

**Maryland Offshore Wind Final Environmental Impact Statement (FEIS)**  
**Docket Number BOEM-2024-0033**  
**Edward E. Bintz Comments**

**A. Recent Wind Turbine Blade Failures Demonstrate That the FEIS Fails to Adequately Address the Risk of Blade Failures, the Testing of Blades, and Emergency Response Plans.**

The FEIS fails to address the major risk of wind turbine blade breakages/failures. Its sole acknowledgement of the issue (in its discussion of “severe weather and natural events”) states that structural failure of a wind turbine (including loss of a blade) is “highly unlikely.” *See* FEIS, Vol. I, Section 2.2 (p. 2-42). But the recent blade failures/breakages at the “Vineyard Wind” wind farm project in Massachusetts and in Europe show this assessment to be incorrect, even outside of severe weather conditions.

As steward of our country’s ocean resources and to comply with NEPA, BOEM needs to issue a supplemental EIS (with a public comment period) to address, among other things, the following:

- The inherent risks of massive wind turbine blades of the type that would be installed by US Wind and whether the size of the wind turbines should be reduced. At the time the lease area was approved, offshore wind turbines were hundreds of feet smaller. Delaware’s and Maryland’s coasts should not be used as a testing ground for massive, unproven wind turbines whose safety and resilience are in doubt.
- The proper level of storm resiliency to which the blades should be designed.
- Manufacturing techniques, processes, and standards that ensure consistent, proper construction of the blades. Why are the massive blades failing in normal weather conditions?
- Installation techniques, processes, and standards that ensure consistent, proper, accident-free installation.
- The proper physical testing of the Project’s wind turbine blades.
- The establishment of comprehensive emergency response plans to manage the disastrous consequences of wind turbine blade failures.

Delaware’s and Maryland’s coastal communities should not have to face the prospect of catastrophic environmental and economic harm from blade failures (or from any of the Project’s many other problems) as the price for a project that the FEIS recognizes will have “negligible impacts on climate change . . . compared to a similarly sized fossil fuel power plant or to the generation of the same amount of energy by the existing grid.” *See* FEIS, Vol. I, p. 3-27.

## ***1. Recent Wind Turbine Blade Failures.***

During July 2024, a GE Haliade X turbine blade broke at the Vineyard Wind wind farm project in Massachusetts, dumping more than 110,000 pounds of fiberglass, epoxy and foam into the ocean.<sup>1</sup> The failure occurred during normal weather conditions. It's been an economic and environmental disaster for the Nantucket area. At least six Nantucket beaches were closed for days, and the fishing industry was halted.<sup>2</sup> GE and Vineyard Wind's owners remain silent as to when debris will stop washing up on beaches or how sea life will be affected.<sup>3</sup> At the time of the blade failure, just 10 of the approved 62 wind turbines had been installed and were operating.<sup>4</sup> US Wind has identified the GE Haliade X wind turbine for possible installation for the Project.

Less than two weeks ago (on August 22, 2024), another GE Haliade X wind turbine blade failed at Dogger Bank, a major offshore wind farm in the United Kingdom.<sup>5</sup> This comes on the heels of a separate GE Haliade X turbine blade failure at Dogger Bank during May 2024. Because the Dogger Bank project is located more than 80 miles offshore, the scope of the damage did not include the forced closure of beaches as occurred in Nantucket and would occur in Delaware's and Maryland's beach communities. In Germany, three GE turbine blade failures were reported during the last year, a 22-ton Siemens blade (the type used by Revolution Wind) failed in Norway, and a Vestas blade failed in the United Kingdom.<sup>6</sup>

## ***2. The FEIS's Analysis of the Extreme Weather Resiliency of the Wind Turbines is Insufficient, Particularly Given Recent Events.***

If the super-sized wind turbine blades (more than 350 long in the case of GE Haliade-X blades) are failing during normal weather conditions, what is the risk of failures during inevitable extreme weather conditions? What level of extreme weather would the Project's wind turbines be designed to withstand? The FEIS fails to adequately address these questions. Instead, it provides a murky, jargon-laden discussion of various "specifications," "requirements," and "standards" for 500-year and 50-year events. But it never addresses in a direct way the level of

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<sup>1</sup> <https://www.providencejournal.com/story/opinion/columns/2024/08/03/a-call-for-a-hiatus-on-ri-offshore-wind-projects-amid-blade-failures/74500738007/>

<sup>2</sup> <https://www.nationalreview.com/news/nantucket-beaches-closed-after-wind-turbine-breaks-apart-sending-fiberglass-shards-into-ocean/>

