects and submits the following comments outlining deficiencies, shortcomings, inconsistencies, and concerns for impacts.

That said, the DEIS is woefully inadequate, incomplete, misleading, and suggests bias toward Atlantic Shores South. It must be withdrawn, completed, and re-issued for public review. Moreover, BOEM shows a lack of due process and transparency in providing only the minimum 45 days of public comment, undermining public review as described in previous letters. The redrafting and release for public review of the DEIS would allow full disclosure of the beneficial and adverse impacts of the projects and allow meaningful public comment in compliance with NEPA and in the spirit of good governance.

Purpose and Need

Clean Ocean Action recognizes the climate change crisis and the need to take swift and immediate solutions to reduce Greenhouse Gas (“GHG”) emissions. However, offshore wind appears to be neither immediate nor a reduction of GHG emissions.

The Purpose and Need section of the DEIS is flawed in that it provides little basis other than Executive Order 14008,⁵ concerning climate change and a call to action, followed 2 months later with a seemingly arbitrary goal announced by Departments of Interior (DOI), Energy (DOE), and Commerce (DOC) of 30 gigawatts of offshore energy without due diligence, scientific or good governance transparent assessments.⁶ These two pronouncements have no documented connection of how each achieves the goals of the other. The 30-gigawatt goal in particular has

⁴ Bureau of Ocean Energy Management, “[Atlantic Shores Offshore Wind South Draft Environmental Impact Statement](#),” BOEM 2023-0029 Docket Number: BOEM-2023-0030, May 2023 Volume 1: Chapters 1-4 , page ES-19.

⁵ [Executive Order 14008, Tackling the Climate Crisis at Home and Abroad](#), issued January 27, 2021.

⁶ FACT SHEET: Biden Administration Jumpstarts Offshore Wind Energy Projects to Create Jobs, [Biden Administration Announcement](#), March 21, 2021.

not been evaluated based on transparency, good governance, due diligence or good science, including the precautionary principle. It is also unclear what legal basis they are framed upon.

In fact, within the DEIS and in statements by BOEM, it is clear that offshore wind only has **the potential to achieve minor**, localized beneficial reductions of GHG, but at a staggering cost to the marine ecosystem and to the taxpayers. The DEIS Vol 1 page 2-61 presents an overview of the alternatives in Chart 2.4, “**Summary and Comparison of Impacts between Alternatives.**” The DEIS Vol 1 assessment in Section 2.4 clearly documents the minimal reductions in reducing climate change. Alternative B-E states that the benefits to climate change will be of **minor benefit**. The Proposed Action, Alternative B states:

*The Proposed Action would have **minor** adverse impacts attributable to air pollutant, GHG emissions and accidental releases. The Project may lead to reduced emissions from fossil-fueled power-generating facilities and consequently **minor beneficial** impacts on air quality and climate.”⁷*

To say again with clarity, there *MAY* be reduced emissions, and the project *MAY LED* to reduced emissions from fossil fuel power generating facilities and **consequently MINOR BENEFICIAL** impacts on climate. In sum, this project may do nothing to reduce climate change and may have a di minimis or minor reduction.

However, COA contends that the actual emissions assessment done by BOEM is not inclusive having left out many sources of GHG emissions discussed below. If the true emissions, cradle to grave footprint of the project, were assessed and included, *the minor possible* impact may disappear completely.

Moreover, in fact, BOEM has specifically stated repeatedly and in personal communication that the AA Shores project combined with the all the other currently proposed projects, will not reduce climate change. The Final Environmental Impact Statement for Vineyard Wind offshore wind project finalized by BOEM states:

Overall, it is anticipated that there would be no collective impact on global warming as a result of offshore wind projects, including the Proposed Action alone, though they may beneficially contribute to a broader combination of actions to reduce future impacts from climate change.”⁸

Verbal confirmation from Ian Slayton of BOEM at the Atlantic Shores South Public Meeting held on June 21, 2023, at the Holiday In in Manahawkin, New Jersey, confirmed that the projects alone or cumulatively will not reduce climate change.

⁷ See *id.*

⁸ US Department of Interior, Bureau of Ocean Energy Management, “Vineyard Wind 1 Offshore Wind Energy Project Final Environmental Impact Statement,” March 2021, <https://www.boem.gov/renewable-energy/state-activities/vineyard-wind-1>.

As described below in more detail below, the DEIS and the COP fail to disclose and fully assess the project's GHG emissions from cradle to grave. Further, the "benefit" of renewable energy production is purportedly 20 years, but offshore wind is about 65% efficient at best and loses 4.5% efficiency per year due to offshore conditions, resulting in a 40-plus percent (40+%) and be exposed to failures due to storms and hurricanes. Thus, the reliability of offshore wind to produce renewable energy, nor the true cost and benefits have not been fairly presented. However, Alternative B-E will all cause significant ecological harm, which has also not been adequately assessed.

In consideration of the lack of baseline studies and the lack ecosystem impacts to the offshore and onshore living resources as well as the socio-economic impacts, not to mention the risks due to the creation of navigational hazards, impaired radar and other risk, OSW as proposed fails to prove the benefits outweigh the costs. For example, the DEIS does not include, assess, and balance the ocean's existing buffering effects of climate change due to its natural ecosystem-based services and how these abilities and processes will be impacted by the Proposed Action, or Alternatives C-E. In so doing, the DEIS fails to provide a true cost-benefit assessment of the activities associated with the Proposed Action and Alternatives.

Finally, BOEM mentions that the areas were leased to the Applicants for the proposed projects. This has no value to the DEIS as meeting the purpose and need of reducing climate change. In fact, it blurs the line of what is in the public interest as opposed to the Atlantic Shores South economic gain.

Alternatives Discussions

To that end, the DEIS "No Action Alternative," which Clean Ocean Action prefers, must include the benefits from the current ocean ecosystem reducing climate change and how each of the Alternatives identified would impact, beneficially or negatively, this essential buffer role. It is also important to note that this ecosystem service is provided at no cost.

However, COA continues to propose and support an option which would be consistent with the precautionary principle, scientific integrity and good governance, and allow due diligence, transparency, and meaningful public input: an additional Alternative G -- a Pilot Project. If BOEM is not willing to develop wind development off the New Jersey coast responsibly-- namely, by considering and choosing an "Alternative G" that would require a pilot project at Lease Area OCS-A 0498--then Clean Ocean Action has no choice but to urge the selection of a true, no-build No Action Alternative.

Emissions Assessment Severely Lacking and Misrepresentative

As stated above, the DEIS and COP falsely represent the lifecycle (cradle to grave) emissions of the projects. In fact, the limited true assessment of the emissions is as if BOEM is putting the "thumb on the scale" and misrepresenting the full cradle to grave GHG emission impacts evaluated in the DEIS, in consideration of meeting the Purpose and Need. The DEIS claims,

“Most emissions would occur from diesel-fueled construction equipment, vessels, and commercial vehicles.”⁹

While the monopolies appear to be included, the emissions from procuring, processing, and manufacturing most other OSW power plant materials, facilities, cables, OSS, and other structures, both on and offshore, do not appear included. For example, these include but are not limited to:

- Mining, production and processing of rare earth metals for the OSW power plant,
- Mining and processing materials for HVDC and HVAC cables, including copper,
- Mining, production and production of turbines,
- Wind blades materials procurement, manufacturing, and maintenance, as well as disposal as they need to be replaced often and cannot be recycled, and
- turbines, cables, onshore construction activities and manufacturing, as well as secondary impacts as a result of the onshore development.

Another example of not providing full disclosure or assessment of offshore wind development on emissions is the omission of the use of and likelihood of leakage of sulfur hexafluoride (“SF6”) from cables or other project construction, operation, and maintenance. Any leakage will add substantially to GHG. In an August 10, 2022, letter by USEPA Region 2 reviewing the NY Bight Wind Area Energy Programmatic Environmental Impact Statement (“PEIS”), the agency identified numerous issues concerns. COA submits this letter for inclusion to these comments and highlights the following statement:

“Emissions of sulfur hexafluoride (SF6) are expected from gas-insulated switchgears on the wind turbine generators (WTG) and electric service platform (ESP). SF6 is the most potent known greenhouse gas. Approximately 23,000 times more effective at trapping infrared radiation than carbon dioxide, SF6 is also a very stable chemical, with an atmospheric lifetime of 3,200 years. Thus, a relatively small amount of SF6 can have a significant impact on global climate change. The EPA recommends that best available technology would warrant consideration of available switchgears that are SF6-free (“clean-air”). If SF6-free switchgears are determined to be technically infeasible, BOEM should consider mitigation requirements for monitoring and leak detection limiting leaks to less than 1%, especially given that there are projected to be a significant number of switchgears at each project and the switchgears will be operating in a harsh marine environment.”¹⁰

Overall, the DEIS fails to assess the fair, comprehensive, inclusive cradle to grave emissions for Alternatives B-E for the Atlantic Shores South project DEIS. This failure results in a lack of

⁹ Bureau of Ocean Energy Management, “[Atlantic Shores Offshore Wind South Draft Environmental Impact Statement](#),” BOEM 2023-0029 Docket Number: BOEM-2023-0030, May 2023 Volume 1: Chapters 1-4 , page 3.4.1-8.

¹⁰ Letter from US Environmental Protection Agency Region 2 Office to Bureau of Ocean Energy Management, August 10, 2022.

transparency and suggests a bias in the representation of the true costs and benefits. This lack of due diligence impacts the final assessment.

As stated above, the DEIS Volume 1, page 2-61, presents an overview of the alternatives, including chart 2.4, “Summary and Comparison of Impacts between Alternatives.” Alternatives B-E states that the benefits to climate change will be *of minor benefit*. The Proposed Action, Alternative B states:

*The Proposed Action would have **minor** adverse impacts attributable to air pollutant, GHG emissions and accidental releases. The Project **may** lead to reduced emissions from fossil-fueled power-generating facilities and consequently **minor beneficial** impacts on air quality and climate.¹¹ (emphasis added)*

Thus, the DEIS must fully, and without bias, assess the true emissions of the project and the potential air quality impacts and reduction in climate change.

General Comments on the DEIS

The ocean and coastal region off the New Jersey coast have vastly improved over the decades with the elimination of ocean dumping, the blocking of fossil fuel facilities, and the improvement to wastewater treatment. In response, marine life is thriving in the region with over 300 species of fish, thirty-three (33) varieties of whales and dolphins, including the endangered North Atlantic right whale, five (5) species of sea turtles, 350 species of birds, four (4) seal species, and thousands of species of invertebrates, to name a few.¹² This rich life, which has evolved over tens of thousands of years, is life sustaining to the region economically (in billions of dollars) and ecologically. The ocean ecosystem also is the primary buffer to climate change impacts. Massive, intensive, abrupt and rash industrialization will jolt the system with both known and unintended consequences. It is essential that the offshore wind industry’s impacts be fairly and fully evaluated, including cumulative impacts, to avoid and reduce impacts and, if unavoidable impacts are identified, then they must be mitigated.

There are many unanswered questions about the impacts of offshore wind energy particularly off the NJ coast, a sentiment echoed by scientists and policymakers. The lack of transparency and due process for the review of the Proposed Action is preventing a true and fair evaluation of the impacts. Offshore wind development should be evaluated fairly to ensure it is done correctly, responsibly, and reasonably, especially with respect to the reductions in carbon dioxide emissions that are so critically needed to combat climate change. However, as currently proposed offshore wind energy development is moving at an unreasonable scale, scope, and speed in the mid-Atlantic region, and East Coast.

Furthermore, scientists admit there is a dearth of scientific knowledge and studies that identify cumulative impacts of offshore wind energy development on wildlife, and yet BOEM and the

¹¹ Bureau of Ocean Energy Management, “[Atlantic Shores Offshore Wind South Draft Environmental Impact Statement](#),” BOEM 2023-0029 Docket Number: BOEM-2023-0030, May 2023 Volume 1, page 2-61.

¹² See Hutchison, et al., The Interaction Between Resource Species and Electromagnetic Fields Associated with Electricity Production by Offshore Wind Farms, 33:4 Oceanography 96 (2020).

federal government are fast-tracking this Proposed Action and other offshore wind projects. More independent, peer-reviewed scientific studies must be completed before permits are awarded and decisions are made on large-scale offshore wind projects, such as Atlantic Shores South. The cumulative impacts can be grave and great to the North Atlantic right whale, key benthic species, and other important contributors to the ecosystem.

Yet, currently, there are numerous Memorandum of Understandings (“MOUs”), Memorandum of Agreements (“MOAs”), or “Programmatic Agreements” between BOEM and various agencies, foreign governments, companies, and consultants specific to offshore wind or renewable energy development, especially aimed to fast-track efforts and processes. The purpose of a recent MOU, a 10-year initiative between BOEM and the National Oceanic and Atmospheric Administration (“NOAA”) signed on January 12, 2022, is “to coordinate the resources, responsibilities, and expertise of both agencies to responsibly advance offshore wind energy development on the Outer Continental Shelf.” The MOU essentially cuts-out the public and is spearheaded by one administration’s plans for “advancing” offshore wind. The MOU reads: “This MOU will also serve as an ‘umbrella agreement’ that facilitates the timely development of subsequent agreements related to offshore wind energy.” These agreements are causing public confusion and deprive the public of due process in reviewing private interests’ impacts to public resources.

Further, the federal fast-tracking initiative “Fast 41”, which refers to Title 41 of the Fixing America’s Surface Transportation Act (FAST Act) (42 U.S.C. § 4370m et seq.), created a new governance structure, set of procedures, and funding authorities to advance the federal environmental review and authorization process for covered infrastructure projects. It is important to note that *many* of the offshore wind projects off the NJ coast are listed in the federal “FAST-41” program and set for advancement. According to the U.S. Department of Transportation’s Permitting Dashboard, “Participation in the FAST-41 program is voluntary, and sponsors of projects that qualify under specific statutory criteria apply to obtain program benefits. The program helps ensure a deliberate, transparent, and predictable Federal environmental review and permitting process for certain large, complex infrastructure projects.” These federal agreements and initiatives fast-tracking and streamlining large projects are essentially giving the “green light” to private companies to control and the rights to develop a public resource, the ocean. In short, BOEM is violating its obligation to protect offshore resources under the public trust and limiting due process.

Fast-tracked reviews of offshore wind projects are not fair or just and they do not reflect good governance, especially in combination with the many expedited government and agency agreements described above. There will be moderate to major impacts from this OSW project, as noted in the Draft EIS. There will also be numerous marine mammal Incidental Harassment Authorization (“IHA”) applications, state permits for onshore development, U.S. Army Corps of Engineers permit applications, and state consistency reviews all being fast-tracked with lengthy, complicated materials to simultaneously review. Moving quickly and carelessly could prove devastating to marine life, and impact onshore communities. BOEM must provide more time, overall, to review Draft EIS and Final EIS documents now and in the future.

