Coast Star Letter

- If the referenced Harvard study published in the journal Joule is "Climatic Impacts of Wind Power" (https://doi.org/10.1016/j.joule.2018.09.009), this research was specific to onshore wind projects and did not include offshore wind power within its scope. The conclusions may not be applicable to offshore wind projects including the Atlantic Shores South Projects.

Objections Sent to Public Hearing Aug 16 2024

- Comment 1: On Proximity to Shore
    - The assertion that the proposed Projects will be constructed less than 8 miles from shore does not accurately reflect the proposed location of the Projects. As stated in the COP, at its closest point, the Wind Turbine Area is approximately 8.7 miles (mi) (14 kilometers [km]) from the New Jersey shoreline.

    - Although the proposed Projects will be visible from shore at certain times, this visibility will often be limited due to atmospheric conditions. In fact, the FEIS concludes that at the closest analyzed Key Observation Point (KOP), turbines would only be visible for approximately half of the year. Further discussion on the visibility of the Projects can be found in the FEIS and in Section 5.0 of Volume II of the Atlantic Shores Offshore Wind Construction and Operations Plan (COP), including proposed environmental protection measures to effectively reduce the potential visual impacts as practicable given the nature of the technology and the location of the Projects. The full Visual Impact Assessment is included as Appendix II-M1 of the COP. The COP and its appendices are publicly available on the Bureau of Ocean Energy Management's website.

Borough of Seaside Park Letter

- Comment 1: turbine visibility from shore
    - Although the proposed Projects will be visible from shore at certain times, this visibility will often be limited due to atmospheric conditions. In fact, the FEIS concludes that at the closest analyzed Key Observation Point (KOP), turbines would only be visible for approximately half of the year. Further discussion on the visibility of the Projects can be found in the FEIS and in Section 5.0 of Volume II of the Atlantic Shores Offshore Wind Construction and Operations Plan (COP), including proposed environmental protection measures to effectively reduce the potential visual impacts as practicable given the nature of the technology and the location of the Projects. The full Visual Impact Assessment is included as Appendix II-M1 of the COP. The COP and its appendices are publicly available on the Bureau of Ocean Energy Management's website.
- Comment 5: global warming impacts
    - Table 3-3 of the Atlantic Shores Offshore Wind Outer Continental Shelf Air Permit Application shows the Projects' expected avoided emissions, which are calculated using the latest-available output emission rate for the Reliability First Corporation (RFC) East

subregion as published by the EPA. The rest of Section 3.9.3 goes on to explain why these calculated avoided emissions actually underestimate the air-quality related benefits of the Projects.

- The comment's excerpted quotation from the Harvard researcher goes on to state that "The direct climate impacts of wind power are instant, while the benefits of reduced emissions accumulate slowly… If your perspective is the next 10 years, wind power actually has — in some respects — more climate impact than coal or gas. If your perspective is the next thousand years, then wind power has enormously less climatic impact than coal or gas... The work should not be seen as a fundamental critique of wind power." The same researcher also claims that "Wind beats coal by any environmental measure, but that doesn't mean that its impacts are negligible." The two publications mentioned in the article from which the quotation was excerpted are limited in scope to onshore wind.

SaveLBI Comment Letter

The NJ Regional Haze State Implementation Plan (SIP)

- Table 2.3 of the New Jersey Regional Haze SIP (https://dep.nj.gov/airplanning/state-implementation-plans-sips/regional-haze-sip-2020/) indicates that the uniform annual rate of improvement required to achieve natural visibility (for the 20% most impaired days) by 2064 is 0.28 deciviews. This rate is based on the Uniform Rate of Progress (URP), also known as the glide path. The 0.28 deciview benchmark is not an annual requirement but rather a standard for evaluating progress against the Reasonable Progress Goal (RPG).