<sup>3</sup> <https://nantucketcurren.com/news/vineyard-wind-and-ge-vernova-respond-to-community-questions-after-blade-failure>

<sup>4</sup> <https://newbedfordlight.org/vineyard-wind-turbine-blade-sustains-damage-offshore/#:~:text=The%20Vineyard%20Wind%20project%20started,delivered%20first%20power%20in%20February,>

<sup>5</sup> <https://www.reuters.com/business/energy/ge-vernova-falls-after-turbine-blade-failure-offshore-uk-wind-farm-2024-08-23/>; <https://reneweconomy.com.au/second-turbine-blade-failure-hits-worlds-largest-offshore-wind-farm-in-fresh-blow-to-ge-vernova/>; <https://nantucketcurren.com/news/off-the-coast-of-england-another-ge-haliade-x-wind-turbine-blade-failure-on-thursday>

<sup>6</sup> <https://www.msn.com/en-us/money/markets/rhode-island-needs-to-call-a-hiatus-on-offshore-wind-projects-amid-blade-failures-opinion/ar-AA1oaqN6>; <https://www.windpowermonthly.com/article/1856896/vestas-blade-snaps-rwe-offshore-wind-farm-uk-north-sea>

storm winds that the wind turbines would be designed to withstand, how compliance with design standards would be physically tested, and how BOEM decided what level of resiliency is sufficient. Adding to the FEIS's failures on this, the COP indicates that US Wind's analysis of these issues is still ongoing (*See* COP, Vol II, Section 2.5.2.).

Here's what Section 2.3 of the FEIS, Vol. I says on p. 2-42 under the heading "Severe weather and natural events:"

The design of WTGs and OSS includes a specification for a 500-year hurricane event consistent with the requirements in IEC61400-3. The 500-year full population tropical cyclone conditions define the robustness level criteria. The engineering specifications of the WTGs and their ability to sufficiently withstand weather events are independently evaluated by a certified verification agent when reviewing the FDR and FIR according to international standards, which include withstanding hurricane-level events. One of these standards calls for the structure to be able to withstand a 50-year return interval event. An additional standard also includes withstanding 3-second gusts of a 500-year return interval event, which would correspond to Category 5 hurricane wind speeds. If severe weather caused a spill or release, the actions outlined above would help reduce potential impacts. Severe flooding or coastal erosion could require repairs, with impacts associated with repairs being similar to those outlined in Chapter 3 for construction activities. While highly unlikely, structural failure of a WTG (e.g., loss of a blade, tower collapse) would result in temporary hazards to navigation for all vessels, similar to the construction and installation impacts described in Chapter 3.

Thus, the FEIS first states that "[t]he design of WTGs and OSS includes a specification for a 500-year hurricane event consistent with the requirements in IEC61400-3." But a few sentences later it says that the wind turbines are subject to a standard under which they are required to withstand *3-second gusts* of a 500-year return interval event. Then it states that one of the testing standards for the wind turbines "calls for the structure to be able to withstand a 50-year return interval event." These scattered statements make it impossible for the public (and others) to understand the level of extreme weather events that the wind turbines are intended to be able to withstand.

US Wind has publicly stated that the wind turbines are designed to withstand a Category 2 hurricane (90-110 mph winds).<sup>7</sup> This is consistent with the FEIS's statement that one of the standards to which the wind turbine are subject "calls for the structure [the wind turbines] to be able to withstand a 50-year return interval event." But this level of resilience isn't sufficient to protect against major environmental and economic harm. COP Volume I, p. 2-42 states that the estimated return period for hurricanes with wind speeds equal to or in excess of 96 knots (110.5 mph) is 44 to 68 years. Thus, a roughly 50-year event equates to a hurricane having wind speeds in excess of 110 mph, which qualifies as a Category 3 hurricane (111-129 mph wind speeds). This means that there would be a roughly 20% risk of a Category 3 hurricane during the first ten years of the Project and a roughly 50% risk over a 25-year period (using a 2%/year risk factor for

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<sup>7</sup> US Wind stated this at a January 10, 2024 South Bethany, DE Town Council Meeting.

a 50-year storm event). But the risk is higher, since the COP probabilities/return periods do not take into account the FEIS-acknowledged increase in storm frequency and severity due to climate change. And how many wind turbine blades would fail during a Category 3 hurricane? Even a small percentage failure rate would have far-reaching and devastating environmental and economic consequences, particularly given the Project's proximity to Delaware's and Maryland's shoreline.

Further demonstrating the need for a supplemental EIS, Section 2.5.2 ("Extreme Wind Conditions") of COP, Vol. II (revised July 2024) states the following:

US Wind has engaged an International Electrotechnical Commission compliant hurricane assessment to more thoroughly characterize the expected design input conditions and implications of tropical systems across the Project area. This work is underway.