There is support for reasonable and responsible offshore wind energy and interest in participating in the review process that allows for sufficient time. COA maintains the 45-day public comment period issued under the original notice was insufficient time to review and prepare comments on

the large-scale industrial development in the Proposed Action. Clean Ocean Action collected petition signatures in a short time frame to support sufficient time and reasonable and responsible offshore wind energy development off the NY/NJ coast. In two and a half weeks' time, 940 people signed Clean Ocean Action's petition¹³ (digital and paper) to extend the public comment period for the Applicant's DEIS by six (6) months. Clean Ocean Action is dismayed that the Federal Government did not look favorably upon numerous requests from people, as well as U.S. Representatives, to extend the comment period for the aforementioned reasons.

With respect to the environmental review process for the Atlantic Shores South projects, more generally, Clean Ocean Action stresses that ocean waters are public and held in trust. Federal and state agencies are entrusted with the duties to protect these lands for the public interest. The Atlantic Shores South proposal is a major use of open public ocean land and water, enjoyed and shared by millions of people of all ages and backgrounds. However, the process by which the DEIS is being reviewed lacks due process and transparency.

COA respectfully submits that the Draft EIS is incomplete, inconsistent, and misleading. The DEIS distorts information to minimize potential impacts to marine life and air quality, and underestimates severe weather events, among other deficiencies. The Draft EIS also fails to discuss the true magnitude and extent of the proposed OSW facility's environmental impacts throughout the project's life cycle, from pre-construction through decommissioning. Significantly, the Draft EIS does not consider the many other wind projects being proposed on adjacent leased areas, nor does it examine connected actions occurring onshore or the cumulative effects of this project in conjunction with subsequent Atlantic Shores and other OSW proposals.

The Atlantic Shores South Draft EIS is a lengthy, technical document; it is 2,200+ pages with numerous appendices, tables, maps, figures, and hundreds of referenced documents that must be thoroughly reviewed from legal, scientific, policy, socio-economic, economic, health, and advocacy perspectives. There is much at risk, including a rich diversity of species and extensive onshore and offshore impacts. Unfortunately, BOEM seems to disregard public engagement in several ways.

It is clear that many onshore communities will be affected, and the comment period on the DEIS is during a time where those that will be most impacted – shore businesses, coastal communities, and individuals – are busy earning a living during the height of the summer season. The Draft EIS comment period commenced during the beginning of the summer season, having been announced just before Memorial Day weekend. BOEM allowed a mere 45-days for the public to review, assess, affirm, share, consider, absorb, understand, and provide comments. BOEM providing this bare minimum for public comment is not good governance. Interested groups do not meet during summer months or regularly with members and boards to be able to discuss issues and get board or administrative approval for testimony and comments in the amount of time given (e.g., 45 days). This is not enough time to review thousands of pages in the DEIS, prepare questions and concerns for verbal testimony at virtual hearings, and prepare meaningful written comments.

¹³ Clean Ocean Action Petition, "Defend the Ocean: Two Offshore Wind Projects Treated as One... Twice the Impacts," as seen at 6:10pm on July 3, 2023, <https://chnng.it/XNvCrYPPSD>. Also, see Attachment 1 of paper signed petitions.

Similarly, the public comment period ends in the middle of a holiday weekend with a bustling Jersey Shore and prime summer vacation time. Comments are due July 3, 2023, at 11:59am, which is during the most significant summer tourism holiday weekend at the Jersey Shore. Businesses and individuals are diligently working to earn a living during this important revenue-generating weekend. As such, and as described later in this section, COA reiterates its request for a minimum 90-day extension to the comment period to allow the public time to properly review the documents and inform the EIS.

The framework set forth by the National Environmental Policy Act (“NEPA”) provides that when an agency publishes a DEIS, the public must be provided a minimum of forty-five (45) days to review and comment on the document. However, BOEM is not limited to this time period, which is wildly unrealistic, unjust, and poses undue challenges for all parties interested in providing thorough feedback on this unprecedented document and these projects. Indeed, BOEM’s aggressive pro-offshore energy advocacy, expedited fast-tracking process, undermining of the due process, lack of transparency, in addition to providing only the minimum required public review and comment period, suggests an administrative bias toward the industry.

In the name of transparency and good and fair due process, COA strongly urges BOEM to extend the public comment period an additional 90 days (to October 1, 2023) for the following reasons:

1. BOEM made crucial mistakes regarding public information of Atlantic Shores South public meetings, misrepresenting the dates on BOEM social media. On May 19, 2023, the BOEM Facebook account notified the public that three in-person public meetings would be held, at 5pm on Tuesday, June 20; Wednesday, June 21; and Thursday, June 22. It was additionally mentioned that there would be a virtual public meeting at 1pm on Monday, June 26. However, the current BOEM website lists very different dates: two in-person meetings, on June 21 and June 22, and virtual meetings on June 26 and June 28.
 - a. This potential misinformation proves very confusing for the public. Social media has proven incredibly effective in communicating meeting information with the public, but it can be very damaging when the wrong details are spread widely. The public must be kept consistently and continuously aware of the process of the Atlantic Shores projects, including being given full knowledge of what meetings are being held. It is absolutely crucial that public input is welcomed and valued at these meetings, as that is their initial purpose. However, if incorrect dates are allowed to circulate, such as those that were advertised, and many people remain unaware of the second virtual meeting date, this purpose will be hindered. This lack of transparency with the public raises concerns about the future processes of OSW development projects.
 - b. Not only must the public be able to freely attend the meetings that are held, but they must also be given enough time to respond to such information. With immense confusion surrounding the meetings and public comment opportunities, individuals must be given more time to organize research and their responses to raise questions and submit informed comments.

c. In the Federal Register, the Public Notice[1] announcing the availability of the DEIS clearly states that there will be “public hearings.” Yet, in a separate BOEM document¹⁴ not linked in the Federal Register notice, the open “informal,” “open house” format and conduct of the “public meetings” are described. However, there is no mention of these “informal” “public meetings” or “open house” formats in the Public Notice published in the Federal Register. While COA welcomes and supports the “open house” format to address questions from the public, the lack of a public notice for these informal open houses in the Federal Register undermines the public’s opportunity to be prepared for such; therefore, this confusing attempt at public engagement is unacceptable. Moreover, there was no open, formal public hearing following an open forum in which the public could speak directly to decision makers and in a formal manner for all to hear issues and concerns. There was only a virtual opportunity which denies the public a forum before decision makers.

2. Further, the Federal Register announcing the DEIS and BOEM communications regarding the opportunities for public engagement were different, inconsistent and misleading. The two public, informal “open house” meetings on June 21, 2023, and July 22, 2023, as well as the two virtual public meetings held on June 26, 2023, and June 28, 2023, were held less than two weeks from the comment period deadline, not giving much time for the public to digest and verify information presented in these meetings in time to provide informed comments. To reiterate, the timing of the close of the public comment period is during the July 4th extended holiday weekend with a bustling Jersey Shore. Indeed, the economies, individuals, and local businesses that will be most affected by rapid and reckless OSW development are also the groups that are most busy during this season. This busy time is absolutely the wrong time to be rushing a highly important comment period.
3. Finally, the entire offshore wind development process lacks due process and good governance. Most of the process was fast-tracked and took place during the pandemic with a lack of transparency. As OSW energy development will dramatically alter the Jersey Shore, it is long overdue that the public be given ample time and opportunity to review and comment on these massive documents.
4. At the same time, BOEM released the Final Environmental Impact Statement (“FEIS”) for Orsted’s Ocean Wind project, a 100-turbine facility with 5 substations and thousands of pages for review before the expected July 7th Record of Decision (“ROD”).

To help address the time constraints and challenges listed above, COA urges that BOEM extend the public comment period 90 days to well-after Labor Day on October 1, 2023. The proposed extension is absolutely crucial to the transparency and good governance between BOEM and the public. Individuals and local organizations must be provided with ample time to continue and finalize sound science and research regarding the Atlantic Shores South projects. This is especially necessary when considering that, in comparison to other projects with similar time

¹⁴ Bureau of Ocean Energy Management, “What to Expect at the In-Person Open House Public Meetings,” as seen June 26, 2023, https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/41594_AtlanticShores_MeetingInfo_V02.pdf.

frames such as Ocean Wind 1, the Atlantic Shores projects 1 & 2 have been combined into one DEIS. This change has resulted in a long, denser draft document to review, a process that evidently needs more time.

Moreover, there is uncertainty regarding the long-term and onshore impacts associated with this unprecedented scale of offshore development. COA acknowledges the COP's recognition that there *will be* adverse impacts and emphasizes the consideration of avoidance, minimization, and mitigation. The possible expected impacts, both short-term and long-term, as well as cumulative, are extensive.

COA maintains that impacts from offshore wind energy development to marine life, from the benthos to the ocean's surface and above, must be avoided and the proposed projects must not create unnecessary harm. Unfortunately, there is not enough science to determine the impacts of this new industry on the ocean off the NY/NJ coast. Indeed, scientists in recent conferences have conceded that the scientific community does not know enough about the cumulative impacts the development of offshore wind energy and its associated infrastructure has on marine resources. Also, a recent study connects how offshore wind energy development can impact marine diversity and in turn causes more harm by way of climate change.¹⁵

COA recommends changes to the submitted COP and that BOEM include sufficient avoidance and meaningful mitigation measures. The majority of known effects associated with constructing wind turbine generators and foundations are most severe during the construction and surveying periods of a project's lifecycle. While cumulative impacts are mentioned briefly in sections, the Draft EIS does not broadly or specifically consider impacts as they relate to the 31 other known projects and offshore wind lease areas in the Northeast United States as they relate to Atlantic Shores South. As such, the impacts from any and all of these projects will be amplified in the geographic analysis area.

The Atlantic Shores projects are massive private, commercial, and industrial facilities that do not exist anywhere else in the world in such size, scale, and scope. Further, the Atlantic Shores projects are among many offshore wind facilities proposed in a 400,000-acre area off New Jersey's Ocean, Atlantic, and Cape May Counties. Given the scope and magnitude of this infrastructure, both on and offshore, it is imperative that not only each project be environmentally responsible, but the cumulative impacts considered and avoided, minimized, or mitigated. Throughout the initiation, cultivation, and promotion of this new industrial development, proponents—especially state and federal leaders—commit to moving forward responsibly. As these offshore wind projects are now moving forward, now is the time for meaningful commitments to meet that standard.

In general, COA's expectation for responsible development of offshore wind energy, including the Atlantic Shores projects, focuses on the following principles, which COA recommends the EIS address:

- Identifying and assessing cumulative environmental impacts from Atlantic Shores projects as well as the cumulative impacts from all projects being considered in the

¹⁵ Howard Dryden and Diane Duncan. "[Climate Disruption Caused by a Decline in Marine Biodiversity and Pollution](#)," October 2022, *International Journal of Environment and Climate Change*, 12(11):3414-3436, DOI:10.9734/IJECC/2022/v12i111392.

region. The land use experience over the last 200 years has proven that piecemeal development will lead to mistakes and ecological harm.

- Transparency to the public at all levels of design, preconstruction, construction, operation and maintenance, and decommissioning, and more disclosure of onshore and offshore activities with minimal redaction,
- Meaningful public involvement —not just hosting meetings but actual measurable evidence of project modification to meet public concerns.
- Meeting legal requirements through the lens of maximizing opportunities for environmental protection;
- Fully complying with New Jersey’s enforceable policies for purposes of the Coastal Zone Management Act, especially those concerning the protection of endangered and threatened species’ habitat and critical wildlife habitat;
- Refraining from soliciting or accepting any state agency approvals for the Atlantic Shores projects which may be arbitrary or capricious under the Administrative Procedures Act by virtue of their issuance prior to all pertinent information being made available to the public and the agencies of decision;
- Implementation of coastal resiliency and adaption for sea level rise and storm surges for all onshore and offshore facilities, especially as the life span of these projects is 35 years;
- Meaningful interagency review is essential at the local, state, and federal levels; this is especially important during the EIS development with natural resource agencies, as well as community and citizen resources agencies to ensure environmental justice, public health, or over-development issues are identified and addressed;
- Protection of submerged lands that fall under the scope of the Public Trust Doctrine, as these facilities are occupying, altering, and obstructing the use of resources that were (and remain) treasured public resources, and habitat for extraordinary marine life; therefore, they must have the utmost respect and care.
- Identifying and considering true, proper alternatives, such as the onshore production of solar and wind energy.
- Strong measures to protect the North Atlantic right whale, and other species, including but not limited to regional construction calendars to reduce noise from construction, operation, and maintenance.
- Using the best available science to determine and evaluate the environmental impacts of the Atlantic Shores projects to protect marine resources and refraining from accelerating the projects’ environmental review process.

Further, no reasonable pilot project has been conducted to make meaningful comparisons for the large-scale offshore wind development of the Proposed Action. Despite assurances that data from OSW in Europe or the five-turbine project off Rhode Island can justify the safety of Ocean Wind 1 near New Jersey, these claims are not appropriate. Given the scientific uncertainty, lack of transparency, and extensive onshore and offshore impacts of Atlantic Shores South, as well as the size, scope, and scale of this new industrial development of a public resource, Clean Ocean Action recommends BOEM consider a new alternative: Alternative “G”, a pilot-scale sized project. A pilot project would allow the information needed to understand the risks and impacts of this development on resources and communities before large-scale development, such as the Proposed Action, would occur.

BOEM must recognize that a pilot project offers value for more than matters of quantitative scientific observation—which is why the logistic importance of a local pilot project cannot be overstated. Siting five 6-MW turbines off the coast of Rhode Island for the wind farm at Block Island is hardly the same as siting up to 231 15-MW turbines – which are new and in the testing phases – in the waters off New Jersey, which include vital shipping lanes for one of the busiest ports in the country. Studies, such as the one by Strobach et al. (2018) on the impacts of inland terrain on offshore wind development in Maryland, for example, reconfirm that a lot of factors remain unknown and need to be investigated in greater depth and detail in the proposed WEA, and this Project. While there are definitely some aspects of the Rhode Island process that would benefit the development of offshore wind near NJ, such as the creation of a Special Area Management Plan before completing the BOEM review process, neither it nor the European studies are appropriate scientific or logistical stand-ins for New Jersey’s uniquely busy coast. A small, local pilot project that uses the proposed technology and can be robustly evaluated before, during, and after construction is the only way to address the shortcomings identified above and begin the path toward responsible development of offshore wind energy in these waters through a process that reflects fair, responsible, and good governance. If BOEM is not willing to develop wind development off the New Jersey coast responsibly—namely, by considering and choosing an “Alternative G” that would require a pilot project at Lease Area OCS-A 0498—then Clean Ocean Action has no choice but to urge the selection of a true, no-build No Action Alternative.

For the aforementioned reasons, especially the lack of due process and lack of analysis concerning cumulative impacts to which this project will contribute, Clean Ocean Action urges BOEM to pursue a pilot-scale offshore wind development project before allowing Atlantic Shores South to move forward at the proposed industrial scale. Clean Ocean Action also supports the No Action Alternative to ensure the protection of the marine environment.