- Figure 2-2 of the New Jersey Regional Haze SIP shows that the projected 2028 visibility at the Brigantine Wilderness Area is well below the URP level. Additionally, the figure indicates that the observed 2016 visibility at Brigantine is approximately 6 deciviews below the URP glide path. The average observed visibility from 2018-2022 (see figure below) shows more than 6 deciviews below the URP glide path. Therefore, any potential increases in visibility degradation at Brigantine due to the project would not endanger Brigantine's visibility remaining below the URP glide path and meeting the regional haze rule goals.

2.5 Uniform Rate of Progress

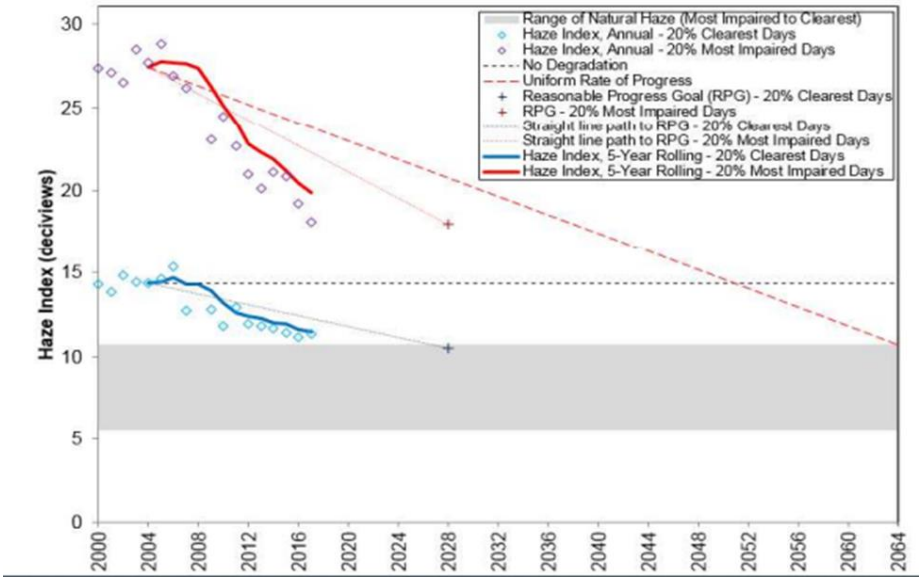
The uniform rate of progress (URP) defines, in deciviews per year, the rate of visibility improvement that would be maintained to attain natural visibility conditions by the end of 2064. The URP or glide path is represented in Figure 2-2 as a straight line between baseline conditions and 2064. DEP's calculations using most impaired days show the URP to be 0.28 deciviews per year. See Table 2-3. As seen in Figure 2-2, the reasonable progress goals established for 2028 at the Brigantine Wilderness Area are expected to provide visibility improvements at a greater rate than this rate.

Table 2-3: Uniform Rate of Progress for Brigantine Wilderness Area

2000–2004 Baseline Visibility (20% Most Impaired)	2064 Natural Visibility (20% Most Impaired Days)	Total Improvement Needed by 2028	Total Improvement Needed by 2064	Uniform Annual Rate of Improvement
27.43	10.69	6.72	16.74	0.28

The calculated URP line is drawn for the most impaired visibility days only. USEPA recommended in its draft guidance that states recalculate the value of the 2000–2004 baseline, or use an updated value provided by USEPA or the IMPROVE program. Figure 2-2 shows that Brigantine Wilderness Area is well below the 2018 URP level for the first SIP Planning period and currently below the 2028 URP level for the second planning period.

Figure 2-2: Visibility Metrics levels at Brigantine Wilderness Area



1. Project Segmentation and Conflicting Descriptions and Schedules

- Atlantic Shores is proposing to construct up to 200 WTGs. The peak year emissions accounts for 141 turbine installations, reflecting the highest possible amount of activity that may occur in one year based on the schedule presented in the Air Permit Application. For modeling purposes, Atlantic Shores assumed this level of emissions would occur for *all three years*. Thus, there is no artificial segmenting of the project.

2. Unrealistic and Realistic Foundation Installation Rates.

- When calculating the total length of the construction period, the duration of WTG installation does not need to be added to the duration of foundation installation at each individual location. This is because one vessel can install a foundation at one location while a different vessel installs a WTG in another location where the foundation has already been constructed.