Although what this statement is intending to say is far from clear, one can discern that design work for wind turbine resiliency during extreme weather events remains ongoing. When completed, the resiliency of the wind turbines and their blades needs to be addressed in a supplemental EIS with a public comment period.

### ***3. Physical Testing of the Wind Turbine Blades.***

The FEIS states that "[t]he engineering specifications of the WTGs and their ability to sufficiently withstand weather events are independently evaluated by a certified verification agent. . . ." But this only addresses the wind turbines' engineering specifications, not their physical testing. News reports state that due to the immense size of the GE Haliade X blades, the testing facility for the Vineyard Wind project had to cut part of the blades off so that they would fit in the testing facility. "While blades can be tested without the tip, it is not ideal, and engineers need to account for the adjusted weight."<sup>8</sup> The Executive Director of the Massachusetts Clean Energy Center's Wind Technology Testing Center states the following:

Turbine blades are getting heavier. They're getting more complicated. So not only do they have to be designed properly, they have to be tested properly as well to have full confidence that they will run smoothly."<sup>9</sup>

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<sup>8</sup> <https://nantucketcurrent.com/news/vineyard-wind-installed-the-largest-offshore-turbines-in-the-world-were-they-ready-for-primetime>.

<sup>9</sup> <https://www.energy.gov/eere/wind/articles/wind-technology-testing-center-upgraded-test-longer-turbine-blades#:~:text=%22Turbine%20blades%20are%20getting%20heavier,test%20longer%20wind%20turbine%20blades>.

#### **4. Lack of Emergency Response Plans.**

The FEIS fails to address emergency response plans for wind turbine blade failures. It also fails to acknowledge that failure of a single blade could result in many thousands of pounds of debris falling into the ocean, causing severe environmental damages, including damage to the nearby Delaware and Maryland shorelines and their beaches. The FEIS states only that “[w]hile highly unlikely, structural failure of a WTG (e.g., loss of a blade, tower collapse) *would result in temporary hazards to navigation for all vessels*, similar to the construction and installation impacts described in Chapter 3.”

As reflected by the above, a supplemental EIS (with a public comment period) is needed to address, among other things, the recent spate of wind turbine blade failures, the proper level of extreme weather event resiliency for the wind turbines, the physical testing of wind turbine blades, and emergency response plans for wind turbine blade failures.

#### **B. The FEIS Consistently Misleads the Public About the Installation of ADLS on the Project’s Wind Turbines**

A major issue for the public is the harm to the nighttime viewscape caused by the aviation lighting that would be installed on the wind turbines. The FEIS repeatedly misleads the public on this with its repeated refrain that US Wind has committed to installing Aircraft Detection Lighting Systems (ADLS) on the Project’s wind turbines without mentioning that, per the COP, US Wind will install ADLS only “if commercially feasible and approved by BOEM in consultation with FAA, USCG and other agencies.”<sup>10</sup> Thus, there is a high risk that ADLS will not be installed. The FEIS violates NEPA by making these misleading statements, which it then relies upon to wrongly conclude that nighttime aviation lighting would have a “*negligible impact on recreation and tourism.*” See B.2. below.

#### **1. Appendix H (Cumulative Seascape, Landscape, and Visual Impact Assessment) Misleads the Public About the Installation of ADLS.**

Appendix H to the FEIS, which sets forth BOEM’s “Cumulative Seascape, Landscape, and Visual Impact Assessment,” is a first stop for a member of the public seeking to understand the visual impact of the Project. The Appendix, however, misleads the public with repeated false statements that US Wind will be installing ADLS on the wind turbines.

Every reference in Appendix H to ADLS reflects that ADLS *will* be installed on the wind turbines. For example, in its “Conclusions” section, Appendix H states as follows:

***During operations, when ADLS is not activated (approximately 99.9 percent of all annual nighttime hours), there would be no offshore nighttime***

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<sup>10</sup> Members of the public should not need to hunt through thousands of pages of documents to find where the COP or Appendix G state the conditions under which US Wind would install ADLS. *Cf. MCI Telecomms. Corp.*, 57 F.3d 1136, 1142 (D.C. Cir. 1995) (“[T]his court has made it clear that an agency may not turn the provision of notice into a bureaucratic game of hide and seek.”).

***lighting impacts.” When activated by ADLS, lighting of Project WTGs would have major nighttime impacts.***

Not once does Appendix H mention that US Wind’s installation of ADLS is subject to major conditions that create a high risk that it will not be installed.