The Draft EIS fails to present a responsible and reasonable “purpose and need” as required by the National Environmental Policy Act (NEPA) for the proposed project, as well as fails to evaluate all reasonable alternatives to the proposed Project as required by law. The Draft EIS makes clear that Atlantic Shores South is being fast-tracked, and the document is written with a clear indication of a positive outcome for the Applicant. The Draft EIS also demonstrates the project will have a range of significant negative impacts to the marine environment and surrounding areas. In addition, there is a dearth of scientific studies in certain areas critical to assessing the impacts from the projects’ effects on multiple ecosystems in the region, as well as concurrent and cumulative impacts. In sum, COA regards the Draft EIS as deficient in numerous respects. COA supports the No Action Alternative and opposes all other options as presented in the DEIS.

Missing or Unavailable Information

The Draft EIS analyzes how Atlantic Shores South will affect the environment and local communities’ relationship with it. Across the various sections of analysis that the document contains, however, one theme is clear: there are enormous gaps in the baseline data and scientific literature concerning the impacts of offshore wind energy development—including from Atlantic Shores in particular—on natural resources and the ecosystems that rely on them. Our most urgent concerns with the Draft EIS’s characterization of environmental consequences from Atlantic

Shores South are set forth below.

Water Quality

There are many instances of deficiency or missing information with regard to water quality in the area of the Proposed Action. Pg E-1 of Appendix E, specifically subsection E.1.1.2, states that “No incomplete or unavailable information related to the analysis of impacts on water quality was identified.” This claim is grossly inaccurate. Some of the adverse impacts and issues that have been oversimplified and inadequately addressed in the DEIS are described below.

The DEIS oversimplifies and incorrectly concludes that “No incomplete or unavailable information related to the analysis of impacts on water quality was identified (E.1.1.2, pg. E-1). The affected environment with respect to potential Project-related water quality impacts includes the marine waters of the Offshore Project Area encompassing the outer continental shelf (“OCS”) waters of the wind turbine area (“WTA”) to the nearshore and intertidal waters along the export cable corridors (“ECCs”) to each landfall site. The COP on which the DEIS is based states that water quality offshore in the waters of the WTA and along the ECCs is generally considered good and supportive of marine life based on regional monitoring data syntheses for offshore waters(COP, Vol II).¹⁶ This is based on the National Coastal Condition Assessment Report from U.S. EPA (2015) from 23 sampling sites located along New Jersey’s coast extending from Sandy Hook Bay to Delaware Bay. The DEIS states that “*No NCCA stations directly correspond to the WTA and ECCs, but they provide indicative coastal water quality conditions in the nearby waters.*”

Chlorophyll a is a measure of how much photosynthetic life is present. Chlorophyll a levels are sensitive to changes in other water parameters, making it a good indicator of ecosystem health. USEPA considers estuarine and marine levels of chlorophyll a under 5 micrograms per liter (µg/L) to be good, 5 to 20 µg/L to be fair, and over 20 µg/L to be poor. Table 3.4.2.1 (pg. 3.4.2-6) shows that none of the 23 sites tested good for Chlorophyll a with eight sites actually exceeding the threshold values and rated “poor.” The proposed project and its offshore and nearshore activities will adversely impact and add to the chlorophyll burden on these environments and has not been discussed in the DEIS.

Eutrophication in coastal waters has been a growing problem of concern threatening the ecosystem health of coastal and estuarine environments. Table 3.4.2.1. also shows that dissolved inorganic nutrients are a source of concern, and the DEIS fails to state how the proposed activities onshore, along the ECC, and in offshore environments will not exacerbate this pollution source.

NJ Surface Water Quality Impairments

¹⁶ Atlantic Shores Offshore Wind, Atlantic Shores Offshore Wind Construction and Operations Plan Lease Area OCS-A 0499, September 2021, <https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/Atlantic-Shores-COP-Volume-II-Affected-Environment.PDF>.

New Jersey's Waterways are impaired.¹⁷ Coastal onshore waters in the geographic analysis area include North Branch of the Metedeconk River, Manasquan River, Mingamahome River, Jumping Brook, Stephen Creek, Great Egg Harbor River, Mill Branch, Patcong Creek and associated tributaries to these waters. The majority of the assessment units within the water quality geographic analysis area are listed as impaired and 303(d) listed by NJDEP (USEPA 2020). The impaired assessment units are generally non-supporting for ecological use, fish consumption, and recreation use caused by factors including, but not limited to, oxygen depletion, pathogens, and PCBs. Nearly all water quality assessment units of Barnegat Bay, Great Egg Harbor Bay, the Delaware River, and associated tidal tributaries within the geographic analysis area in New Jersey are listed as 303(d) impaired. These waters are non-attaining for fish consumption, ecological function, or recreation, with causes including pathogens, turbidity, oxygen depletion, pesticides, and PCBs. Waters along all the ocean-side barrier island shorelines in the geographic analysis area are non-attaining for ecological function due to oxygen depletions (pg. 3.4.2-10). Table 3.4.2.2 further shows that the Monmouth Landfall Site, Monmouth ECC, Atlantic Landfall Site, and Atlantic ECC are unsupportive of general aquatic life, and fish consumption is largely undetermined, while shellfish harvesting is largely unsupportive for Monmouth Landfall Site and Atlantic Landfall Site. NJDEP monitors coastal waters during the summer under the Cooperative Coastal Monitoring Program and both these areas routinely have pathogen exceedances that have resulted in beach closures. The DEIS fails to address additional impacts to these impaired waters from the proposed project.

Specific to Monmouth County/Larrabee onshore project area, the DEIS fails to prove how the proposed activities will ensure the safety drinking water supply to the local communities. The private New Jersey American Water company manages a public community water system that supplies Howell Township with drinkable water through fourteen groundwater wells and one surface water source (DEIS, pg. 3.4.2-13). According to the DEIS, these groundwater wells and surface water are not shown or discussed in the COP as they are over one mile from the onshore project area. Approximately 60 percent of the drinking water for the Monmouth County communities of Sea Girt Borough and Wall Township, as well as other communities, is sourced from the Manasquan Reservoir in Howell Township. This reservoir is managed by the New Jersey Water Supply Authority and is located over 1,000 feet (305 meters) to the northwest of the Onshore Project area at its nearest point (DEIS pg. 3.4.2-13).

How did the DEIS arrive at the conclusion that the onshore activities of the proposed project will not impact these vital drinking water sources? What criteria did BOEM use to determine this find?

Also, three protected species – Piping Plover, Red Knot, and Sea Beach Amaranth can be found in proximity to the Monmouth Export Corridor and Landing Site. The proposed project and its activities will adversely affect these species, and BOEM fails to review these details in the DEIS. COA submitted concerns on these as a part of the scoping comments (Atlantic Shores' Application for a General Permit 23 Authorizing Activities Near Asbury Park (Agency Docket Number 1300-22-0001.1, LUP220001) that was submitted in July 2022.

¹⁷ State of New Jersey, "2018/2020 New Jersey Integrated Water Quality Assessment Report, Clean Water Act 303(d) List and 305(b) Report," updated September 1, 2022, <https://www.state.nj.us/dep/wms/bears/assessment-report20182020.html>.

In summary, COA questions the veracity of the premature and incorrect conclusions made in the DEIS about the impacts of the proposed action and its alternatives, a sample of which is provided as an excerpt below, and requests that the DEIS be denied for inadequate scientific investigations on the impacts to water quality. According to 3.4.2-24:

Impacts of Alternative B – Proposed Action. BOEM anticipates the impacts on water quality resulting from the Proposed Action would be minor. Impacts from routine activities including sediment resuspension during construction and decommissioning, both from regular cable laying and from prelaying; dredging; vessel discharges; sediment contamination; discharges from the WTGs or OSSs during operation; sediment plumes due to scour; and erosion and sedimentation from onshore construction, would be negligible to minor. Impacts from non-routine activities, such as accidental releases, would be minor from small spills. While a larger spill could have moderate impacts on water quality, the likelihood of a spill this size is very low. The impacts associated with the Proposed Action are likely to be temporary or small in proportion to the geographic analysis area and the resource would recover completely after decommissioning.¹⁸

Artificial Reefs

New Jersey's Artificial Reef Program¹⁹ provides a network of 15 artificial reefs in the ocean waters along the New Jersey coast.²⁰ These reefs provide a hard substrate for fish, shellfish and crustaceans, fishing grounds for anglers, and underwater structures for scuba divers. The reefs are strategically located along the coast so that 1 site is within easy boat range of 12 New Jersey Ocean inlets (NJ Division of Fish and Wildlife).²¹ The Monmouth and Atlantic Export Cable Corridor will adversely impact prime fishing grounds including the following artificial reefs: (i) Manasquan Inlet (ii) Axel Carlson (iii) Atlantic City. Additionally, noise from pile driving activities in proposed Projects 1 and 2 will adversely impact existing artificial reefs: (I) Atlantic City (ii) Great Egg and (iii) Little Egg. Moreover, invasive species are a serious threat and monopoles and other associated structures with offshore wind provide a pathway and habitat for them to inhabit the region. How will the Applicants ensure that invasive species will not inhabit the region? What monitoring systems will be used? What will be done to eliminate the establishment of the invasive species?

Commercial Fishing

¹⁸ Bureau of Ocean Energy Management, “Atlantic Shores Offshore Wind South Draft Environmental Impact Statement,” BOEM 2023-0029 Docket Number: BOEM-2023-0030, May 2023, Volume 1, 3.4.2-24.

¹⁹ NJ Office of Information Technology, NJ Artificial Reef Program, as seen 7/2/2023, <https://njdep.maps.arcgis.com/apps/webappviewer/index.html?id=01e06ca960a3414381fc69b797a52901>

²⁰ NJ Fish & Wildlife Department, NJ Artificial Reef Program, as seen 7/2/2023, <https://www.nj.gov/dep/fgw/artreef.htm>.

²¹ NJ Division of Fish & Wildlife, Artificial Reef Deployments, as seen 7/3/2023, <https://www.nj.gov/dep/fgw/artreefdeployment.htm>.

Commercial fishing densities are one of the highest in the region in the proposed project lease area and along the Monmouth and Atlantic ECCs. As stated by BOEM,²² Surf Clam/Ocean Quahog Commercial Fishing Density is medium high to very high; scallop commercial fishing density is medium high to high along the Monmouth ECC; monkfish and squid commercial fishing density is medium high to high near the Monmouth landfall site and along the ECC; herring commercial density is also higher along the Atlantic ECC and near its Landfall site.

The Atlantic Shores Offshore Wind Fisheries Communication Plan NY Bight Lease OCS-A 0541²³ states that three of the top five ports deriving revenue from the Lease Area are in NJ (Cape May, Atlantic City, and Barnegat Light/Long Beach). The top two primary commercial fisheries within the Lease Area are surf clam / ocean quahog (by weight) and Atlantic sea scallops (by revenue). Together, those two fisheries account for 93% of the revenue derived from the area and ~85% of the landings (by weight). Other species harvested from the area include summer flounder, squid sp., monkfish and other finfish species. One of the main strategies described in the FCP (section 5.2) is to schedule and hold regular meetings, open houses and webinars with activities designed to educate the public, share project information and solicit community feedback activities. In Section 5 of Atlantic Shores Offshore Wind Fisheries Communication Plan Lease Area (OCS-A 0499)²⁴, Atlantic Shores acknowledges these complexities and the challenges they present when attempting to disseminate critical information to large numbers of fishermen in a reliable, timely manner. Engagement efforts must embrace differences in the needs of these fishing communities. The Fisheries Communication Team use specific methods to target both the commercial and recreational users, and sub-groups of the same, in addition to general outreach strategies designed to engage the entire fishing community. Identifying the best ways to communicate with fishermen will be an ongoing process that will evolve over time with the inputs from fishermen, which are encouraged”. This is very general and lacks details as evidenced by the yet-to-be constructed webpages dedicated specifically to “Fish and Fisheries,” “Marine Mammals,” and “Birds and Bats.”²⁵

Two recent reports highlight grave concerns for commercial fishing and fisheries populations from proposed offshore wind development in the region. The study on Atlantic surfclam fishery and OSW development by Rutgers University,²⁶ which is funded by the Research and Monitoring Initiative (NJBPU-NJDEP) showed significant economic losses as high as 25 percent for fishing vessels based in Atlantic City alone while revenue declines ranged from 3 – 15 percent for the whole region. How are the Applicants incorporating these findings in the Fisheries Communication Plan (“FCP”)? Also, the RMI is funding the development of a novel

²² BOEM, Atlantic Shores Offshore Wind South Project, Commercial Fishing Density, as seen 7/2/2023, https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/AtlanticShoresSouth_CommFishingDensity.pdf.

²³ Atlantic Shores Offshore Wind, Atlantic Shores Offshore Wind Fisheries Communication Plan NY Bight Lease OCS-A 0541, Ver. 1.0, Pg. 13, https://www.atlanticshoreswind.com/wp-content/uploads/20220826_ASOW_FCP_OCSA_0541_Version_1.0.pdf.

²⁴ Atlantic Shores Offshore Wind, Atlantic Shores Offshore Wind Fisheries Communication Plan Lease Area (OCS-A 0499), as seen 7/3/2023, https://www.atlanticshoreswind.com/wp-content/uploads/ASOW_FCP_Version_1.3_rev.pdf.

²⁵ Atlantic Shores Offshore Wind, Virtual Open House, as seen 7/1/ 2023, <https://atlanticshoreswind.net/>.

²⁶ Andrew M Scheld and others, The Atlantic surfclam fishery and offshore wind energy development: 2. Assessing economic impacts, ICES Journal of Marine Science, Volume 79, Issue 6, August 2022, Pages 1801–1814, <https://doi.org/10.1093/icesjms/fsac109>.

surfclam dredge and the RMI²⁷ is funding the development and calibration of a novel clam dredge that can be employed within windfarms, which will enable the continuity of the survey and provide critical data for managing the population. How and where are these results and the status of the project being shared with the fishing community as well as the general public? COA would specifically like to know what efforts have been taken by the Applicants towards mitigation as well as communication and outreach as outlined in the FCP on two recent reports, one from Rutgers University that describes significant harm to fisheries and consequently cascading ecosystem impacts.

Of greater concern is the 2023 Report, “Fisheries and Offshore Wind Interactions: Synthesis of Science”²⁸ which identified significant knowledge gaps and the fast-tracking of OSW projects, leaving many valid scientific questions unexplored:

*The recommendations indicate an enormous amount of research is still needed in order to understand the impact of OSW on our environment and fisheries, but time is limited. A timely, productive regional science plan for offshore wind could have resulted in an enhanced ability to understand the environmental interactions resulting from the first large-scale OSW projects, especially on a cumulative scale.*²⁹

Two examples of concern in the report that are very relevant (pg. 232, Section 6, Table 1) point to a lack of knowledge on (i) the effect of substrate change on fisheries populations and (ii) how stochastic events, such as Nor’easters and hurricanes factor into variability in distribution and abundance of fish species. These concerns have not been addressed in the DEIS thoroughly, rendering it incomplete.