3. Ignoring Real World Monthly Constraints on Pile Driving

- The air quality dispersion modeling for the short-term $PM_{2.5}$ NAAQS and PSD Increment considers continuous operation over each entire day, over the course of an entire year; including nighttime periods. This is despite the seasonal restrictions on pile driving, and thus, it is highly conservative.
- The AERMOD model appropriately fulfills regulatory standards for CAA permits. Emissions used in the AERMOD modeling represent peak hour emissions. This is shown by the column labels on the model inputs in Appendix B to the Air Quality Dispersion Modeling Report, which is itself Appendix C to the Atlantic Shores Offshore Wind Outer Continental Shelf Air Permit Application. Peak emissions were calculated using the methodology described in Section 2.2 of the Outer Continental Shelf Air Permit Application, which reflects that the model assumes the peak hour emission rate for the whole 24-hour day for short-term modeling.

4. Improper Averaging of Modeled Concentrations & Likely PSD Increment Exceedance.

- The forms of the $PM_{2.5}$ 24-hour NAAQS and $PM_{2.5}$ 24-hour Increment are different from each other. These are described in Table 3-1 and Table 3-2 respectively.
    - The $PM_{2.5}$ 24-hour NAAQS is the 98^{th} percentile concentration averaged over three years,
    - The $PM_{2.5}$ 24-hour PSD Class I increment is the 24-hour maximum, not to be exceeded more than once per year.
- The different averaging times (short-term or annual) of the National Ambient Air Quality Standards (NAAQS) and Prevention of Significant Deterioration (PSD) Increments are represented differently in the air dispersion modeling performed for the Atlantic Shores Projects. These are described in Section 4.2 of the Air Quality Dispersion Modeling Report, which is Appendix C of the Atlantic Shores Offshore Wind Outer Continental Shelf Air Permit Application.
    - The annual emissions analysis and the 24-hour analysis of $PM_{2.5}$ are independent from each other and performed differently.
        - The short-term 24-hour analysis uses the peak hour emissions from the model inputs table for each source.
        - The annual analysis includes the worst-case year's predicted hours per year of operation for each source.
    - This is demonstrated in Appendix B to the Air Quality Modeling Report (Appendix C to the Air Plan Application).

    - For comparison with the $PM_{2.5}$ annual NAAQS and PSD Increments, the project is modeled assuming continuous emissions at the 141 nearest-to-shore wind turbine generator (WTG) locations over a three-year period, which reflects an overestimation of impacts instead of truncating the project.
- The air quality dispersion modeling for the short-term $PM_{2.5}$ NAAQS and Increment were modeled assuming construction activities occurred at and around a single WTG location, continuously for a 3-year meteorological period, and as a result, it is highly conservative. The modeling results do not reflect an average of a single year of construction followed by two years of no construction emissions.

5. Underestimated Daily Construction Emissions

- The hours of pile driving per day do not impact the short-term emissions since the emissions presented for short-term durations represent peak hour emissions occurring continuously over the 3-year modeled period.

6. Improper Averaging of Daily Emissions.

- For all construction activities, short-term model input emission rates, in units of grams per second, were generated for the peak hour and assumed to run 24 hours per day for all short-term model runs, which is a conservative approach.

7. Failure to Consider Night Time pile driving

- See response 3.

8. Monthly Installation schedules

- See response 3, 5 and 6.

9. Unclear Emission sources.

- The emissions and source parameters for short-term modeling of Construction can be found in Appendix B of the Air Quality Dispersion Modeling Report.
- Operations and Maintenance Emissions are described in Section 4.2 of the Air Quality Dispersion Modeling Report. The emission rates and source parameters modeled are in Appendix B of the Air Quality Dispersion Modeling Report.
- The calculations in Appendix B to the Air Permit Application contain tables which show the individual activity groups, such as Foundation Installation or WTG Installation, associated with Construction and Operations phases of the project. These calculations also show details of the individual vessels within each activity group, including the vessel engine count, vessel engine size, home port, trip count, trip distance, operating days in the Wind Turbine Area, engine load factor for each engine type and activity, and emissions factors used in determining the peak hour emission rate that feed into the application and the short-term modeling. Similar

information is also located in Appendix B of the Atlantic Shores Offshore Wind Outer Continental Shelf Air Permit Application.