Other Appendix H references to ADLS include the following:

- “During construction, vessel navigation lights on the WTG and OSS foundations, as well as mid-tower and nacelle-top aviation hazard lights on the partially constructed WTGs and OSS would be illuminated (flashing 30 times per minute) for the duration of construction ***until the facility is placed into service and ADLS is activated.***” (p. H-35).
- “***During operations, when ADLS is not activated (approximately 99.9 percent of all annual nighttime hours), there would be no offshore nighttime lighting impacts.*** When activated by ADLS, nighttime lighting of Project WTGs would have major nighttime impacts resulting from continuously flashing lights, the sky light dome, and reflections on clouds during those limited times.” (p. H-35).
- “The strongest nighttime contrasts would result from dark skies (absent moonlight) combined with navigation lights; activated lighting on the OSS, mid-tower lights, and nacelle-top lights (***with ADLS activation***) reflecting off of low clouds and calm (reflective) surf; and the dark-sky light dome. The weakest nighttime contrasts would result from moonlit, cloudless skies; tranquil (reflective) seas; ***ADLS activation***; and only mid-tower lights.” (p. H-39).

## **2. FEIS, Volume I, Misleads the Public About the Installation of ADLS and Reaches Invalid Conclusions.**

Like Appendix H, FEIS, Vol I is also filled with false and misleading statements regarding the installation of ADLS. For example, in its discussion of the impacts of the Project’s operation on recreation and tourism, the FEIS falsely states that US Wind has voluntarily committed to install ADLS (no mention of conditions). It then relies on this false premise to wrongly conclude that nighttime aviation lighting would have a “*negligible impact on recreation and tourism.*” Specifically, FEIS, Vol I states the following on page 3-508:

***US Wind has committed to voluntarily implement ADLS for all FAA aviation hazard lighting, which would reduce the frequency and duration of the potential impacts of nighttime aviation lighting by over 99 percent compared to lights that are illuminated continuously at night (Capitol Airspace Group 2023), equivalent to approximately 0.1 percent of all annual nighttime hours.*** During times when the Proposed Action’s aviation warning lighting is visible, Proposed Action offshore lighting would add a

developed/industrial visual element to views that were previously characterized by dark, open ocean. These impacts would be stronger in onshore locations with limited existing artificial lighting and would be less detectable (if at all) in coastal cities and towns developed specifically to attract tourism. Although some visitors to undeveloped portions of the geographic analysis area with views of the ocean may choose to visit other beaches without offshore lighting, the Proposed Action's FAA aviation hazard lighting is unlikely to meaningfully change recreation and tourism patterns in the geographic analysis area. *Due to the limited duration and frequency of such events and the distance of the Proposed Action's WTGs from shore, visible aviation hazard lighting for the Proposed Action would result in a long-term, intermittent, negligible impact on recreation and tourism.*

The same or similarly false and misleading statements are found throughout FEIS, Vol. I. See pages 3-355, 3-356, 3-508, 3-526, 3-532, 3-534, 3-535, 3-539. Not once does it state that US Wind's installation of ADLS is subject to the conditions that its installation be commercially feasible and that it be approved by various government agencies.

### **3. BOEM Violates NEPA In Its Responses to Public Comments Regarding Nighttime Aviation Lighting.**

In BOEM's "Responses to Comments on the Draft Environmental Impact Statement" (Appendix O to the FEIS), BOEM repeatedly fails to comply with NEPA and applicable regulations by repeatedly stating in its responses to public comments that US Wind has committed to install ADLS without mentioning the major conditions to its installation. BOEM does this even in response to comments that specifically raise questions about (a) FAA approval of ADLS and (b) US Wind's commitment to installing ADLS being subject to US Wind's determining that doing so is "commercially feasible." Appendix O even states in one response that *"[t]he FAA has approved, and the applicant has committed to voluntarily implementing the Aircraft Detection Lighting System (ADLS) described in Section 3.6.8 and throughout the Final EIS."* This is false.

And there's more:

a. On page O-116, a public commentator directs BOEM to a North Carolina State study that surveyed beach home renters regarding the impact visible wind turbines would have on their willingness to return to rent a beach home again. The report found that 54% of respondents stated that they likely would not return to a beach with nighttime visible wind turbines. BOEM's invalid response states as follows:

As stated in Section 3.6.8.5<sup>11</sup> and in multiple other locations throughout the Final EIS, *the Project has committed to voluntarily*

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<sup>11</sup> Section 3.6.8.5 states that US Wind has committed to voluntarily implement ADLS but never mentions that US Wind's installation of ADLS is subject to conditions that create a high risk that ADLS will not be installed.

