

Program Manager
Office of Renewable Energy
Bureau of Ocean Energy Management
45600 Woodland Road
Sterling, Virginia 20166

July 11, 2022 by e-mail

RE: Public Comments on Ocean Wind Draft Environmental Impact Statement (DEIS) Docket BOEM-2022-0021

Dear Sir/Madam:

My interest in this project is it is part of the potential cumulative impact of commercial-scale offshore wind projects near the Delaware coast, and consequently a decision to approve the Ocean Wind 1 Construction & Operation Plan (COP) will make impacts from the proposed Garden State, Skipjack, Marwin, and Momentum Wind projects worse. We represent over 1,400 individuals who have expressed concerns about offshore wind development to the Caesar Rodney Institute, and through the website Save Our Beach View. BOEM has not properly followed all the requirements of the National Environmental Policy Act, the Administrative Procedures Act, and the Outer Continental Shelf Lands Act in preparing this DEIS. The DEIS underestimates the threats on the endangered Northern Right Whales, commercial fisheries providing food security, vessel collisions, the ability of the Coast Guard to conduct Search & Rescue operations, scientific research, and pristine ocean views. Details follow below.

Sincerely,

David T. Stevenson
Director, Center for Energy & Environment
Caesar Rodney Institute
420 Corporate Blvd.
Newark, DE 19702

Detailed comments

1 President Biden's Executive Order 14008 is irrelevant to the purpose and need of the proposed action

BOEM begins its discussion of the purpose and need of the draft EIS as the need to follow the President's Executive Order 14008, "Tackling the Climate Crisis at Home and Abroad". As inferred by the Supreme Court in its decision *West Virginia v. EPA*, the Executive Branch has no authority to regulate carbon dioxide without a law passed by Congress. As the purpose of the offshore wind project is to reduce carbon dioxide emissions the Executive Order is irrelevant and these comments should be removed from the DEIS.

2 Major negative impacts found in the DEIS on commercial fishing, the viewshed, navigation, and scientific research requires denial of the proposed action

BOEM States on Volume 1, 3.9 - 49, "BOEM anticipates that the overall impacts on commercial fisheries and for-hire recreational fishing associated with the Proposed Action when combined with impacts from ongoing and planned activities including offshore wind would be major because some commercial and for-hire recreational fisheries and fishing operations would experience substantial disruptions indefinitely".

BOEM states on 3.16- 18, "The impacts of the Proposed Action on navigation and vessel traffic would be major. The Proposed Action when combined with impacts from ongoing and planned activities including offshore wind would be major, due primarily to the increased possibility for marine accidents, which could produce significant disruptions for ocean users in the geographic analysis area". BOEM further states, "Proposed Action structures would increase the risk of collision as well as collision with other vessels navigating through WTGs and could interfere with marine radars". Radar is the main tool used to help locate other nearby vessels that are not otherwise visible, particularly in adverse weather when visibility is limited. BOEM states on 3.16-15, "The navigational complexity of transiting through the Wind Farm Area, including the potential effects of WTGs and OSS on marine radars, would increase risk of collision with other vessels (including non-Project vessels and Proposed Action vessels). Furthermore, the presence of the WTGs could complicate offshore SAR operations or surveillance missions within the Wind Farm Area and lead to earlier abandoned SAR missions and resultant increased fatalities".

BOEM states on 3.20 - 25, "The daytime presence of offshore WTGs and OSS, as well as turbine nighttime lighting, would change perception of ocean scenes from natural and undeveloped to a developed wind energy environment characterized by WTGs and OSS. In clear weather, the WTGs and OSS would be an unavoidable presence in views from the coastline". And on 3.20-26, "BOEM anticipates that the overall impacts associated with the Proposed Action when combined with the impacts from ongoing and planned activities including other offshore wind development would be major".

BOEM States on 3.17 -15, "Scientific Research and Surveys: Potential impacts on scientific research and surveys would generally be major, particularly for NOAA surveys supporting commercial fisheries and protected-species research programs. The presence of structures would exclude certain areas within the Project area occupied by Project components (e.g., WTG foundations, cable routes) from potential vessel and aerial sampling, and by affecting survey gear performance, efficiency, and availability".

Clearly the proposed project has serious major impacts on historic uses of the outer continental shelf. Some compensating actions are offered such as reimbursement for lost fishing gear and adoption of Aircraft Detection Lighting System. However, a December 14, 2020 letter (attached), page 12, from the Department of the Interior Solicitor to Interior Secretary David Bernhardt states:

"It is important to observe that any compensation system established by a lease to make users of the lease area whole financially does not negate interference – indeed the creation of such a

system presumes interference. As such, any proposed compensation process should not be viewed as ‘curing’ any 8(p)(4)(I) interference since the statute does not provide for such a cure.”