Environmental Impacts from Offshore Wind Development & Atlantic Shores South

The NY/NJ Bight is rich with diverse species and extraordinary natural features. Species diversity in the NY/NJ Bight include over 33 species of whales and dolphins, including the endangered Northern Atlantic right whale; 5 species of sea turtles; 300 species of fish; 350 species of birds; 4 species of seals; hundreds of invertebrates,³⁰ eels, and other species; and 20 threatened and endangered species.

The physical features of the region are unique as well. The NY/NJ Bight experiences intense ocean mixing, called a “Cold Pool” effect, that stimulates massive phytoplankton blooms central to the structure of all NY/NJ Bight ecosystems. Due to its relative warmth, heavy flows of freshwater and inland nutrients from the Hudson River, and unique bathymetry, the NY-NJ Bight

²⁷ NJDEP, “Offshore Wind: Research & Monitoring Initiative,” as seen July 3, 2023, <https://dep.nj.gov/offshorewind/rmi/#projects>.

²⁸ <https://repository.library.noaa.gov/view/noaa/49151> Hogan et al., 2023. Fisheries and Offshore Wind Interactions: Synthesis of Science” - NOAA Technical Memorandum, NMFS-NE-291.

²⁹ “RODA, federal agencies issue ‘synthesis’ report on fisheries and offshore wind,” by Kirk Moore, National Fisherman, March 30, 2023, <https://www.nationalfisherman.com/national-international/roda-federal-agencies-issue-synthesis-report-on-fisheries-and-offshore-wind>.

³⁰ Hutchison *et al.*, The Interaction Between Resource Species and Electromagnetic Fields Associated with Electricity Production by Offshore Wind Farms, 96 Oceanography Vol. 33, No. 4 (December 2020).

holds rich habitat for whales and other species. Ocean currents wash over these bottom features and stir up nutrients that are absorbed by phytoplankton. In essence, the NY/NJ Bight has unique features that are ideal for a vast variety of ocean life, ranging from deep sea corals to over 300 fish species.³¹ The Cold Pool in the Mid-Atlantic Bight supports some of the richest ecosystems and fisheries in the nation, including the most profitable shellfish fisheries and “second-most lucrative single-species fishery, sea scallops, in the western Atlantic.”³² The Bight is also vital to the migratory patterns of many different species, ranging from deep sea corals to invertebrates.³³ The Atlantic sea scallop (*Placopecten magellanicu*), Atlantic surfclam (*Spisula solidissima*), and ocean quahog (*Arctica islandica*) habitat along the Mid-Atlantic Bight is consistently among the most profitable fisheries in the world.³⁴

Further, water column stratification could affect a number of species vital to fisheries and local ecosystem health, including summer flounder.³⁵ The health of the habitat for these and other species is closely associated with Mid-Atlantic Ocean conditions. Further, increased mortality and reduced reproductive success of shellfish and other species has been associated with warming-induced shifts to the stratification of cycles in oceanographic conditions.³⁶ This indicates that further alterations to ocean mixing may lead to changes in vital species activities across the board. Turbine arrays may directly or indirectly affect seasonal processes that dictate water column nutrient transfer among ecosystems and species.³⁷

Many species in the waters and migratory corridors surrounding and within the project area could be vulnerable to interruptions in foraging, migration, or other effects of the foundations, cables, and all submerged gear. With these abundant and diverse marine resources and wildlife in mind, COA has concerns for the Draft EIS and its failed attempt to comprehensively identify, assess, and address the ecological impacts of the Proposed Action. These concerns and deficiencies are described in the forthcoming subsections.

³¹ New York Ocean Action Plan, Department of Environmental Conservation (2016-2026), available at https://www.dec.ny.gov/docs/fish_marine_pdf/nyoceanactionplan_final.pdf

³² Travis Miles, Josh Kohut, and Daphne Munroe *et al.*, Could federal wind farms influence continental shelf oceanography and alter associated ecological processes? A literature review, Rutgers University and Science Center for Marine Fisheries (SCEMFIS) (Dec. 1, 2020), available at <https://scemfis.org/wp-content/uploads/2021/01/ColdPoolReview.pdf>

³³ New York Ocean Action Plan, Department of Environmental Conservation (2016-2026), available at https://www.dec.ny.gov/docs/fish_marine_pdf/nyoceanactionplan_final.pdf

³⁴ National Marine Fisheries Service, 2020: Fisheries of the United States, 2018. U.S. Department of Commerce, NOAA Current Fishery Statistics No. 2018.

³⁵ T.M. Grotius and E. A. Beauchene, 2011: Fine scale spawning habitat delineation for winter flounder (*Pseudo Pleuronectes americanus*) to mitigate dredging effects –Phase II (Cycle 8), 2/2011.

³⁶ D. A. Narvaez, D. M. Munroe, E. E. Hofmann, J. M. Klenck, and E. N. Powell, 2015: Long-term dynamics in Atlantic surfclam (*Spisula solidissima*) populations: the role of bottom water temperature. *Journal of Marine Systems*, 141, 136-148.

³⁷ Travis Miles, Josh Kohut, and Daphne Munroe *et al.*, Could federal wind farms influence continental shelf oceanography and alter associated ecological processes? A literature review. Rutgers University and Science Center for Marine Fisheries (SCEMFIS) (Dec. 1, 2020), available at <https://scemfis.org/wp-content/uploads/2021/01/ColdPoolReview.pdf>

Impacts to Endangered Species

It is clear that the Proposed Action will impact marine life, including endangered, threatened, and federally protected species. Overall, the Draft EIS is deficient in assessing and reviewing the impacts to these species in particular from the Atlantic Shores South Projects.

1. Impacts to North Atlantic Right Whales

The North Atlantic right whale (“NARW”) is a critically endangered species that is exceptionally vulnerable to additional barriers in its migratory patterns and prime foraging habitat. While BOEM requires mandatory minimization procedures and marine mammal observers for construction and operation of offshore wind facilities, it is not enough. Current minimization measures, including passive acoustic monitoring (PAM) via gliders³⁸ do not account for when marine mammals are not vocalizing. Right whales vocalize frequently. But these vocalizations tend to be “irregular and non-repetitive” and based on activity level.³⁹ Further, it is likely that most known marine mammal mortalities occur via ship-strike.⁴⁰ While PAM, marine mammal observers, shut-down procedures, and other mitigation measures can be useful during construction and building spatio-temporal baseline data, there is uncertainty regarding right whale behavior and offshore wind foundations and vessel activity. The FEIS needs to address this problem.

A recent report released by North Atlantic Right Whale Consortium confirmed the population of North Atlantic right whales continues to decline. According to the report,

The North Atlantic Right Whale Consortium announced that the North Atlantic right whale population dropped to 336 in 2020, an eight percent decrease from 2019... the population estimate is the lowest number for the species in nearly 20 years.⁴¹

The report shows that despite measures to protect the species, the population continues to decline, and urgent actions to prevent further harm, including from collisions and allisions, are critical in the short and long term. Hundreds of wind turbines in the ocean from the Atlantic Shores projects, as well as the others in various stages of development in the NY/NJ region – as well as the NARW’s migratory pathway along the East Coast – will provide an obstacle course for the competing uses of the ocean, thereby putting this critically endangered species, as well as other species, at risk. According to the Chair of the North Atlantic Right Whale Consortium,

“There is no question that human activities are driving this species toward extinction. There is also no question that North Atlantic right whales are an incredibly resilient species. No one engaged in right whale work believes that the

³⁸ MOs crop *et al.*, Vocalization rates of the North Atlantic right whale, *J. CETACEAN RES. MANAGE.* 3(3):271–282, 2001, available at

https://www.researchgate.net/publication/268273193_Vocalisation_rates_of_the_North_Atlantic_right_whale

³⁹ *Id.*

⁴⁰ Ship Strikes and Right Whales, Marine Mammal Commission (last accessed 4/28/2012), available at <https://www.mmc.gov/priority-topics/species-of-concern/north-atlantic-right-whale/ship-strikes/>

⁴¹ New England Aquarium, “Population of North Atlantic right whales continues its downward trajectory.” <https://www.neaq.org/about-us/news-media/press-kit/press-releases/population-of-north-atlantic-right-whales-continues-its-downward-trajectory/> as seen 10/29/2021.

species cannot recover from this. They absolutely can, if we stop killing them and allow them to allocate energy to finding food, mates, and habitats that aren't marred with deadly obstacles," said Dr. Scott Kraus, chair of the Consortium.

The NARW is one of the most critically endangered species. Based on the population status, the outlook for the survival of the NARW is grim, especially with new threats, including offshore wind energy development. The Draft Strategy affirms this dire status in Section 2.3 where it states:

"The potential biological removal (PBR) level for the species, defined as the maximum number of animals that can be removed annually while allowing the stock to reach or maintain its optimal sustainable population level, is less than 1 (Hayes et al. 2022)." ⁴² (Emphasis added)

It is difficult to justify the "taking" of any animal facing so many threats and risks at a critical point of population. Indeed, federal officials maintain that not one North Atlantic right whale (NARW) can be lost. A preliminary draft of the Biological Assessment ("BA") found that the Proposed Action is likely to adversely affect ESA-listed marine mammal species (i.e., fin whale, NARW, sei whale, and sperm whale). On page ES-19: 2 Impacts were assessed as major for the No Action Alternative and Proposed Action scenarios for North Atlantic right whale (NARW) because impacts on individual NARWs could have severe population-level effects and compromise the viability of the species due to their low population numbers and continued state of decline.

In a May 2022 letter obtained under the Freedom of Information Act by Bloomberg Law, Dr. Sean Hayes, PhD, Chief of Protected Species, NOAA NEFSC, clearly documents and confirms the NARW's fragile hold on existence. First, the Chief of Protected Species notes that there are less than 350 remaining NARW animals.⁴³ Again, COA notes, the Draft North Atlantic Right Whale and Offshore Wind Strategy states that **not one** animal can be lost.

Looking later in the development phases of OSW facilities, the letter from Dr. Hayes states:

The development of offshore wind poses risks to these species, which is magnified in southern New England waters due to species abundance and distribution. These risks occur at varying stages, including construction and development, and include increased noise, vessel traffic, habitat modifications, water withdrawals associated with certain sub-stations and resultant impingement/entrainment of zooplankton, changes in fishing effort and related potential increased entanglement risk, and oceanographic changes that may disrupt the distribution, abundance, and availability of typical right whale food (e.g., Dorrell et al 2022).⁴⁴

⁴² U.S. Department of Interior Bureau of Ocean Energy Management and U.S. Department of Commerce National Oceanic and Atmospheric Administration NOAA Fisheries, *Draft BOEM and NOAA Fisheries North Atlantic Right Whale and Offshore Wind Strategy*. October 2022, page 5.

⁴³ Letter from Sean A. Hayes, PhD, Chief of Protected Species, NOAA NEFSC, to Brian R. Hooker, Lead Biologist Bureau of Ocean Energy Management, Office of Renewable Energy Programs, dated May 13, 2022.

⁴⁴ See *id.*

It is clear that any further disturbance of the NARW species will have an impact on this critically endangered species. Some scientists estimate that the species will go extinct within 20 years with current threats.⁴⁵

The threats to marine mammals, including NARW, include:

*negative impacts to whale habitat which may take the form of development, pollution, noise, overfishing, and climate change. Shipping channels, aquaculture, offshore energy development, and recreational use of marine areas may destroy whale habitat or displace whales which would normally use the area. Oil spills and other chemical pollutants are also a threat to whales and the prey which they feed on.*⁴⁶

What measures will BOEM require to ensure offshore wind projects do not contribute further to the decline of North Atlantic right whales? Will those measures be enough? How will these mitigation measures coordinate with measures used in other local and regional offshore wind projects?

2. Impacts to Atlantic Sturgeon

According to the National Oceanic & Atmospheric Administration (“NOAA”), “Atlantic sturgeon live in rivers and coastal waters from Canada to Florida. Hatched in the freshwater of rivers, Atlantic sturgeon head out to sea as sub-adults, and return to their birthplace to spawn, or lay eggs, when they reach adulthood.”⁴⁷ The USGS describe Atlantic sturgeon as “a long-lived, migratory species that spend most of their lives in the ocean but spawn in freshwater rivers.”⁴⁸ NOAA states, “All five U.S. Atlantic sturgeon distinct population segments are listed as endangered or threatened under the Endangered Species Act... The primary threats currently facing Atlantic sturgeon are entanglement in fishing gear, habitat degradation, habitat impediments, such as dams and other barriers, and vessel strikes.”⁴⁹

According to the DEIS,

All five distinct population segments (DPSs) of Atlantic sturgeon occur in nearshore shelf waters and in tributaries of the Mid-Atlantic Bight (Kazyak et al. 2021). Juvenile and adult Atlantic sturgeon occur in the offshore marine environment during fall, winter, and summer (Stein et al. 2004). Atlantic sturgeon have not been documented to spawn in tributaries between the Delaware and

⁴⁵ Pennisi, Elizabeth. “The North Atlantic right whale faces extinction.” Science, November 7, 2017, <https://www.science.org/content/article/north-atlantic-right-whale-faces-extinction>.

⁴⁶ Conserve Wildlife Foundation of New Jersey, “New Jersey Endangered and Threatened Species Field Guide: North Atlantic Right Whale,” as seen 12/9/2022, <http://www.conservewildlifenj.org/species/fieldguide/view/Eubalaena%20glacialis/>

⁴⁷ NOAA Fisheries, Species Directory, “Atlantic Sturgeon: About the Species,” as seen 7/2/2023, <https://www.fisheries.noaa.gov/species/atlantic-sturgeon>.

⁴⁸ USGS, USGS Study Suggests Atlantic Sturgeon Spawning Population Declined by More than 99% in the Delaware River Since the Late 1800s,” July 25, 2022, <https://www.usgs.gov/news/state-news-release/usgs-study-suggests-atlantic-sturgeon-spawning-population-declined-more-99>.

⁴⁹ NOAA Fisheries, Species Directory, “Atlantic Sturgeon: About the Species,” as seen 7/2/2023, <https://www.fisheries.noaa.gov/species/atlantic-sturgeon>.