***implementing an Aircraft Detection Lighting System (ADLS) that only activates aviation hazard lighting when aircraft approach the wind farm.*** This was estimated to occur during approximately 0.1 percent of annual nighttime hours.

This response is patently misleading.

b. On page O-157, a commentator states that even though “US Wind claims the aircraft lights would be ‘motion activated’ rather than permanently lit at night,” it is far more likely that the FAA would require constant lighting, “resulting in constant visual detriment to viewers on shore and permanent disruption of the natural beauty of the area, both day and night.” In response, BOEM provides the following invalid response that in addition to again restating that US Wind has committed to install ADLS, adds the false assertion (in the context of an offshore wind project) that the FAA has approved ADLS:

***The FAA has approved, and the applicant has committed to voluntarily implementing the Aircraft Detection Lighting System (ADLS) described in Section 3.6.8 and throughout the Final EIS.*** The Final EIS considered the commenter’s input when determining the impact rating for recreation and tourism, as well as employment and economics. A new survey-based study would not be able to resolve the inherent incremental uncertainty regarding impacts that arise at this stage of the project. ***BOEM used the best available information in the EIS.***

c. On pages O-162 and O-164, a public commentator states, in part, as follows:

To mitigate the nighttime viewshed impact of aircraft warning lights, US Wind states on page 23 of Volume 2 of its COP it will use Aircraft Detection Lighting Systems (ADLS) ***if “commercially feasible.”*** These systems only turn on the aviation warning lights if aircraft are in the area. US Wind does not define the terms or conditions of what would make the systems commercially feasible. Without a solid commitment to using ADLS, the EIS should assume the system will not be used and define the nighttime impact on the viewshed as major and/or specify the use of ADLS as mandatory.

BOEM’s response states, in part, as follows:

***As stated in Section 3.6.9<sup>12</sup> and in multiple other locations throughout the Final EIS, the Project has committed to voluntarily implementing an Aircraft Detection Lighting System (ADLS) that only activates aviation hazard lighting when aircraft approach the wind farm.*** This was estimated to occur during approximately 0.1 percent of annual nighttime hours.

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<sup>12</sup> Section 3.6.9 states that “US Wind has committed to installing ADLS on WTGs (p. 3-514) and that ADLS will be activated when the facility is placed in service (3-532).



Despite the commentator specifically raising the issue that US Wind would install ADLS only if “commercially feasible,” BOEM’s response fails to acknowledge that US Wind’s installation of ADLS subject to substantial conditions. The response is patently misleading.

d. On page O-163, a commentator states, in part, as follows:

At the May 31st meeting in Bethany Beach Delaware, Ron Larson from US Wind stated the wind turbines will not cause light pollution because they will be equipped with an artificial detection lighting system. *As of that meeting the FAA has not approved that system. Is it approved now and what guarantees it will be used so the so the entire East Coast won't see flashing red lights all day and night?* . . . What guarantees you will use the artificial detection lighting system and how will we be compensated if you do not?

BOEM’s response states, in part, as follows:

*As stated in Section 3.6.9 and in multiple other locations throughout the Final EIS, the Project has committed to voluntarily implementing an Aircraft Detection Lighting System (ADLS) that only activates aviation hazard lighting when aircraft approach the wind farm.* This was estimated to occur during approximately 0.1 percent of annual nighttime hours.

Despite the commentator specifically raising the issue of FAA approval, the response fails to even acknowledge that US Wind’s installation of ADLS is contingent on, among other things, FAA and other governmental approvals. The response is patently misleading.

e. On page O-300, a commentator states, that the red blinking lights will cause light pollution and impact wildlife. BOEM responds as follows:

Thank you for your comment. *As stated in Section 3.6.9 and in multiple other locations throughout the Final EIS, the Project has committed to voluntarily implementing an Aircraft Detection Lighting System (ADLS) that only activates aviation hazard lighting when aircraft approach the wind farm.* This was estimated to occur during approximately 0.1 percent of annual nighttime hours.

This response is patently misleading.

**4. US Wind Adds to the Problem by Falsely Stating on its Website That It Will Be Using ADLS for the Project.**

Adding the problem of false statements about the use of ADLS, US Wind's website states as follows under the heading “Aircraft Detection Lighting System:”

In keeping with our commitment to reduce nighttime light impacts along the Maryland and Delaware coast, *US Wind will be using technology that keeps our facility's lights off 99% of time throughout the year.* <https://uswindinc.com/resources/>

As reflected by the above, the FEIS repeatedly misleads the public with its repeated refrain that US Wind has committed to installing ADLS on the Project's wind turbines without mentioning that it will be installed "if commercially feasible and approved by BOEM in consultation with FAA, USCG and other agencies." To address this and the failure of Appendix O to provide valid responses to public comments relating to ADLS, a supplemental EIS (with a public comment period) is needed to comply with NEPA.