The letter also discusses the Secretary’s duty to prevent interference with reasonable historic uses in federal waters, such as fishing, navigation and the viewshed by denying offshore wind projects in accordance with the Outer Continental Shelf Lands Act Subsection 8(p). We note this is in contrast with a new Solicitor General’s opinion quoted in the DEIS: *As stated in M-Opinion 37067, “. . . subsection 8(p)(4) of OCSLA imposes a general duty on the Secretary to act in a manner providing for the subsection’s enumerated goals. The subsection does not require the Secretary to ensure that the goals are achieved to a particular degree, and she retains wide discretion to determine the appropriate balance between two or more goals that conflict or are otherwise in tension.”*

Major impacts to historic ocean uses cannot be overlooked at the discretion of the Secretary. These contrasting opinions are the kind of legal debates to be settled in lawsuits filed against BOEM approval such as has been done against the Vineyard Wind project. It is recommended no further offshore wind project Final EIS and Record of Decision be published until these cases are heard, likely by years end.

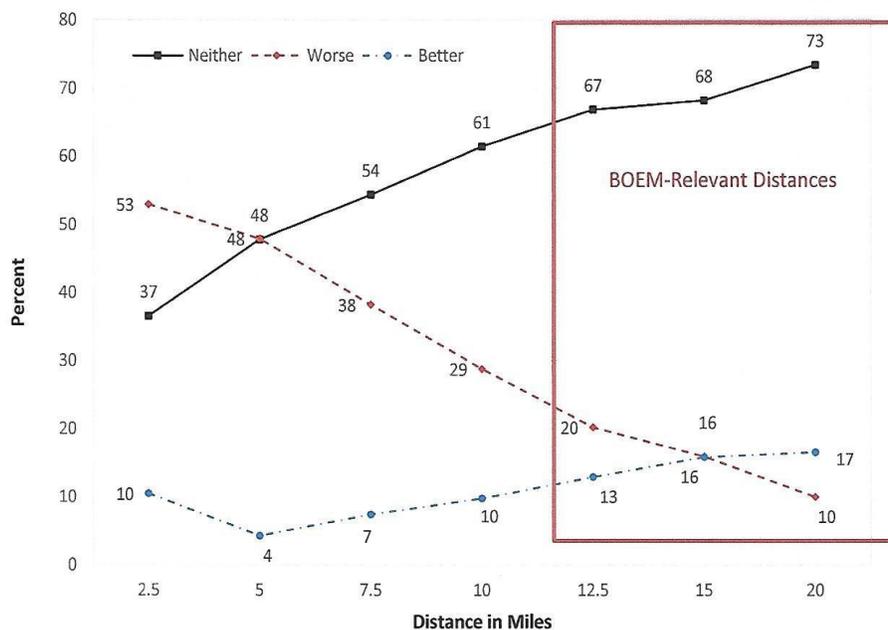
3 Visual impacts of turbines in the Proposed Project on Tourism should be considered “major” instead of “moderate”, and a new study is needed to determine potential economic costs. No Final EIS should be issued for any project until that study is available.

BOEM states under the topic Recreation and Tourism on 3.18 - 22, “Overall, the impacts of the Proposed Action are anticipated to be moderate and minor beneficial”. The turbines will be 15 miles off Atlantic City, are 906’ tall, and will be “theoretically visible to a viewer at the ocean surface or at beach elevations at distances up to 39.6 miles with clear-day conditions”. BOEM quotes a University of Delaware study, 3.18-8, “evaluating the impacts of visible offshore WTGs on beach use found that WTGs visible more than 15 miles from the viewer would have negligible impacts on businesses dependent on recreation and tourism activity (Parsons and Firestone 2018). The study participants viewed visual simulations of WTGs in clear, hazy, and nighttime conditions (without ADLS)”. Below is a copy of the chart quoted from the UD study.

The University of Delaware study¹ did its survey by showing panning photomontages on a computer screen of 579’ tall turbines, respondents were also provided instructions on the distance to the screen from which they should view the images and were asked to view the project at three distances offshore – near, medium and far. After each distance was viewed, respondents were asked whether the presence of the wind power project would have affected their beach experience/enjoyment -- making it worse, somewhat worse, neither worse nor better, somewhat better, or better. If they responded worse or somewhat worse, they were then asked a certainty-response question. They used the response to this question to construct certainty-adjusted data. Note no such certainty adjustment was used for those who favored wind turbines. Results from nighttime views were never released. The survey group also included about 35% of respondents who never actually visited the beach. In March, 2021, one

of the authors (Parsons) stated in a Delaware Today Magazine interview² the study is no longer applicable because turbines used today are so much larger.