Hudson rivers (Hilton et al. 2016). The shortnose sturgeon is predominately a riverine/estuarine species that is less likely to occur in the Offshore Project area. However shortnose sturgeon have been documented to occasionally venture outside of estuaries and enter other rivers in the Gulf of Maine, migrating through nearshore marine habitats (Dionne et al. 2013). Both sturgeon species may occur in the inshore Project area along export cable routes nearest to landfall sites and in the Chesapeake and Delaware estuaries where Project-related vessel trips are planned. Atlantic sturgeon enter the Chesapeake Bay in July and continue migrating into the James, York, and Pamunkey Rivers in Virginia to spawn in September (Hager et al. 2020, 2014; Kahn 2014; Balazik et al. 2012). Few shortnose sturgeon have been documented in Chesapeake Bay tributaries (Balazik 2017; Kynard et al. 2009; Welsh et al. 2002). More information is needed to evaluate the downstream movements of shortnose sturgeon in the Chesapeake Bay and its tributaries.⁵⁰

Regarding impacts to Atlantic Sturgeon from the Atlantic Shores South projects, BOEM maintains based on analyses in the Atlantic OCS, impacts from HRG survey multibeam echosounders are not likely to adversely affect fish species, including ESA-listed fish species such as Atlantic sturgeon (Baker and Howson 2021). However, there are many comments throughout the DEIS that say “likely, not likely,” in terms of impacts, but do not describe qualitatively or quantitatively what is meant by likely and not likely.

Further, it is unacceptable for the information regarding the assessment of impacts to an endangered species, such as the Atlantic Sturgeon, to be missing from the DEIS. As stated in the document, “BOEM is in the process of assessing the impacts of the Proposed Action on ESA-listed fish species in the BA. BOEM will continue to consult with NMFS under the ESA, and results of consultation will be included in the Final EIS.” The Final EIS will not have a public review and comment period, and therefore, interested groups and individuals that have knowledge and expertise with Atlantic Sturgeon populations and impacts will not be able to submit comments on the assessed impacts and proposed mitigation measures put forth by BOEM after the consultation with NMFS. This is another example of a deficiency in the DEIS.

There is insufficient data to support a lack of adverse effects from OSW activity on sturgeon spawning/mating behavior of Atlantic Sturgeon. The presence of structures, emplacement and maintenance of cables, and EMFs are impact producing factors (“IPFs”) that may impact migrating Atlantic sturgeon. The Draft EIS does not provide an adequate analysis of Atlantic Shores South’s impacts on Atlantic sturgeon. A recent study indicates that only 250 adults return to the Delaware River to spawn.⁵¹ Atlantic Shores South activities within the Delaware River, Delaware Bay, and open ocean need to be assessed for impacts to this endangered species. Of note, the Delaware Riverkeeper Network filed a 60-day notice of intent to sue the National Marine Fisheries Service for violating multiple sections of the Endangered Species Act. These violations concern the Biological Opinions issued to the Army Corps of Engineers for the New

⁵⁰ Bureau of Ocean Energy Management, “Atlantic Shores Offshore Wind South Draft Environmental Impact Statement,” BOEM 2023-0029 Docket Number: BOEM-2023-0030, May 2023, Volume 1: Chapters 1-4 , page 3.5.5-7.

⁵¹ See Shannon L. White, et al., Evaluating sources of bias in pedigree-based estimates of breeding population size, *Ecological Applications* (2021), <https://esajournals.onlinelibrary.wiley.com/doi/epdf/10.1002/eap.2602>.

Jersey Wind Port project and the Edgemoor Container Port project. According to the Network, if permitted by the Army Corps, these commercial ports could threaten the continued existence of the Delaware River Estuary's genetically unique population of Atlantic sturgeon.⁵²

Many questions must be adequately answered in an assessment of the impacts in the DEIS for this species, including **how will the Projects affect the spawning/mating behavior of the endangered species?** Again, the DEIS is deficient in assessing the impacts on the critically endangered Atlantic Sturgeon, which have already experienced risks and threats prior to the massive industrialization of the habitat of the species.

3. Impacts to Sea Turtles

This section discusses potential impacts on sea turtles from the proposed Project, alternatives, and ongoing and planned activities in the sea turtle geographic analysis area. The geographic analysis area, as shown on Figure 3.5.7-1, includes the Northeast Shelf, Southeast Shelf, and Gulf of Mexico LMEs. These LMEs capture most of the movement range of sea turtles within the U.S. Atlantic Ocean and Gulf of Mexico waters. Due to the size of the geographic analysis area, for analysis purposes in this EIS, the focus is on sea turtles that would likely occur in the proposed Project area and be affected by Project activities. The geographic analysis area does not include all areas that could be transited by Project vessels (e.g., it does not consider vessel transits from Europe). These transit regions continue to impact sea turtles as many species, including loggerhead and leatherback, are known to migrate from parts of Europe to the United States regularly⁵³.

*Five species of sea turtles have been documented in U.S. waters of the northwest Atlantic Ocean, where the Offshore Project area occurs: green (*Chelonia mydas*), hawksbill (*Eretmochelys imbricata*), Kemp's ridley (*Lepidochelys kempii*), leatherback (*Dermochelys coriacea*), and loggerhead (*Caretta caretta*). All five species are listed under the ESA; hawksbill, Kemp's ridley, and leatherback sea turtles are listed as endangered, and green and loggerhead sea turtles are listed as threatened. Critical habitat has been designated for green, hawksbill, leatherback, and loggerhead sea turtles; however, critical habitat for these species is not within or in the vicinity of the Offshore Project area.*

Hawksbill sea turtles occur regularly in the Gulf of Mexico; however, according to BOEM, vessel traffic is the only Project activity that could affect sea turtles in this region, and only 20 vessel round trips to the Gulf of Mexico are expected for the Project. Given the low number of vessel trips and the vessel strike avoidance measures that would be in place (Section 3.5.7.5, Impacts of Alternative B),

⁵² *Delaware Riverkeeper Network Intends To Sue NOAA Fisheries Over Wind*, The Fisherman (Aug. 22, 2022), <https://www.thefisherman.com/article/delaware-riverkeeper-network-intends-to-sue-noaa-fisheries-over-wind/>.

⁵³ "Loggerhead Turtle Satellite Telemetry Data in the Atlantic Ocean". https://static1.squarespace.com/static/5b80290bee1759a50e3a86b3/t/5c522a100ebbe8333b64b72e/1548888595442/SWOT14_18-19_Loggerheads_map.pdf

impacts in the Gulf of Mexico are considered unlikely. Therefore, hawksbill sea turtle will not be evaluated further in this EIS.

Table 3.5.7-3 describes sea turtle hearing ranges, however, the sea turtle hearing studies referenced are 10+ years old. This has not been assessed recently. Much like for marine mammals, “baseline” impacts to sea turtles are listed in depth based on non-offshore wind activities that would only be amplified through OSW. Also, according to the DEIS, “The vertical buoy and anchor lines associated with monitoring surveys using fixed gear, such as fish traps or baited remote underwater video, could pose a risk of entanglement for sea turtles.” Any kind of towed array or trawl survey could cause entanglement/drowning of sea turtles.

In addition, the DEIS states, “Pile driving is expected to occur for up to 7 to 9 hours at a time for monopiles, and 3 to 4 hours at a time for pin piles as 2,974 WTGs and 39 OSSs/ESPs and met towers are constructed between 2023 and 2030 (Appendix D, Tables D.A2-1 and D.A2-2). The intense, impulsive noise associated with impact pile driving can cause behavioral or physiological effects. Potential behavioral effects of pile-driving noise include altered dive patterns, short-term disturbance, startle responses, and short-term displacement (NSF and USGS 2011; Samuel et al. 2005). These studies are outdated. What current studies are available?

Also, potential physiological effects include temporary stress response and, close to the pile-driving activity, TTS or PTS. Behavioral effects and most physiological effects are expected to be of short duration and localized to the ensonified area. PTS could permanently limit an individual’s ability to locate prey, detect predators, or find mates and could therefore have long-term effects on individual fitness. **BOEM expects that sea turtles would be displaced for up to 18 hours per day during foundation installation**, depending on the type of WTG, OSS, ESP or met tower foundation.” BOEM’s 18-hour estimate for daily sea turtle displacement is nearly the duration of a full day. It is important to consider, then, if these activities will occur daily. If so, at what point does this displacement become permanent?

Further, according to the DEIS, cumulative impacts on sea turtles from ongoing and planned activities, including the Proposed Action, would range from **negligible to minor adverse** and would also include minor beneficial impacts. Beneficial effects, however, may be offset given the increased risk of entanglement due to derelict fishing gear on the structures. If beneficial impacts are outweighed by the adverse in this scenario, more concrete and effective mitigation measures must be put in place.

Regarding oversight and monitoring, BOEM, the Bureau of Safety and Environmental Enforcement (“BSEE”), and NMFS will meet twice in the first year of operation to review sea turtle observation records and any incidental take. The agencies will meet annually following the first year of operation. When will this occur? Through the lifecycle of projects, including through decommissioning? What actions will be taken if take number exceed expected amounts?

In addition, population dynamics and habitat use of different sea turtle species along the New Jersey shore is still poorly understood. Sea turtles in the geographic analysis area are subject to a variety of ongoing human-caused impacts, including collisions with vessels, entanglement with fishing gear, fisheries by-catch, dredging, anthropogenic noise, pollution, disturbance of marine and coastal environments, effects on benthic habitat, accidental fuel leaks or spills, waste

discharge, and climate change. Sea turtle migrations can cover long distances, and these factors can have impacts on individuals over broad geographical scales.

There are additional impacts to sea turtles not adequately addressed in the DEIS.

a. Electromagnetic Fields

The EMFs produced by cables have the potential to affect sea turtle migration because they are known to possess geomagnetic sensitivity and use cues from Earth's magnetic field for orientation, navigation, and migration. Sea turtles are able to detect certain thresholds of magnetosensitivity which can cause behavioral responses that vary by species.

Juvenile and adult sea turtles may detect the EMF when resting on the bottom or foraging on benthic organisms near cables or concrete mattresses. There is little to no data on impacts on sea turtles from EMFs, however many studies show prey species being impacted by EMF.

b. Habitat Disruption

The geographic analysis area for Atlantic Shores DEIS does not include all areas that could be transited by Project vessels (e.g., it does not consider vessel transits from Europe or from parts of the Gulf of Mexico). The geographic and temporal distribution of sea turtle species in the NY/NJ Bight is limited. Again, BOEM expects that "sea turtles would be displaced for up to 18 hours per day during foundation installation, depending on the type of WTG, OSS, ESP or met tower foundation." Also, wind turbines have the potential to act as navigational hazards to Sea turtles which could disrupt their migration, foraging, and mating behaviors. Displacement from their currently designated critical habitat within the project area will result in cascading trophic effects.

c. Vessel Strikes and Entanglement

Vertical buoy and anchor lines associated with monitoring surveys using fixed gear, such as fish traps or baited remote underwater video, could pose a risk of entanglement for sea turtles. Despite mitigation efforts, the DEIS also highlights a potential for entanglement in trawling survey activities. Any beneficial effects mentioned in the proposed action plan, may be offset given the increased risk of entanglement due to derelict fishing gear on the structures. Light from vessels, turbines, and substations attracts turtles and may cause disorientation leading to vessel strikes.

d. Noise from construction and operation

The intense, impulsive noise associated with impact pile driving can cause behavioral or physiological effects. Potential behavioral effects of pile-driving noise include altered dive patterns, short-term disturbance, startle responses, and short-term displacement (NSF and USGS 2011; Samuel et al. 2005). Potential physiological effects include temporary stress response and, close to the pile-driving activity, TTS or PTS.

Studies on sea turtle hearing frequencies and ability to perceive noise from the proposed actions is limited to studies that are over ten years old with small sample sizes outside local project area.

Impacts to Marine Mammals

Section 3.5.6 discusses potential impacts on marine mammal resources from the proposed Project, alternatives, and ongoing and planned activities in the marine mammal geographic analysis area. The marine mammal geographic analysis area, as shown in Figure 3.5.6-1, includes the Canadian Scotian Shelf, Northeast Shelf, Southeast Shelf, and Gulf of Mexico LMEs. The geographic analysis area includes the Gulf of Mexico LME because vessel transits between the Lease Area and Corpus Christi, Texas, may affect species in the Gulf of Mexico. This area is intended to capture the majority of the movement range for most marine mammal species that could be affected by the Project. However, to be protective of marine mammals in the region – all of which are federally protected – BOEM should understand and consider all movements of all marine mammals with regard to the Proposed Action.

Also, the DEIS states, “Thus, it is practical to assume that the impacts discussed in this Draft EIS are subject to some level of uncertainty. Studies on potential effects of EMF on marine mammal individuals are underdeveloped, and population-scale impacts have not been assessed.”⁵⁴ Further, a majority of the entire Marine Mammal section in Appendix E talks about the lack of information: “Research on marine mammal impacts from pile-driving noise are limited to studies on harbor porpoises and pinnipeds; research on baleen whale responses to pile driving is lacking. Most studies conclude that pile-driving noise could induce avoidance behavior or disrupt feeding activities, but behavior and activities would return to normal following cessation of pile driving. However, there is uncertainty regarding the long-term cumulative acoustic impacts associated with multiple pile-driving projects that may occur over a number of years. Long-term impacts of offshore wind-related noise including from vessel activity, HRG surveys, geotechnical drilling, and dredging on marine mammals are also uncertain. Because of this uncertainty, it is not possible to confidently predict long-term impacts of noise on marine mammals. Monitoring studies would provide insight into species-specific behavioral reactions to Project-generated underwater noise. Long-term monitoring of concurrent and multiple projects could inform the understanding of long-term effects and subsequent consequences from cumulative underwater noise activities on marine mammal populations.

Fifty species of marine mammals are known to occur or could occur in U.S. waters of the northwest Atlantic Ocean, which includes the Northeast Shelf LME and is where almost all Project activities would occur: 6 mysticete species (i.e., baleen whales), 39 odontocete species (i.e., toothed whales, dolphins, and porpoises), 4 pinniped species (i.e., seals and sea lions), and 1 sirenian species (i.e., manatees and dugongs) (CSA Ocean Sciences 2020; BOEM 2021c).

The Biological Assessment (“BA”) for Atlantic Shores South provides a detailed discussion of ESA-listed species and potential impacts on these species as a result of the Project. A preliminary draft of the BA found that the Proposed Action is likely to adversely affect ESA-listed marine mammal species (i.e., fin whale, NARW, sei whale, and sperm whale) but is expected to have no effect on critical habitat designated for NARW. The Offshore Project area lies south of a seasonal management area for NARW and overlaps a biologically important area

⁵⁴ Bureau of Ocean Energy Management, “Atlantic Shores Offshore Wind South Draft Environmental Impact Statement,” BOEM 2023-0029 Docket Number: BOEM-2023-0030, May 2023, Volume 1: Chapters 1-4 , page E-4.

for NARW migration (December to February) (Figure 3.5.6-2). How is it likely to affect the NARW species but also have no effect on critical habitat for the NARW at the same time?

Of the 50 species that are known to occur or could occur in the northwest Atlantic OCS, 35 have documented ranges that include the Offshore Project area (Table 3.5.6-1). For the purposes of the description of the affected environment in this Draft EIS, the focus is on the 9 species of marine mammals that would be likely to have regular or common occurrence in the Offshore Project area, as well as two additional ESA-listed species expected to experience acoustic effects of the Proposed Action (i.e., sei whale and sperm whale). What about the impacts of the remaining 41 species known to occur in the region? BOEM falls short in this section of reviewing the impacts to all potentially affected marine mammals identified in the region. Further, not much is about acoustic impacts to baleen whales.