Submitted by Edward E. Bintz to Lorena Edenfield at [Lorena.Edenfield@BOEM.gov](mailto:Lorena.Edenfield@BOEM.gov) as BOEM's listed contact.

*/s/ Edward E. Bintz*

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June 5, 2024

Ms. Kimberly Cole, Administrator DNREC\_DCP\_PublicComment@delaware.gov  
Delaware Coastal Programs  
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Public Comments on Docket #2024-P-MULTI-0007, US Wind permit request, and on the Federal Consistency Certifications

Dear Ms. Vest, and Ms. Cole,

Please accept the following public comments and supporting documents regarding US Wind request for Subaqueous Lands Permit/Lease, Water Quality Certification, Wetlands Permit, and a Beach Preservation Coastal Construction Permit, and on Federal Consistency Certification.

**DNREC is subject to a conflict of interest in considering these permit applications, due to Governor Carney's prior execution of the December 19, 2023 "Term Sheet" with offer of payments from US Wind. This Agency reports directly to the Governor, who has already stated support for the US Wind project, citing only "benefits" of the Project, and not potential detriments, and has entered into an agreement with the Applicant promising financial consideration to the State which is contingent on all permits being approved.**

The permitting process is designed to protect Delaware citizens from harm and requires neutrality from state agencies during the permit process. The Governor and DNREC have already demonstrated a biased attitude favoring offshore wind developers shown by consideration of establishing a Good Neighbor Agreement, and advocating for legislation requiring Delmarva Power accept bids to procure twenty year contracts for offshore wind power at a premium price compared to wholesale market prices. This legislation ignores the Governor's own Offshore Wind Working Group recommendation this procurement process should be a competitive bidding process including onshore wind and solar.

In addition the Term Sheet offer is a bad deal for Delaware as shown in the attached "Critique of PA Consulting Group Delaware Offshore Wind Benefits Report". The Net Present Value of the combined twenty year lease fees, community benefits package, and free Renewable Energy Credits is \$40 million. That is completely wiped out by just a one year loss of one half percent of Delaware's \$2 billion a year beach tourism economy. The federal Bureau of Ocean Energy Management (BOEM) in charge of approving offshore wind projects relies on a University of Delaware survey showing visualizations of turbines to beach area visitors in considering the potential for lost tourism. The author of that study, Jeremy Firestone, stated in a 2022 Rehoboth Beach Town Hall meeting there would be lost tourism and lower property values if turbines were visible from the beach, though he supplied no specific estimates of the amount of loss. Even a minor reduction wipes out the Term Sheet offer.



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**The US Wind request to bury power cables under our Inland Bay and the Indian River should be rejected**

The Indian River and Bay are heavily used fishing and recreation areas under considerable environmental distress. The Indian River Bay is classified as a Water of Exceptional Recreational Significance and a Harvestable Shellfish Water. Adding four distinct large diameter power cables in a trenching process adds additional stress including Electric Magnetic Fields (EMF). Very few marine life species have been tested for potential impacts from EMF exposure. The cables are to be buried 3 to 7 feet deep. Cables buried the same depth from the Block Island, RI offshore wind project came to the seafloor surface in the ocean and on a tourist beach and remained exposed for up to two years before being reburied. That risk is unwarranted when existing Delmarva Power transmission line rights of way exist to carry the power over land to a substation at the Indian River Power Plant. Our permitting process should not be a shortcut to allow US Wind to save money. It should also be noted a US Wind representative at a May 1, 2024 town hall meeting held at Indian River High School confirmed US Wind has no prior experience building offshore wind. That lack of experience should give DNREC pause in issuing permits for burying cables in our precious Inland Bays.

**Bringing power cables ashore violates Delaware's Coastal Zone Protection Act so permits should be rejected**

The Coastal Zone Protection Act purpose is stated in Delaware Code § 7001 as, "It is hereby determined that the coastal areas of Delaware are the most critical areas for the future of the State in terms of the quality of life in the State. It is therefore, the declared public policy of the state to control the location, extent and type of industrial development in Delaware coastal areas. In so doing, the State can better protect the natural environment of its bays and coastal areas and safeguard their use primarily for recreation and tourism." BOEM states in section 3.6.9 of its Draft Environmental Impact Statement (DEIS) for US Wind, "The daytime presence of offshore wind turbines, as well as their nighttime lighting, would change the perception of ocean scenes from natural and undeveloped to a developed wind energy environment and would be an unavoidable presence in views from the coastline". The impact is rated by BOEM as **major**. The use by US Wind of industrial sized turbines 938 feet tall is in direct opposition to the spirit of the Coastal Zone Protection Act and should be denied.