However, even with the studies problems it has some use. The figure below shows at 10 miles 29% found the view worse while only 10% found it better for a 19% difference choosing worse. At 7 miles 38% found the view worse compared to 7% favorable, a 31% difference. In looking at the cumulative impacts of immediately adjacent planned offshore wind projects Ocean Wind 2 is only 8.9 miles from the beach, Atlantic Shores South is 8.8 miles, and Atlantic Shores North is 9.1 miles. So ignoring the taller towers in the Ocean Wind 1 project we see perhaps 25% of tourists will find the cumulative impact worse. The impact of taller towers can be approximated by assuming the towers are 1.56 times closer (the ratio of 579' tall towers to 906' tall towers). That suggests the adjacent projects will have the impacts of turbines 5 miles off the coast in the UD study, and the proposed Ocean Wind project would be equivalent to about 10 miles off the coast. The proposed project then should be considered to have a major impact on tourism.



BOEM also referenced a 2017 visual preference study conducted by North Carolina State University that evaluated the impact of offshore wind facilities on vacation rental prices. “The study found that nighttime views of aviation hazard lighting (without ADLS) for WTGs close to shore (5 to 8 miles) would adversely affect the rental price of properties with ocean views (Lutzeyer et al. 2017). It did not specifically address the relationship between lighting, nighttime views, and tourism for WTGs 15 or more miles (24.1 or more kilometers) from shore. More than 95 percent of the WTG positions likely to be present based on anticipated offshore wind lease

area build-out in the geographic analysis area would be more than 15 miles from coastal locations with views of the WTGs”.

The study by Lutzeyer et.al. (2017), “The Amenity Costs of Offshore Wind Farms: Evidence from a Choice Experiment”³ was quite a contrast to the UD study. The Lutzeyer study worked with beach home rental companies, and surveyed only people who had recently rented a house on, or near the beach. The study found 38 percent of beach renters would likely not come back to a beach with daytime visible turbines regardless of the distance as shown in the study quote below with visualizations showing turbines from 5 miles to 18 miles from shore (not the 8 mile limit stated in the DEIS). In addition, others would return only with a rental discount depending on the distance.

Overall, the willingness to accept estimates for the Never View class imply that these respondents would likely exit the local rental market if turbines were present, rather than make intensive margin tradeoffs among rental price and characteristics of the viewshed.

The Lutzeyer study also showed nighttime visualizations of red flashing aircraft warning lights, and respondents stated even higher rates of objection with 54 percent not likely to return to a beach with nighttime visible turbines. The visualizations showed 5 to 7 MW turbines about the same size as the UD study. Again, this study confirms visible turbines in the propose project will have a major impact on tourism.

Not referenced by BOEM in the DEIS is a 2015 BOEM study about a viewshed analysis it did for the New York Outer Continental Shelf Area (Renewable Energy Viewshed Analysis and Visual Simulation for the New York Outer Continental Shelf Call Area: Compendium Report OCS Study, BOEM 2015- 044)⁴. It simulated the visual impact of one hundred and fifty-two 6.2 MW wind turbines from 16 observation points in New York and New Jersey. The simulation most relevant to LBI is the Jones Beach observation point because the turbine array was roughly parallel to that shore. The closest point of the turbine array to Jones Beach was 15 miles, the same distance as the Proposed Project.

The study ranked the visible impact on a scale from 1 to 6. The visual impact from Jones Beach scored a 6, its highest rating. A 6 rating was defined as; “Dominates the view because the study subject fills most of the field for views in its general direction. Strong contrast in form, line, color, texture, luminance, or motion may contribute to view dominance”.

Since the height of a 6.2 MW turbine is two-thirds that of the proposed project turbines that visual impact would be equivalent to the project turbines at 23 miles. So, the proposed project would still register a major visual impact, based on the BOEM study. We note, based on this study, officials in New York and BOEM determined that the proposed offshore wind turbine lease area off the Hamptons is too close and ruins the serene ocean viewshed, and created a 20 mile exclusion zone⁵. They also noted it is a threat to navigation, fishing, and endangered marine mammals. The Fairway lease area sat as close as 12 miles off the Long Island coast near the Hamptons.