Four additional odontocete taxa—Atlantic spotted dolphin, Atlantic white-sided dolphin, pilot whales, and Risso’s dolphin—are expected to experience acoustic effects of the Proposed Action (Section 3.5.6-8). However, impacts to these animals were not discussed in the body of this section. What are the expected impacts?

In addition, marine mammal Incidental Take Authorizations are approved and issued by the National Marine Fisheries Service (“NMFS”) on a rolling basis throughout the lifecycle of an offshore wind project. These “takes” allow companies conducting offshore activities, including for preconstruction, construction, operations and maintenance, and decommissioning of an offshore wind project, to harass marine mammals. Clean Ocean Action compiled the marine mammals impacted by all active, in process, and expired take authorizations since 2014 off the NY/NJ coast and East Coast for offshore wind projects. In the NY/NJ Bight, **689,061** total marine mammal takes have been proposed, authorized, and expired for offshore wind energy projects. Unfortunately, BOEM and NMFS, by consultation, do not consider cumulative impacts from taking authorizations into account for environmental review processes.

Considering all IPFs together, BOEM anticipates that cumulative impacts would result in minor impacts on odontocetes and pinnipeds, moderate impacts on mysticetes other than NARW, and moderate to major impacts on NARW. It is concerning at best that BOEM considers impacts to these animals as negligible, considering the studies that show impacts of industrial activities, particularly from noise, on marine mammals.

a. Noise Pollution

Studies have shown that construction noise related to offshore wind facilities (especially pile driving) may cause behavioral changes and negative impacts on seals, porpoises, dolphins, and whales. Volume 1 Ch. 3.5.6 states that direct measurements of mysticetes (baleen whale) hearing are lacking and that initial stock assessments of many of the marine mammal populations are lacking or nonexistent. With such a lack of background information on populations and their potential impact from noise pollution, how will accurate protection of marine mammals take place, including for avoidance and mitigation? Protective measures such as bubble curtains have shown no success in reducing impact to baleen whales in particular.

Disruption effects on marine mammals have been measured up to 20 miles from the construction site. Four odontocete taxa—Atlantic spotted dolphin, Atlantic white-sided dolphin, pilot whales, and Risso’s dolphin—are expected to experience acoustic effects of the Proposed Action according to the DEIS. However, information on these mammal populations and the specific impacts to each species are not mentioned in the body of text since they are “uncommon” in the project area.

Marine mammals will also be impacted by noise from operation and maintenance activities for Atlantic Shores South. This noise includes the noise from the turbines themselves, which emit a constant low-frequency noise, and also the increased vessel traffic from operations and maintenance (O&M) activities. The operational noise stems from vibrations in the tower caused by the gearbox mesh in addition to the generator, causing underwater noise.

According to the DEIS, hearing abilities are generally only well understood for smaller species for which audiograms (i.e., plots of hearing threshold at different sound frequencies) have been developed based on captive behavioral studies, which rely on captive animals to react to sounds, and electrophysiological experiments, which measure auditory evoked potentials on captive or stranded animals (Erbe et al. 2012). Audiograms have been obtained in some odontocetes and pinniped species (Finneran 2015; Southall et al. 2007), while direct measurements of mysticetes hearing are lacking (Ridgway and Carder 2001). Baleen whale hearing sensitivities have therefore been estimated based on anatomy, modeling, vocalizations, taxonomy, and behavioral response studies (Au and Hastings 2008; Cranford and Krysl 2015; Dahlheim and Ljungblad 1990; Houser et al. 2001; Reichmuth 2007; Richardson et al. 1995; Southall et al. 2019 citing Ketten and Mountain 2011, 2014; Wartzok and Ketten 1999). It is important to note that almost all of the studies in this section (3.5.6-16) are more than 10 years old.

b. Strikes

Increased vessel activities may result in increased strikes with marine mammals, such as the critically endangered Northern Atlantic right whale. This includes from construction, operation, maintenance, and decommissioning activities. Wind projects will displace other marine commerce and transit, funneling those vessels into narrower lanes which may increase strikes. The DEIS states, “The presence of offshore wind facility structures could result in avoidance and displacement of marine mammals, which could potentially move marine mammals into areas with lower habitat value or with higher risk of vessel collision or fisheries interactions.” If both fishermen and marine mammals are forced into the same areas outside of the Wind turbine areas, will there be an increase in potential of vessel strikes?

The Draft EIS does not account for competing uses and navigation impacts of offshore wind facilities, including the possibility of collisions and accidents. There are concerns about the impacts from and response plans to accidents with vessels of all sizes and the impact of spills in the Projects’ Areas. With increased or altered traffic patterns, the risk of collisions and spills of gas, oil, and chemicals may increase, with negative effects to water quality and marine life. Exposure to oil and other hydrocarbons from oil spills can drastically affect marine mammals and ecosystems.

Further, vessel strike mitigation is vital to reducing collisions between both commercial and noncommercial vessels and North Atlantic right whales.¹⁰ The DEIS should also assess and require increased spacing between offshore wind turbines in high-traffic areas through either increased spacing based on consultation with the National Marine Fisheries Service and the United States Coast Guard.

c. Deficiency in Protecting Marine Mammal Populations

The DEIS states many of the Marine mammal species stock assessments of non-endangered species are described as “more research is necessary to be definitive” or “a trend analysis has not been conducted for this stock.” COA maintains it is essential to find out more about these species populations before proceeding with the Proposed Action. The humpback is listed as a species that needs more research on population. It is also a species whose deaths is characterized as an Unusual Mortality Event (“UME”), a whale that has recently stranded in unprecedented numbers in the NY/NJ region, and a baleen whale, which BOEM admits to not knowing much about the acoustic impacts to in Appendix E.

Further, of the nine species included in Table 3.5.6-3, “Population information for marine mammals likely to occur in the Project area,” only one shows increasing population trends, one decreasing, and the rest have unavailable or no information on trends. This is concerning. How can BOEM determine population impacts with no information on trends for a majority of the species to be affected? Here, the DEIS is incomplete.

In addition, Table 3.5.6-5 displays impact level definitions for marine mammals. These qualitative descriptions leave a lot of wiggle room for subject matter experts. Further, in Table 3.5.6-6. Severe intensity impact is defined by “One or more death or injury of a species at risk” but in Appendix G BOEM mentions catch of sturgeons and turtles (dead or alive) used for sampling. Why doesn’t this qualify turtles or sturgeon (or marine mammals if they can be linked eventually to OSW) as severely impacted?

Ongoing non-offshore wind activities that would continue in the “No action alternative” would include: “Coastal and offshore development, marine transport, and fisheries use and associated impacts are expected to continue at current trends and have the potential to affect marine mammals through accidental releases, which can have physiological effects on marine mammals; electric and magnetic fields and cable heat, which may result in behavioral changes in marine mammals; cable emplacement and maintenance and port utilization, which can disturb benthic habitats and affect water quality; noise, which can have physiological and behavioral effects on marine mammals; the presence of structures, which can result in behavioral changes in marine mammals, effects on prey species, which can affect prey availability for, and distribution of, marine mammals, and increased risk of interactions with fishing gear; and vessel traffic, which increases risk of vessel collision.” The list BOEM provides for impacts of non-OSW activities including Climate change. Overall, this list has very similar impacts to the Proposed Action plan. Where is the evidence that shows Atlantic Shores South is beneficial if the impacts are so similar to that of the No Action Alternative.

“The cumulative impact analysis for the No Action Alternative considered the impacts of the No Action Alternative in combination with other planned non-offshore wind activities and planned

offshore wind activities (without the Proposed Action).” If this is reflective of what our ocean is currently facing, where is the evidence in the DEIS the shows adding OSW as a source of many of the same kinds of threats going to benefit the ocean and marine life, rather than adversely impact these resources.

All studies mentioned in the DEIS showed evidence of area avoidance during pile driving for marine mammals. Most of these studies were in other ocean habitats and therefore not fully reflective of how sound propagates in the local NY/NJ Bight ecosystem (e.g., different salinity, temperature, benthic area, and wave structures). Also, different families and groups of marine mammals around the world, even of the same species, tend to respond to noise in their own way based on learned behavior. “As there are no studies that have directly examined the behavioral responses of baleen whales to piledriving, studies using other impulsive sound sources (e.g., seismic airguns) serve as the best available proxies.” It is later stated that, “The loudest source of underwater noise associated with the Proposed Action would be impact pile driving during construction and installation.”⁵⁵

Also, Section 3.5.6-56 states, “heat from Project cables would not impact marine mammals. Above-sediment cables would be cooled by the water, while heat from buried cables would be restricted to sediments (Taormina et al. 2018).” If the water is absorbing heat from cables, it will change the temperature distribution of our water column, even if it is a small change. What is the expected impact of the warmer bottom waters?

Table 3.5.6-8 exhibits the estimated number of marine mammals exposed to HRG survey noise exceeding the behavioral threshold. The DEIS states, “Results of the noise evaluation for HRG survey activity indicate that marine mammals exposed to sound levels exceeding the behavioral threshold over 5 years of surveys range from up to 5 Atlantic spotted dolphins, humpback whales, NARWs, Risso's dolphins, sei whales, and sperm whales to as many as 1,125 bottlenose dolphins from the offshore stock.” This chart indicates 3,080 individual marine mammals will experience behavioral changes in the project area over the 5-year window. What are they? The behavioral changes are not fully understood.

In addition, The Draft EIS primarily relies on a comprehensive paper by Southall (Southall, 2021), which is a compendium of several research studies, to estimate likely PTS, TTS and Exposure Ranges to marine mammals. While this is a reasonable approach, it does not completely address the urgent and priority concerns pertaining to ALL marine mammals in the project area and its vicinity. Southall(2021) DOES NOT address baleen whales and the DEIS not addressing this category specifically and relying on supplementary information is a glaring omission. Southall (2021) summarizes some challenges and limitations which are produced below:

- Mysticetes and odontocetes should be considered separately given their different life history strategies. Mysticetes are known to be capital breeders, accumulating energy on feeding grounds and transferring energy to calves in breeding grounds, whereas

⁵⁵ Bureau of Ocean Energy Management, “Atlantic Shores Offshore Wind South Draft Environmental Impact Statement,” BOEM 2023-0029 Docket Number: BOEM-2023-0030, May 2023, Volume 1: Chapters 1-4 , pages 3.5.6-58.

odontocetes are generally considered income breeders with less discrete feeding and breeding periods occurring throughout the year. Given that anthropogenic activities generally focus on specific habitats within an animal's home range (e.g., feeding or breeding grounds), this may affect their ability to compensate for disturbances.

- Toothed whales and baleen whales show varying levels of sensitivity to mid-frequency impulsive noise sources (i.e., active sonar, pile driving), with observed responses ranging from displacement to avoidance behavior (animals moving rapidly away from the source) decreased vocal activity, and disruption in foraging patterns.

The DEIS states,

Considering all IPFs together, BOEM anticipates that the cumulative impacts would result in minor impacts on odontocetes and pinnipeds, moderate impacts on mysticetes other than NARW, and moderate to major impacts on NARW. BOEM made this determination because the anticipated impact would be notable and measurable, but most marine mammals are expected to recover completely when IPF stressors are removed and remedial or mitigating actions are taken. However, impacts on individual NARWs could have severe population-level effects.⁵⁶

This again seems contrary to the introductory statements that the NARW habitat will not be critically affected. Are the potential cascading effects of functionally removing a species like the NARW being considered? Again, scientists warn that “not one” NARW can be impacted to ensure the continuation of the species. While not as dire for other species, the cumulative impacts of offshore wind energy development must be carefully considered for all species, especially those that are endangered, threatened, or protected.

Impacts on Fish / Benthic Species

- *Electromagnetic Fields*

Up to eight export cables, including offshore export, inter-array, and possibly inter-link, are expected with the Atlantic Shores projects. The orientation of fish may be impaired by the magnetic fields surrounding electric cables and thus impact migration patterns.

Electricity produced at offshore wind farms is usually transmitted to shore through high voltage alternating or direct current cables. The current in these cables creates electric and magnetic fields (EMF). While the electric field generated by the current is isolated within the cable, the magnetic field is measurable around the cable.

There has been significant concern about the impact on crustaceans and their sensibility to EMF as it can impact their ability to locate food and may cause avoidance of large areas.

⁵⁶ Bureau of Ocean Energy Management, “Atlantic Shores Offshore Wind South Draft Environmental Impact Statement,” BOEM 2023-0029 Docket Number: BOEM-2023-0030, May 2023, Volume 1: Chapters 1-4, page 3.5.6-69.

Fish species that employ electrical currents for orientation such as sharks and rays, eels and electric fish are the most sensitive. It has been suggested that many such species may be able to detect EMF at a distance over 1,000 ft.

- *Once-through cooling system*

An equally important concern that could cause potential harm to marine life are the intakes and discharges related to cooling offshore wind conversion stations for Atlantic Shores South, as well as cumulatively, the intakes and discharges from other offshore wind projects.⁶¹ This has not been given enough attention considering that the lifetime of the Project is 25-30 years, and the impacts are great to marine life. The Draft EIS acknowledges that potential effects are likely and include altered micro-climates of warm water surrounding outfalls, altered hydrodynamics around intakes/discharges, prey entrainment, and association with intakes if prey are aggregated on intake screens from which marine mammals scavenge. However, it concludes that these long-term impacts would be localized and low in intensity. What were the references used to determine this conclusion? The Proposed Action includes up to 10 substations that will be in operation for up to 25-30 years, alongside the other proposed offshore wind projects with multiple substations each.

The DEIS states, “if HVDC cables are used, offshore converter stations using closed-loop cooling technologies would be installed.” Yet, one of the most recent reports by BOEM (BOEM, 2022) on offshore wind substations, specifically HVDCs, states that “innovations in cooling systems are being studied and developed, but so far, no new systems are tested and available for use on a commercial scale.”⁵⁷ Are there similar studies that the Draft EIS used to make this assessment? Therefore, it can be expected that once-through cooling systems for up to 10 offshore substations will be used and will impact small animals through impingement, entrainment, and heated water. The DEIS fails to assess and review the once-through cooling system as an option, most likely the only option, for substation cooling systems used for Atlantic Shores South. BOEM should have rejected AA Shores’ stated use of a technology that does not yet exist. The DEIS is incomplete and should include the assessment of the once-through cooling system impact on the project area.

- *Habitat Change*

Introducing hard substructures into the marine environment creates artificial reefs leading to the settlement of marine organisms in the area. This can be positive, as well as negative. It increases biodiversity but can also potentially introduce new harmful species (including invasive species) and disrupt food chains. The creation of these large homogenous changes to the sea floor will significantly change the environment and the impact it has on marine life is uncertain and could result in displacement. How did BOEM determine such widespread physical change of a habitat will not be impactful to habitat?