**The permitting process presents the only Delaware opportunity to mitigate negative impacts of offshore wind development**

The US Wind project was approved by the Maryland Public Service Commission, is subsidized by Maryland electric customers, and will be approved by federal agencies in federal waters. Ocean City, MD will not allow power to come ashore in the city. Maryland can override this objection, but have not done so. The alternative is if Delaware allows power to come ashore in a Delaware state park. With that power state agencies can deny access and kill the project, or add permit contingencies to mitigate the worst local impacts.

DNREC is trying to avoid discussion of the wider impacts of offshore wind by limiting comments to the specifics of the permits. However, the document list at <https://dnrec.delaware.gov/events/dnrec-joint-permitting-hearing-us-wind-project/> includes references to federal permitting appendixes for the wider project. The nexus of the requested permits and the offshore wind project itself cannot be avoided.



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I attach a copy of my “Public comments on Draft Environmental Impact Statement on Docket BOEM-2023-0050 for reference.

US Wind has applied for an Incidental Take Authorization from the National Marine Fisheries Service (NMFS) that includes the allowed harassment of the critically endangered North Atlantic right whale. My comments state NMFS has failed to consider the cumulative impacts of all the offshore wind projects on the east coast as required. A federal lawsuit has been filed over the same issue for a Dominion Energy project in Virginia. **DNREC should not issue permits until this Incidental Take lawsuit is resolved.**

The large turbines planned for the US Wind projects have never been built in the ocean before so there are no operational noise measurements. The first large turbines are going into operation off Nantucket so we should soon have actual operational noise measurements. **DNREC should issue no permits until operational noise levels are measured and shown to be safe for marine mammals.**

There have been no studies of the impact of EMF, or operational noise on horseshoe crabs. The US wind project is built in the horseshoe crab reserve. **DNREC should issue no permits until studies on the impact of EMF and operational noise on horseshoe crabs is known to be acceptable.**

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 by Lutzeyer et al. (2017), “The Amenity Costs of Offshore Wind Farms: Evidence from a Choice Experiment” (<https://www.aminer.org/pub/5c8c9f8a4895d9cbc6134d87/the-amenity-costs-of-offshorwind-farms-evidence-from-a-choice-experiment> ). The Lutzeyer study showed nighttime visualizations of red flashing aircraft warning lights, and 54% of respondents stated they were not likely to return to a beach with nighttime visible turbines. To mitigate the nighttime viewshed impact of aircraft warning lights, US Wind states it will use Aircraft Detection Lighting Systems (ADLS) if “technically feasible, commercially available, and approved for use by FAA, BOEM, and USCG.” These systems only turn on the aviation warning lights if aircraft are in the area. US Wind does not define the terms or conditions of what would make the systems technically or commercially feasible. **DNREC should add a contingency the permits are void if ADLS is not used.**

Most turbine blades are landfilled. The blades are massive. **DNREC should require a US Wind commitment no blades will be landfilled in Delaware.**

Until recently all energy generating facilities, including offshore wind, have been required to post pre-construction bonds to cover decommissioning costs. Vineyard Wind off Nantucket began construction after receiving federal approvals which included the bond requirement. After construction began the developer petitioned BOEM to delay purchasing bonds until after 15 years of operation and the petition was approved. BOEM is considering delaying bonding requirements on all offshore wind projects. US Wind is an LLC. If they go bankrupt there are no other assets to cover decommissioning so the cost could fall to the state. **DNREC should add a contingency the permits are void if no preconstruction decommissioning bond is purchased.**

**The following comments critique the US Wind document titled “Consistency with Delaware State Coastal Zone Management Policies” citing sections of the Delaware Code**

*Delaware Policy 5.4.2: The natural environment of the coastal strip shall be protected from the impacts of heavy industry and oil pollution for the purpose of recreation, tourism, fishing, crabbing, and gathering other marine life useful in food production. Delaware Policy 5.4.22: The DNREC shall consider the public*



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*interest in any proposed activity which might affect the use of subaqueous lands. These considerations include, but are not limited to, the following: 5.4.22.3 the potential effect on the public with respect to commerce, navigation, recreation, aesthetic enjoyment, natural resources and other uses of the subaqueous lands. Delaware Policy 5.5.1: State public lands shall be protected to preserve the scenic, historic, scientific, prehistoric and wildlife values of such areas.*

BOEM in its DEIS found Vessel collisions will increase, and US Coast Guard Search & Rescue Operations will be delayed. That means increased risk of human death. Noise from construction and operations will harass marine life including endangered species. That means more marine life deaths, and risks extinction of the North Atlantic right whale. Turbines visible from shore will dominate the view especially from flashing red lights at night. That means potential lost tourism and lower property values. Turbines will interfere with civil and military radar. That risks vessel collisions and reduced military security. Commercial fishermen will abandon fishing in lease areas. That means lost income for fisherman, and lowers food security. Clearly these policies are violated, and permits should be denied.