In Appendix D, “Analysis of incomplete or unavailable information”, D.1.15 BOEM states, “BOEM has determined that incomplete and unavailable resource information for recreation and tourism or for other resources on which the analysis of recreation and tourism impacts rely was either not relevant to reasonably foreseeable significant adverse impacts, was not essential to a reasoned choice among alternatives, alternative data or methods could be used to predict potential impacts and provided the best available information, or the overall costs of obtaining the information were exorbitant or the means to do so were unknown. Therefore, the information provided in the EIS is sufficient to support sound scientific judgments and informed decision-making related to the proposed uses of the onshore and offshore portions of the geographic analysis area”.

In fact, all the currently available studies on the impact of visible turbines on tourism are out-of-date as the turbine size has increased dramatically. Existing studies used turbine heights of 579’ to 600’. The proposed project uses 906’. The Kitty Hawk North COP uses turbines 1,042’ tall. A new study is needed that focuses on the economic impact of taller turbines on tourism similar to the NC State study. We note BOEM paid the University of Delaware only \$350,000 for its study, a small price considering over \$100 billion may be invested on planned offshore wind projects.

4 Acoustical studies on operational noise are inadequate to determine the impact on marine species and no Final EIS should be issued for any project until such a study is available.

BOEM states in 3.15-45, “Turbine operation noise: Offshore WTGs produce continuous, non-impulsive underwater noise during operation. Current and near-term commercially available WTGs likely used for the Project range from 12.4-MW to 14.7- MW WTGs using the direct-drive GE Haliade-X 12-MW WTG. SPLs measured from direct-drive WTGs within this size range do not currently exist in the literature and modeling scenarios are limited to two studies with a high degree of uncertainty”.

One study published in the journal of the Acoustical Society, “How could operational underwater sound from future offshore wind turbines impact marine life?”⁶ suggests levels as high 177 to 177 decibels at a 10 MW direct drive turbine. Using the National Oceanic Atmospheric Administration criterion for behavioral disruption for continuous noise (i.e., level B at 120 decibels), a single 10 MW direct drive turbine is expected to cause behavioral response in marine mammals up to 1.4 km (0.85 miles) distance from the turbine. As the turbines will spaced on a 1 by 1.2 mile grid the Level B threshold will likely be exceeded everywhere in the project area resulting in this having a major impact. The critically endangered North Atlantic right whale commonly seen in the project area would be severely impacted by noise harassment and there is no obvious mitigating action to protect the whale.

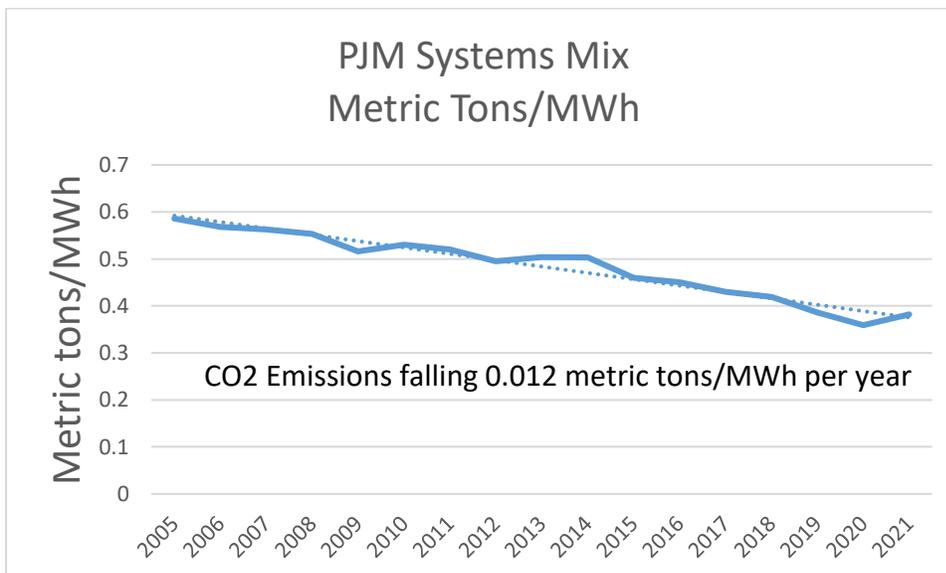
Gamesa offers a 10 MW direct drive turbine for sale but none have been installed yet. Until actual acoustical testing is completed on such a turbine no offshore wind project should be approved.

5 Project should be denied because the cost premium for offshore wind is too high

The average cost premium of carbon dioxide saved from the Ocean Wind 1 project will be \$420/metric ton when compared to utility scale solar photovoltaic modules. That is 12.6 times higher than the likely cost of a carbon dioxide emission allowance from the Regional Greenhouse Gas Initiative (RGGI) in 2035 of \$33.50/metric ton. Solar would provide the same emission savings at much lower cost.