⁵⁷ Bur. Ocean Energy Mgmt., Supporting National Environmental Policy Act Documentation for Offshore Wind Energy Development Related to High Voltage Direct Current Cooling Systems (2022), <https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/HVDC%20Cooling%20Systems%20White%20Paper.pdf>

Impacts to Birds

Offshore wind energy development, including Atlantic Shores South, will have impacts on avian species, including displacement of habitat, risk of collision, and migration barriers. Behavioral responses to offshore wind projects may cause birds to avoid previously used habitats. This phenomenon has been dubbed displacement. At Robin Rigg offshore wind farm in Scotland, the monitoring program showed evidence of a decrease in the number of common scoter (*Melanitta nigra*) one year after construction.

There is concern for birds colliding with wind turbines. This has been a big issue with onshore wind projects, specifically in the middle of the country. Weather increases the risk of collision, and the ocean is an area with some of the harshest weather conditions, which will only increase due to climate change impacts.

The barrier effect may have a negative impact on birds. The birds' behavioral avoidance response to the wind farm may lead to detours circumventing the structures, ultimately extending the total flying distance and energy use. This energy loss is critical for birds experiencing other stressing factors to their populations. Furthermore, for species such as the common eider (*Somateria mollissima*) the reproductive success is related to the females' body reserves during the breeding period. By increasing the energy use for common eiders their body mass may drop, thus affecting the breeding output. Results from the monitoring programs at Nysted and Horns Rev offshore wind farms in Europe showed that all birds generally avoid wind farms if they block migration pathways. The specific level of avoidance depends on the species with some going further out of their way to avoid the area. Over 50 percent of the birds avoided passing through the wind farms at half a mile to a mile.

Impacts to Competing Ocean Uses

The ocean is already home to numerous industries and activities. The Atlantic Shores' DEIS must consider and address the concerns regarding a number of competing ocean uses.

A. Navigation Impacts – Funneling Navigation into Narrow Corridors

The DEIS does not adequately consider the top-down impacts of the increased vessel activity, increased onshore activity, shifts in recreational and commercial ocean uses, and the foundation, cabling, and interconnection infrastructure associated with the projects. In sum, the DEIS does not adequately consider changing traffic patterns, navigational safety, and port access conflicts.

More specifically:

- The Port of New York and New Jersey is a massive economic enterprise that is a hub for vessel traffic. There are four container terminals in the port, whose combined volume makes it the largest on the East Coast, the third busiest in the United States.
- A large area of the Outer Continental Shelf (OCS) has been leased for offshore wind development without any comprehensive analysis of the fishing industry's need for safe

transit or how the installation of large numbers of offshore structures will impact the operations of fishing vessels.

- The port imports petroleum, plastics, chemicals, oils and perfumes, pharmaceuticals, and other materials that if spilled into the ocean would be devastating. The port of NY/NJ is the largest U.S. petroleum product port.
- The spill response plan does not take into account plans for chemical spills in the project area.
- There is also concern that the development of these wind projects in close proximity will displace transit corridors and create narrow lanes where vessels are expected to travel. This could lead to an increase in accidents and spills.
- One danger is that vessel density – ships operating within the same sea space – would be increased by the funneling effect of constricting traffic between turbine arrays.
- Another consideration is the radar shadow effect of rotating turbine blades that can affect navigation radars.
- Another consideration is the speed and agility of large ships maneuvering a small, competitive space. For example, it can take an ultra large 2.5 miles of full astern to brake to a halt.

Coastal Development and Industrialization

Another area of consideration is the onshore infrastructure necessary to manage this new coastal-dependent industry. Each offshore wind energy project will need operation and maintenance facilities. Further, there is the need for larger manufacturing centers and marshalling ports. Environmental impacts must be considered for onshore infrastructure associated with the Projects. For example, the northern route of the onshore transmission will come ashore in the Sea Girt, NJ, area, where in 2007 and 2013, rare species monitoring and protection services and habitat management is being conducted at the Sea Girt National Guard Training Center in New Jersey. Various enhancements and measures were completed to reduce erosion and runoff and to improve localized water quality. The addition of offshore wind onshore cables and infrastructure must not interfere with local ecosystem and community improvements.

Overall, in Volume 1, Section 4.10, the COP gives an inadequate description of necessary onshore facilities. The EIS fails to include specific and clear descriptions of the potential onshore facilities. The COP EIS must account for all potential port activities. The EIS must also include the following for operation and maintenance:

- Type of maintenance approach (ship-based, air support);
- Land use requirements;
- Proximity to the offshore wind farm;
- Storage capabilities for spare components;
- Wharf area required bearing capacity;
- Ship depth requirements; and
- Secondary impacts from influx of workers and support services.
- Specifically, COA advocates that the DEIS review land-based facilities that are or may be used for development of wind turbine generators as well as operation and management.

For these facilities, it is essential to:

- Reduce the overall footprint; and
- Be climate resilient; and
- Be as energy efficient as possible; and
- Be sited in environmentally friendly locations.

Unavoidable Impacts (DEIS Chapter 4)

Table 4.1-1 exhibits the potential unavoidable adverse impacts of the Proposed Action. Do the risks outweigh the returns if these impacts occur or are observed? Since these impacts are admittedly “potentially unavoidable” are the measures being taken to try to avoid them (i.e., as seen in Appendix G) sufficient? What are the criteria to assess and evaluate successful measures?

Table 4.2-1 describes the irreversible and irretrievable commitment of resources by resource area for the Proposed Action. The CEQ considers a commitment of a resource irreversible when the primary or secondary impacts from its use limit the future options for its use. An irretrievable commitment refers to the use, loss, or consumption of a resource, particularly a renewable resource, for a period of time. For marine mammals, **irreversible impacts on populations could occur**

Resource Area	Potential Unavoidable Adverse Impacts of the Proposed Action
Finfish, Invertebrates, and Essential Fish Habitat	<ul style="list-style-type: none"> • Temporary loss of seagrass resources within Chelsea Harbor and Great Thoroughfares due to cable emplacement • Suspension and re-settling of sediments due to seafloor disturbance during construction • Displacement, disturbance, and avoidance behavior due to construction-related impacts, including noise, vessel traffic, increased turbidity, sediment deposition, EMF, and habitat changes • Individual mortality due to construction activities • Changes in habitat and community structure from conversion of soft-bottom habitat to new hard-bottom habitat
Marine Mammals	<ul style="list-style-type: none"> • Increased risk of injury (TTS or PTS) to individuals due to underwater noise from pile-driving activities during construction • Disturbance (behavioral effects) and acoustic masking due to underwater noise from pile driving, vessel traffic, aircraft, geophysical surveys (HRG surveys) and geotechnical drilling surveys, WTG operation, and dredging during construction and operations • Increased risk of individual injury and mortality due to vessel strikes during construction and installation, O&M, and decommissioning • Increased risk of individual injury and mortality associated with fisheries gear
Sea Turtles	<ul style="list-style-type: none"> • Increased risk for individual injury and mortality due to vessel strikes during construction and installation, O&M, and decommissioning • Disturbance, displacement, and avoidance behavior due to habitat disturbance and underwater noise during construction • Potential, but minor, EMF effects on migration
Wetlands	<ul style="list-style-type: none"> • Wetland and surface water alterations, including increased sedimentation deposition and removal of vegetation

if one or more individuals of an ESA-listed species were injured or killed or if those populations experienced behavioral effects with severe consequences. With implementation of mitigation measures, developed in consultation with NMFS (e.g., timing windows, vessel speed restrictions, safety zones), the potential for an ESA-listed species to experience behavioral effects with severe consequences or be injured or killed would be reduced. No irreversible high-severity behavioral effects from Projects’ activities are anticipated; however, due to the uncertainties from lack of information that are outlined in Appendix E, Analysis of Incomplete and Unavailable Information, these effects are still possible. Irretrievable impacts could occur if growth of individuals or populations is retarded as a result of displacement from the Project area.

Regarding Sea Turtles, **irreversible impacts on sea turtles could occur** if one or more individuals of species listed under the ESA were injured or killed; however, the implementation of mitigation measures, developed in consultation with NMFS, would reduce potential impacts on listed species. Irretrievable impacts could occur if growth of individuals or populations is retarded as a result of injury or mortality due to vessel strikes or entanglement with fisheries gear caught on the structures, or due to displacement from the Project area.

Mitigation Measures

Working to avoid and minimize impacts on the ocean and coastal environment is essential and must be a main goal of offshore wind energy development, as it is with any offshore or onshore activity. The DEIS does not identify measurable, meaningful, and actionable effective mitigation measures for when impacts cannot be avoided or minimized.

For example, the COP asserts that Atlantic Shores may need to mitigate cable exposure by re-burying multiple cables over the lifetime of the projects. The COP also indicates that impacts to onshore and coastal ecosystems is likely. Specific mitigation of impacts to wetlands, seagrass beds, and other habitat are not specifically analyzed in the DEIS. Particular attention should be paid to the seasonality of seagrass beds. Further, analysis of the impacts to seagrass beds should be analyzed beyond turbidity. The spatio-temporal variability in the distribution of vulnerable species should also be considered.

Table G1 in the DEIS states, “Please note that not all of these mitigation measures are within BOEM’s statutory and regulatory authority, and some may be required by other governmental entities.” Are these other governmental entities required to sign off or weigh in on the FEIS/record of decision? What agencies are meant by “other governmental entities?” Will there be public engagement and comment periods? Recently, the BOEM Modernization Rule delegates authority and oversight to the federal Bureau of Safety and Environmental Enforcement (“BSEE”). What are those authorities and oversight duties as they relate to BOEM’s and a DEIS/FEIS? Also, regarding Table G-1, for Applicant-proposed environmental protection, there is no key available for measure number/name.

In addition, it is stated in the DEIS that best practice is not an enforceable measure, yet BOEM provides best practices as methods. How will BOEM make sure these “best practices” are actually happening? What happens if these commitments are fulfilled since they are not enforceable? Almost all of the “GEO-“ and “OCE-“ measures in the DEIS are “best practice” and not enforceable.

More specifically:

- For GEO-25, “Establish a hotline and contact information, including email, phone number, and a defined protocol for cable maintenance and management,” tis hotline will be the appropriate resource for contact prior to renourishment project actions and should be the contact in the case of an exposed cable. Why is this only best practice and not required?

- For GEO-27-32, the Environmental Protection Plan and Fisheries Protection Plan, reporting process, and financial responsibilities, Atlantic Shores has agreed to “report annually in writing to [the New Jersey Board of Public Utilities] and [the New Jersey Department of Environmental Protection] beginning June 30, 2022, on actions taken to ensure environmental protection, fisheries protection, mitigation of environmental and/or fishing impacts. Are any of these reports available to the public yet as mentioned in GEO 32?
- For AQ-08 – perform maintenance to fix seals as soon as feasible when SF6 leak is detected – are there time limits on how long they can take to fix these issues (i.e., within hours, days, months)? What mitigation/correction measures are in place if the leak continues for enough time to release harmful levels of SF6?
- For WAT-06, project facilities will avoid public water supplies/wellhead protection areas to the maximum extent practicable, what happens if there are links between facilities and public water supply? Is there any kind of insurance in place for potential impacts to public water? Why is this measure not required/enforceable?
- COA-09, assign environmental/construction monitor(s) to ensure compliance with applicable permit conditions and that BMPs are functional, are these 3rd party individuals? Who will be responsible for paying them/who will they report to since the measure is BMP/not enforceable?
- For BEN-08 – implement a benthic habitat monitoring plan to measure and assess the disturbance and recovery of marine benthic habitats and communities because of Project construction and operation –who will be onboard construction vessels to handle monitoring and proper execution of plan?
- For FIN-03, bury interarray, interlink, and export cables to a target depth of 5 to 6.6 feet (1.5 to 2 meters) is also best practice and not enforceable. In Chapter 3 of Vol 1, it mentions that the heat from cables will be absorbed by sediment. Will this impact the recolonization of benthic species (specifically burrowing species) over/around the cables? Especially ones that are very temperature sensitive?
- In addition, there are so many “Anticipated Enforcing Agencies” listed for each protection measure. Who will specifically handle which issues? How will workers know who to contact in case of questions on specific protection measures?
- For MAR-12, “soft starts will be considered for impact pile driving,” these should be required to deter any marine life and allow adequate time for them to move out of impact range. Also, for both MAR- and SEA- sections there are mentions of vessel avoidance measures using Protected Species Observers (“PSO”) and Passive Acoustic Monitoring (“PAM”) devices. How accurate are these combined efforts in identifying all the individuals in the monitoring zone? It can be very difficult to see a marine mammal or sea turtle from a distance if you are not looking in the right place at the right time when

they surface. If no vocalizations occur during the time frame they are monitoring (e.g., 30 min?) the animals may go unnoticed.

- For LOA-11, Atlantic Shores will implement vessel strike avoidance measures, many of the survey vessels are restricted in their ability to maneuver as seen in Local Notice Reports to Mariners from the U.S. Coast Guard. Are those vessels not required to follow vessel strike avoidance?
- For LOA 31, if a marine mammal is detected entering or within the respective SZs after pile driving has commenced, an immediate shutdown of pile driving will be implemented unless Atlantic Shores determines shutdown is not feasible. What is feasible? How will this determination be made and under what time constraints?
- For LOA 36, bubble curtains aren't enough protection, especially for baleen whale species. Is 30 minutes enough time for monitoring?

Table G-2 exhibits the potential agency-proposed mitigation and monitoring measures analyzed. Starting on page G-54, table G2 switches back and forth from talking about impact sections of different project phases (preconstruction, construction, operations and maintenance and decommissioning to different types of surveys like fisheries, trawling, pot/trap surveys. Why are the specific surveys listed separately for project phases?

Regarding “BOEM’s Proposed for Consultation with NMFS under the ESA” section mentioned on page G-51, when will this consultation happen and will the modifications from the meeting be public before the FEIS for public comment?

In sum, the DEIS falls short of providing meaningful, measurable, and, most importantly, enforceable mitigation measures to reduce the unavoidable impacts to resources affected by the Atlantic Shores South projects. As such, COA supports the No Action Alternative to ensure the protection of the ocean and marine life.

Atlantic Shores Projects and Expanding Cumulative Impacts Analysis

In an alternative analysis, BOEM should utilize an extensive cumulative impact analysis based on the potential harm to sensitive areas in the NY/NJ Bight, especially in light of the unprecedented footprint for offshore wind energy proposed off the East Coast. During the leasing and planning phases of offshore wind development, BOEM only reviews impacts that are “reasonably foreseeable.”⁵⁸ As a result, cumulative effects and extensive, precautionary steps have taken a back seat. Even though BOEM expanded the scope of their cumulative impact analysis during the Vineyard Wind programmatic review, there could still be cascading effects to vulnerable New Jersey and New York ecosystems, wildlife, and communities along the Mid-Atlantic Bight.

⁵⁸ Vineyard Wind Supplemental Environmental Impact Statement, p 1-2.