*5.4.22.4 The extent to which any disruption of the public use of such lands is temporary or permanent.*

Cables buried beneath the inland bays will be permanent as there are no plans for decommissioning.

*5.4.22.6 The extent to which the applicant's primary purpose and objectives can be realized by alternatives, i.e. minimize the scope or extent of an activity or project and its adverse impact*

This is a Maryland project subsidized by Maryland electric customers, approved by the Maryland Public Service Commission. The power cables can be brought ashore in Maryland to avoid all disturbance in Delaware. Permits should be denied.

*5.4.22.8 The extent to which the public at large would benefit from the activity or project and the extent to which it would suffer detriment.*

US Wind falsely claims job creation in Delaware. All jobs are promised to Maryland. Any jobs in Delaware would be incidental. All impacts in Delaware would be negative including temporary disruptions of normal activities and temporary pollution.

*Delaware Policy 5.15.2.1: The CMP supports OCS development of alternate energy facilities due to the compelling national interest provided such activities do not result in the degradation of Delaware's natural resources*

US Wind falsely claims annual savings of 107 million tons of carbon dioxide. First the savings potential are only 2.2 million tons per year (1596 megawatts times 8760 hours a year times a 43% capacity factor equals about 6 million megawatt-hours per year, times the PJM regional grid last twelve months system mix of 0.367 tons per megawatt-hour equals 2.2 million tons). Second, the savings are actually zero since according to the Maryland PSC consultant offshore wind is just replacing onshore wind that has better emission reduction potential than offshore wind. The US Wind project does not meet this requirement and permits should be denied.

*Delaware Policy 5.3.1.2: The water resources of the state shall be protected from pollution which may threaten the safety and health of the general public*

US Wind acknowledges temporary pollution and turbidity will occur.



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*Delaware Policy 5.3.1.13: Designated exceptional recreational or ecological significance (ERES) waters shall be accorded a level of protection and monitoring in excess of that provided most other waters of the State. These waters are recognized as special natural assets of the State, and must be protected and enhanced for the benefit of present and future generations of Delawareans.*

Cables buried the same 3' to 7' below the surface in this project in the Indian River and Bays came to the surface in the ocean and a tourist beach off Nantucket and took years to rebury. That same risk exists here. Also there are minimal studies on EMF effects on many animals found in the bay. Unburied cables have much higher levels of EMF (148mG at surface vs. 12mG at 3.3' depth). This project would bury four major cables. There are too many risks involved to jeopardize the Indian River Bay which is classified as a Water of Exceptional Recreational Significance and a Harvestable Shellfish Water. An Environmental Liability Bond is needed. Permits should be denied.

*5.4.21.4: The laying of any pipeline, electric transmission line, or telephone line in, on, over, or under the beds of public subaqueous lands. The cables are clearly being constructed under the subaqueous land.*

*5.4.23.2 Any effect on shellfishing, finfishing, or other recreational activities and existing or designated water uses;*

The DEIS highlights commercial fishing will abandon wind lease areas so clearly this section is not met and permits should be denied. US Wind admits shellfish beds may be impacted (page 41).

*5.4.23.5 Any impairment of air quality either temporarily or permanently, including noise, odors, and hazardous chemicals; the extent to which the proposed project may adversely impact natural surface and groundwater hydrology and sediment transport functions.*

No actual measurements of operational noise have been made on turbines of the size proposed for this project. No permits should be issued until this information is available.

*Delaware Policy 5.11.2.1: All forms of protected wildlife shall be managed and protected from negative impacts. Delaware Policy 5.11.3.2: Rare and endangered species are in need of active, protective management to preserve and enhance such species. The diversity and abundance of the native flora and fauna of Delaware, particularly those deemed rare or endangered, shall be preserved and enhanced through the protection of the habitat, natural areas, and areas of unusual scientific significance or having unusual importance to their survival.*

US Wind applied for a Letter of Authorization for Incidental Take of marine mammals including the critically endangered North Atlantic right whale. The letter has not been authorized yet. A similar LOA for the Coastal Virginia offshore wind project has been challenged in court for failure to consider the cumulative impact of multiple lease areas on the east coast. Current LOA's do not consider the impacts of operational noise. Until these issues are addressed no permits should be issued.

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