10. Modeling Distances

- [these can be determined from the modeling files but are not explicitly stated in the application. EPA can choose whether to calculate and include]

11. Non-Representative Meteorological Conditions.

- The three years of meteorological data used for the Air Quality Dispersion Modeling analysis are described in Section 4.5 of the Air Dispersion Modeling Report. The project used prognostic data. The prognostic data is reflective of overwater meteorological conditions in the vicinity of the Projects. The representative analysis demonstrating the representativeness of the prognostic data can be found in Appendix E of the Air Quality Dispersion Modeling Report.

12. Foundation Size

- See 5.

13. The Annual Average PM 2.5 concentration.

- The forms of the $PM_{2.5}$ 24-hour NAAQS and $PM_{2.5}$ 24-hour Increment are different from each other. These are described in Table 3-1 and Table 3-2 respectively.
    - The $PM_{2.5}$ 24-hour NAAQS is the 98^{th} percentile concentration averaged over three years,
    - The $PM_{2.5}$ 24-hour PSD Class I increment is the 24-hour maximum, not to be exceeded more than once per year

14. U.S. Fish and Wildlife Confirmation.

- [FWS statement pending]

15. Differing Assumptions for Air Quality Modeling versus Air Quality Related Values Modeling.

- Modeling for comparison against NAAQS and PSD increments is in accordance with 40 CFR Part 51, Appendix W. Modeling of Air Quality Related Values (AQRVs) is in accordance with the Federal Land Manager's Air Quality Related Values Work Group (FLAG) Revised Phase I Report.
- A description of several reasons why the modeling of Air Quality Related Values (AQRVs) is conservative can be found in the section titled "Conservatism" in Appendix C of the Air Quality Dispersion Modeling Report, which is Appendix C of the Atlantic Shores Offshore Wind Outer Continental Shelf Air Permit Application.

16. Use of a New Air Quality Model.

- The air quality dispersion modeling analysis for the NAAQS and PSD Increment used AERMOD/AERCOARE. As described in Section 4.1 of the Air Quality Dispersion Modeling Report, a request was made to utilize AERMOD/AERCOARE instead of the Offshore Coastal Dispersion (OCD) model to EPA Region 2. The process used to document that the use of AERMOD/AERCOARE is acceptable is spelled out in 40 CFR Part 51 Appendix W Section 3.2.2(e). Approval was granted to use AEREMOD/AERCOARE provided a demonstration that shoreline fumigation is not a concern. The shoreline fumigation demonstration is included in Appendix D of the Air Quality Dispersion Modeling Report.

17. Alternative Sites, Sizes and Processes.

- Outside scope of air permit application

18. Measurement and Enforcement

- Outside scope of air permit application

19. Liability

- Outside scope of air permit application

20. Notice of Intent.

- The Project's Clean Air Act Notice of Intent was submitted to EPA on December 22, 2021 and is published online at https://www.regulations.gov/document/EPA-R02-OAR-2024-0312-0024.

21. Coastal Zone Management Act Consistency

- Although the proposed Projects will be visible from shore at certain times, this visibility will often be limited due to atmospheric conditions. In fact, the FEIS concludes that at the closest analyzed Key Observation Point (KOP), turbines would only be visible for approximately half of the year. Further discussion on the visibility of the Projects can be found in the FEIS and in Section 5.0 of Volume II of the Atlantic Shores Offshore Wind Construction and Operations Plan (COP), including proposed environmental protection measures to effectively reduce the potential visual impacts as practicable given the nature of the technology and the location of the Projects. The full Visual Impact Assessment is included as Appendix II-M1 of the COP. The COP and its appendices are publicly available on the Bureau of Ocean Energy Management's website.