Echoed in COA’s prior comments, the siloed nature of BOEM’s approach to Section 102 of the National Environmental Policy Act (NEPA) could prevent proper siting, construction, and analysis. Section 102 states simply that a “detailed statement be prepared by the responsible official” when appropriate for actions.”⁵⁹ For instance, the Supplemental Environmental Impact Statement (SEIS) from Vineyard Wind 1 “assumes that best management practices (BMPs) incorporated from the [Record of Decision] on the 2007 Final Programmatic Environmental Impact Statement for Alternative Energy Development and Production and Alternate Use of Facilities on the Outer Continental Shelf will be implemented.”⁶⁰

BOEM finally shifted their analysis from the 2007 Record of Decision during the Vineyard Wind extended environmental review process.⁶¹ In July of 2020, the Bureau of Ocean Energy Management (“BOEM”) published the SEIS, which exclusively focused on cumulative impacts from the project in relation to others in the same geographical area. The results of the SEIS detailed the importance of early planning and a robust cumulative impact analysis. The SEIS concluded that the proposed action, as well as all six alternatives, would result in “major impacts” to both commercial and recreational fishing as well as navigation.⁶² The previous project-specific Environmental Impact Statement found that, individually, Vineyard Wind would only result in “minor” to “moderate” impacts to these industries.⁶³ The SEIS and a cumulative impact approach illustrate how the impacts change when viewed in relation to the surrounding developments. Further, the SEIS outlined why it is essential that regulators engage in increased cumulative impact analyses that focus on the development of the offshore wind industry holistically, as well as on an individual project-by-project basis.

With the Vineyard Wind project, BOEM changed their tiered analysis of “reasonably foreseeable” impacts to include “those proposed offshore wind projects with COPs submitted or approved at the time of analysis.”⁶⁴ BOEM expanded their “quantitative cumulative impacts analysis” in their SEIS to include all projects with submitted or approved COPs, all projects with onshore energy awarded, and all announced and future solicitations and lease sales. However, BOEM still did not expand this to apply to transmission, interconnection, or onshore impacts. Nor did BOEM cover the full extent of navigation and transit concerns as “reasonably foreseeable.” COA supports the continued application of BOEM’s “quantitative cumulative impact analysis” and urges BOEM to continue revising their approach to include the aforementioned additional cumulative impacts for the Atlantic Shores South project.

In sum, it is essential that the offshore wind industry’s impacts be fairly and fully evaluated, including cumulative impacts, so as to avoid and reduce impacts and, if unavoidable impacts are identified, then they must be mitigated.

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ Vineyard Wind 1 Offshore Wind Supplemental Environmental Impact Statement, 1-2 (2020).

⁶² Vineyard Wind Supplemental Environmental Impact Statement (2020), p. ES-5.

⁶³ Bureau of Ocean Energy Management, Vineyard Wind – Draft Environmental Impact Statement, Docket No. BOEM 2018-060, at ES-8.

⁶⁴ *Id.*

Navigation & Safety Issues & Concerns

In addition to the impacts to marine life as described herein, COA also raises additional issues of safety and navigation which the DEIS fails to adequately address. First, the DEIS and Applicant **lacks a Spill Response Plan for major oil, chemical, or other hazardous, harmful or floatable materials from container ships.** The Port of NY/NJ is the number one port on the East Coast and has been the number one port in the nation. Tankers containing many hazardous chemicals, as well as cargo ships carrying materials harmful to marine life, transit this area daily. At the same time, it is well documented that the turbines of the scale proposed by the Applicants impact radar, which creates a dangerous risk for collision with not only ships but turbines. The increased traffic of thousands of ship trips during construction, operation and maintenance from the Projects, as well as the cumulative project activities in the region, dramatically increases the likelihood of a collision and spill. This includes the increased ship traffic in the region of the Projects, as well as the cumulative navigational hazards from all projects in the region. This probability is increased dramatically by the navigational risks caused by the impacts on radar systems due to the turbines and the reduction of space to maneuver.

Also of concern is the Navigation Safety Risk Assessment prepared by paid consulting firms W.F. Baird & Associates Ltd and Epsilon Associates Inc. Since they accept no responsibility for damages, there should be an independent assessment of their conclusions.

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C.5 Vessel Traffic Through the Whole Lease Area

Vessel track density plots for the vessels that transit through any section of the Lease Area is presented in Figure C.19. Vessel tracks for transiting (> 4-knots) fishing vessels are presented in Figure C.3. Table C.11 gives the distribution of vessel headings in the Lease Area by vessel type.

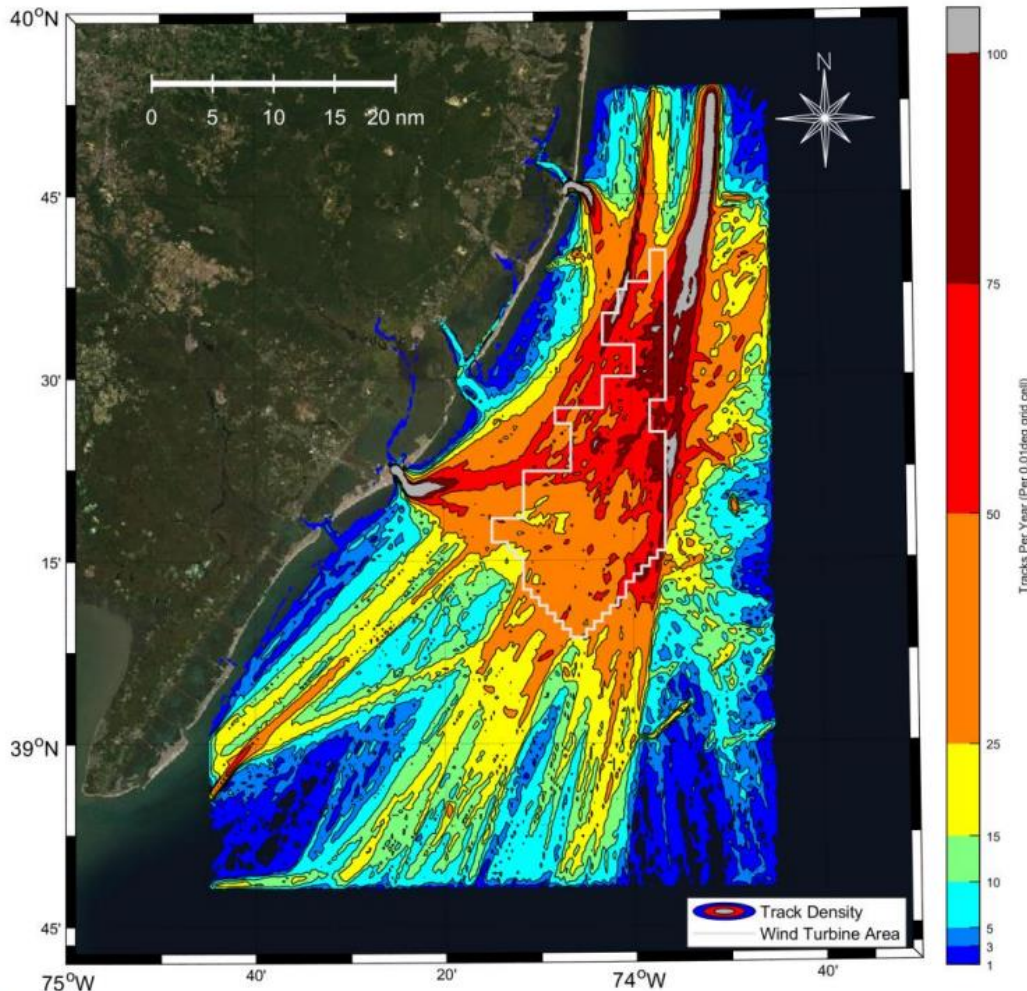


Figure C.2: AIS Vessel Traffic Density for Vessels that Transit Through the Whole Lease Area

(Above map of vessel traffic density for Vessels that Transit through the whole lease area, Navigation Safety Risk Assessment, Page 215)

Thus, the risk of a spill is not just plausible, but probable. The impacts from a large tanker spill of hazardous materials would be catastrophic to the region and beyond. One need only recall the Exxon Valdez or other countless other examples to understand the impacts. The protection of water quality, marine life, and shoreline ecosystems from the devastation to coastal communities or other economies resulting from the spills is essential. BOEM fails to adequately assess these risks, and the Atlantic Shores South DEIS fails to provide detailed response plans for such a plausible and potential catastrophic event(s).

While Appendix I-D of the COP includes an Oil Spill Response plan which does mention “Spills from vessels resulting from vessel collisions and groundings attributable to presence of the facility,” there is no plan. In fact, at a recent BOEM public meeting in Manahawkin, several BOEM officials as well as an Atlantic Shores representative in charge of permitting admitted not conceiving of a response plan for this scenario.

Moreover, the word “insurance” does not appear in the Oil Spill Response Plan. The Applicants, as well as the bulk carriers and cargo ships, must be fully insured to fund the cleanup of a catastrophic spill, including natural resources damages and impacts to communities.

The DEIS fails to consider the impacts of the above. A detailed review of the impacts and consequences and remedies and plans to restore environmental and socio-economic impacts must be conducted as well as detailed response plans to avoid, minimize or mitigate harm.

Lack of Overall Safety Considerations:

Throughout the documents, safety from spills or risks to marine life and human life are not comprehensively evaluated or assessed. This includes risks from many impacts, in addition to the above, such as storms and hurricanes, impaired radar, risks to military readiness ,and response such as the Coast Guard.

For example, in Atlantic Shores’ Appendix I-E, Health Safety Security and Environmental (HSSE) Safety Management System is a total of 30 pages, including extraneous pages. The environment is barely referenced, and the tasks of the Environmental Coordinator are incomplete.

Risk Assessment Matrix						
Consequences	#	Likelihood				
		10 ⁻¹	10 ⁻¹ -10 ⁻²	10 ⁻² -10 ⁻³	10 ⁻³ -10 ⁻⁶	<10 ⁻⁶
		Happens often and might be expected	Known to have occurred within Company	Known to have occurred within industry	Conceivable but unusual in industry	Almost impossible. Rare or absent in industry.
		A Frequent	B Occasional	C Possible	D Unlikely	E Improbable
-More than 3 fatalities or multiple life-threatening injuries. -Total loss of asset -Massive Environmental/Community Effects	5 Massive Effect					
-Up to 3 fatalities or 1 life-threatening injury -Major Environmental/Community Effects	4 Major Effect					
-Major injury or health effect -Moderate Environmental/Community Impact	3 Moderate Impact					
-Minor injury or health effect -Minor Environmental/Community Impact	2 Minor Effect					
-Slight injury or health effect -Slight or no Environmental/Community Impact	1 Slight or No Effect					

Similarly, Chapter 14 of this Appendix, HAZARD IDENTIFICATION AND RISK MANAGEMENT (pages 28-29), the Risk Assessment Matrix system should be fully described and used in any section a risk is considered to provide details for public review. This would

provide the public with a transparent essential review of the risk potentialities and the ability to comment on the results of the calculations. All underlying data used for each Risk Assessment Matrix must be included to allow separate analysis of the calculations.

Overall, the DEIS fails to address the lack of due diligence for ensuring safety of the project and assuring the public that the full scope of risks impacting health and safety of the public and the environment are protected to avoid, minimize, and/or mitigate harm. This would include adequate insurance to address any harm.

Additional Points:

The DEIS fails to adequately evaluate the following essential ecological impacts and the means to avoid, minimize, or mitigate potential adverse effects from the project, including cumulative, including:

- Full evaluation and assessment of the essential role the ocean plays in reducing climate change, including marine life, ecosystem, hydrological, and other oceanographic systems.
- Offshore wind energy infrastructure causing additional ocean warming particularly from cables and OSS.
- Failing to consider the many unknowns with regard to science and impacts to marine ecosystems.
- Potential creation of microclimate effects of wind turbines, and wind turbulence behind turbines causing impacts on water quality, including the marine boundary layer and downstream impacts.
- Enhanced vertical mixing from turbulence created by turbine rotors increases nighttime surface air temperature by 0.5 degrees while lowering daytime temperatures by 2-3 degrees. Potential impacts on water temperature must be included in a full and fair analysis of Ocean Wind 1's environmental impacts.
- The impact of increasing ocean warming to broader climate change harm.
- The impact to the Cold Pool.
- Offshore wind energy development reducing wind energy impacts on natural systems such as the micro-layer and bird and butterfly migrations.
- Building arrays of offshore wind turbines off the Mid-Atlantic states could have effects on the annual cycle of ocean water temperatures that are critical to the region's fish and shellfish habitat. In addition to impacts on the Atlantic cold pool and the high regional fishery productivity that it supports, heat absorbed by an offshore wind project's steel monopoles will warm the surface water and water column, including local benthic areas. This may extend to cumulative effects from the heat dissipated by the entire 200+ turbine array. This would have significant and serious impacts on the ecosystem, including cumulative impacts.
- A thorough analysis of the potential impacts of extreme weather events on Atlantic Shores South.
- Changes in the surrounding wind speed and surface stress of the water in the turbines' wake, which may lead to increased turbulence and heat fluxes.⁶⁵ The turbines' effects on

⁶⁵ See S. Afsha Rian and P.A. Taylor, On the Potential Impact of Lake Erie Wind Farms on Water Temperatures and Mixed-Layer Depths: Some Preliminary 1-D Modeling Using COHERENS, 124 J. Geophysical Resch.: Oceans 1736- 49 (2019), <https://agupubs.onlinelibrary.wiley.com/doi/epdf/10.1029/2018JC014577>.

near-surface wind speeds and the warming of near- surface water temperature has even been documented in the context of extreme weather events,⁶⁶ but no such interactions are analyzed in the Draft EIS.

Conclusion

COA seeks to ensure that the projects avoid, reduce, and minimize environmental harm from Atlantic Shores' Projects, as well as provide detailed, meaningful, and appropriate mitigation options. If you have any questions, feel free to contact COA.

In conclusion, the DEIS is woefully deficient, incomplete, misleading, and suggests bias toward Atlantic Shores South. It must be withdrawn, completed, and re-issued for public review. Moreover, BOEM showed a lack of due process and transparency in providing only the minimum 45 days to comment, undermining the public review as described in previous letters. The redrafting and release of public review of the DEIS would allow full disclosure of the beneficial and adverse impacts of the project and allow meaningful public comment in compliance with NEPA and in the spirit of good governance.

Clean Ocean Action urges BOEM to select the No Action Alternative due to missing or unavailable information, as well as the extent of impacts on the marine ecosystem, and beyond, that are expected. Thank you for the opportunity to provide comments on Atlantic Shores South Draft Environmental Impact Statement.

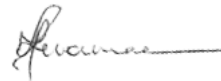
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⁶⁶ See Tsung-Yu Lee, et al., *Impacts of offshore wind farms on the atmospheric environment over Taiwan Strait during an extreme weather typhoon event*, 12 Scientific Reports 823 (2022), <https://www.nature.com/articles/s41598-022-04807-w.pdf>.