Calculation details:

- New Jersey utility commission approved 4,851,489 Offshore Wind Renewable Energy Credits (OREC) per year for 20 years with operation beginning in 2025 according to the DEIS
- ORECs will cost \$98.10/MWh the first year with a 2% a year escalator⁷ yielding an average OREC price of \$126.47/OREC
- US Energy Information Agency forecasts a price for utility scale solar of \$36.49/MWh for projects completed in 2027⁸. The average offshore wind premium will be \$89.98/MWh, or \$436,536,980/year.
- Offshore wind electricity sold into the grid will displace carbon free generation such as nuclear, onshore wind, solar, and hydro as well as from coal and natural gas. Therefore the sold power will displace the average regional grid system mix.
- Since 2005 the PJM Regional System Mix has seen an average 0.012 metric ton/MWh annual fall since 2005 (see PJM Systems Mix History Figure below). In 2021 the System Mix was 0.382 metric tons/MWh, so the figure should be 0.214 tons by 2035, with 1,038,219 metric tons saved/year by the proposed offshore wind project. So \$436,536,980 premium cost/1,038,219 metric tons = \$420/metric ton
- RGGI, Inc. forecasts a maximum allowance price of \$33.50/metric ton in 2035 (current trigger price with 7%/year escalator), so the cost of offshore wind carbon dioxide savings is 12.6 times as much as a regional future value of the savings.



Conclusion

The DEIS has found major impacts from the proposed project. The cumulative impact of planned east coast offshore wind turbines from commercial fishing abandonment of lease areas is as large as the state of Connecticut which will cost jobs, revenue, and food security. Navigational and vessel traffic will have major impacts from radar interference leading to increased vessel collisions combined with compromised US Coast Guard ability to do Search & Rescue Operations leading to more potential deaths. Visible wind turbines will dominate the horizon leading to reduced tourism and reduced property values. Operational noise may exceed NOAA Level B Harassment thresholds harming marine life including the critically endangered North Atlantic right whale. Research requiring surface or aerial surveys will not be able to be carried out. The cost of reducing carbon dioxide emissions with offshore wind is over twelve times as expensive as solar. Studies measuring these impacts are not available. Until needed studies are completed no offshore wind projects should be approved. Such large scale interference with historic uses of the ocean resources, and high cost should result in denying approval for offshore wind projects.

References

- 1) U.S. Bureau of Ocean Energy Management, University of Delaware, “Atlantic Offshore Wind Energy Development: Values and Implications for Recreation and Tourism”, March 2018, Authors: George Parsons and Jeremy Firestone, <https://www.boem.gov/espis/5/5662.pdf>
- 2) Delaware Today Magazine, Jordan Howell, 4/15/2021, <https://delawaretoday.com/life-style/skipjack-wind-farm/>
- 3) North Carolina State University, “The Amenity Costs of Offshore Wind Farms: Evidence from A Choice Experiment”, March 216, Lutzer ET. al., <https://www.aminer.org/pub/5c8c9f8a4895d9cbc6134d87/the-amenity-costs-of-offshore-wind-farms-evidence-from-a-choice-experiment>
- 4) Renewable Energy Viewshed Analysis and Visual Simulation for the New York Outer Continental Shelf Call Area: Compendium Report OCS Study, BOEM 2015- 044, <https://www.boem.gov/sites/default/files/renewable-energy-program/State-Activities/NY/Visual-Simulations/Compendium-Report.pdf>
- 5) New York State Comments on Department of Interior Bureau of Ocean Energy Management, NYS_BOEM_NY_Bight_Call_Comments.pdf, East Hampton Star, ‘No Wind Farm in Fairways”, https://www.governor.ny.gov/sites/default/files/atoms/files/NYS_BOEM_NY_Bight_Call_Comments.pdf
- 6) Journal of the Acoustical Society, “How could operational underwater sound from future offshore wind turbines impact marine life?”, [Uwe Stöber and Frank Thomsen, https://asa.scitation.org/doi/abs/10.1121/10.0003760?journalCode=jas](https://asa.scitation.org/doi/abs/10.1121/10.0003760?journalCode=jas)
- 7) Power Technology, “Ocean Wind Project Offshore New Jersey”, <https://www.power-technology.com/projects/ocean-wind-project-offshore-new-jersey/>
- 8) US Energy Information Agency, Annual Energy Outlook 2021, Levelized cost of power, https://www.eia.gov/outlooks/aeo/pdf/electricity_generation.pdf