DELAWARE CENTER FOR THE INLAND BAYS
Research. Educate. Restore.

MEMORANDUM

TO: Program Manager, Office of Renewable Energy Programs (OREP), U.S. Department of the Interior, Bureau of Ocean Energy Management

FROM: Delaware Center for the Inland Bays

DATE: November 20, 2023

RE: Comments on Maryland Offshore Wind Project - Draft Environmental Impact Statement (DEIS) -- Docket No. BOEM-2023-0050

The Delaware Center for the Inland Bays (the Center) offers these comments on the Maryland Offshore Wind Project Draft Environmental Impact Statement (DEIS).

The Center was established in 1994 by legislation passed by the Delaware General Assembly and signed by then-Governor Thomas R. Carper. Delaware's Inland Bays are one of 28 estuaries of national significance, and thus is part of the National Estuary Program established under Section 320 of the Federal Clean Water Act.

The Center's mandate is to protect, preserve and restore Delaware's Inland Bays, an area of extraordinary productivity, diverse plant and animal life, robust recreational opportunity, and significant economic value. The watershed is, and has been, highly impacted by excess nutrients associated with agricultural production and rapid residential and commercial development. And, as the lowest-lying part of the lowest-lying state in the Nation, the watershed is extraordinarily vulnerable to rising sea levels, increasing atmospheric temperatures, coastal and inland flooding, storm surges, and shoreline erosion. All this makes our lands and waters uniquely sensitive to novel perturbations and stressors.

In response to the submission by US Wind, Inc. (US Wind) of a Construction and Operations Plan (COP) to develop the Maryland Offshore Wind Project, the Center's Science and Technical Advisory Committee (STAC) established a Wind Subcommittee to review the DEIS and provide science-based recommendations to the Center as a basis for these comments. Given the Center's focus on the health and well-being of the Inland Bays, the Wind Subcommittee restricted its review of the project to the impacts associated with Alternative B – the preferred action, as well as the land-based power cable on-shoring options laid out in Alternatives C-1 and C-2.

As described in the DEIS, Alternative B contemplates "up to four offshore export cables (installed within one Offshore Export Cable Route) [that] would transition to a landfall at 3R's Beach via horizontal directional drilling (HDD). From the landfall, the cables would continue

along the Inshore Export Cable Route within Indian River Bay to connect to an onshore substation adjacent to the point of interconnection (POI) at the Indian River substation owned by Delmarva Power and Light in Dagsboro, Delaware." The Wind Subcommittee focused particular attention on potential impacts associated with US Wind's proposal to lay the export cables in a hydro jet-excavated channel through the Indian River Bay.

General Conclusion:

The DEIS is missing some key studies to determine the effect of this activity. Responses to potential impacts on the Inland Bays are generic and vague with no real analysis of the preferred alternative.

The Indian River Bay is not only a key component of an Estuary of National Significance, it is also home to Essential Fish Habitat for Black Bass, Scup and Summer Flounder and is identified by the Delaware Department of Natural Resources and Environmental Control (DNREC) as a water of Exceptional Recreational or Ecological Significance. As such, DNREC must provide the Inland Bays, "a level of protection in excess of that provided most other waters of the state." The Indian River Bay is also home to important wildlife including horseshoe crabs, Eastern Diamondback Terrapins, hard clam beds, and nesting terns. For all these reasons, any proposed actions that could impact the estuary must be thoroughly examined using the best scientific data available.

In the absence of data to confirm there is no impact on Indian River Bay, the Center opposes the water-based export cable route through the Bay as outlined in Alternative B, US Wind's preferred option. Alternative C describes an overland cable route that would avoid the Indian River Bay. Based on the Center's review of this Draft Environmental Impact Statement, we recommend selecting this alternative as part of the Preferred Alternative.

The Center's more specific, technical feedback on sediment transport, wetlands and biotic impacts follows.

Specific DEIS Comments:

SEDIMENT TRANSPORT[1]

1. **There is a lack of information on the validity of the model relied upon to characterize sediment transport for the DEIS.**

   The lack of an updated hydrodynamic model for the Inland Bays has been a recognized need for better understanding of particle transport and water quality since 2020. Given

[1] Comments drawn from Hodge Water Resources (HWR) Technical Memorandum (revised September 27, 2021) -- Indian River Bay Sediment Dispersion Analysis

that no model yet exists to understand sediment transport in this estuary, there is a question as to the validity of the approach and the model used.

- No model report has been made available. Without this, there is no way to determine the scientific rigor of the sediment transport model.
- The model doesn't appear to be defined in the DEIS. This section should be revised to include this information.
- Documentation of a sediment dispersion model was seemingly not included in the DEIS. This section should be revised to include this information.
- Documentation of and or coupling of dispersion and hydrodynamic model was seemingly not included in the DEIS. This section should be revised to include this information.
- Sediment sources were seemingly not defined in model. This section should be revised to include this information, including if they were for Vibracore locations only.
- For the model used, the candidate selected generic model constants (for a different system) with no justification for why those are warranted.

Section 5.0 - SUSPENDED SEDIMENT IMPACTS IN INDIAN RIVER BAY FROM JET PLOWING – The Hodge Water Resources (HWR) Memo states "Each of these estimates is made without an evaluation of variability. They are approximations that appropriately characterize individual mechanisms, but they may not completely capture how the mechanisms interact." This indicates that the sediment dispersion model described in the memo does not take into account hydrodynamic forcing. The applicant should update the model to include this.

- **Subsection 5.2 - EVALUATION OF DURATION AND EXTENT OF SUSPENDED SEDIMENT PLUME -** Note that the modeling in the memo is not a 3-D hydrodynamically coupled model which is the current best practice. As the memo notes, "It is not possible to accurately and precisely predict transverse mixing without the use of numerical models. The three-dimensional and temporal variability of currents in an estuary are two of the primary reasons that numerical models are typically employed to analyze the movement of a suspended sediment plume."

We don't know that this was an inadequate model; there just wasn't enough information provided to judge the model nor information on how it ran (what percentage of the variation did it explain). There may be no adequate model. Perhaps most concerning about the quality of sediment transport modeling used to inform this DEIS is the conclusion reached by HWR:

> *"It is also important to note that the analysis presented in this memorandum does not use numerical modeling techniques. Therefore, all the determinations made in this memorandum are estimates based on available information. The extent, duration, resolution, and location of the higher-impact corridor identified in this analysis would be different if more comprehensive analysis techniques (i.e.,*

numerical modeling) were employed. The combination of uncertainty associated with the level of analysis presented in this memorandum and the uncertainty with regards to impact thresholds should be considered when evaluating the findings of this analysis."

2. **The model does not account for wind.**

   Subsection 3.2 - TIDAL BEHAVIOR – This section makes no mention of wind driven events in its discussion. Wind is one of the major tidal drivers for Indian River at Rosedale. The applicant should update the model to include wind-driven events.

3. **The model does not account for sediment particle sizes common to the Indian River Bay.**

   Section 4.0 - CHARACTERIZATION OF SEDIMENTS – This section states that "Sediments in the bays are typically fine to very fine (i.e., silts) and are mostly characterized as mud with the presence of sand. Mud will typically be composed of silts and clays with a high-water content." It is unclear if this definition includes flocculus that is the upper portion of much of the sediments in the upper parts of Indian River.

   - **Subsection 4.1 - VIBRACORE SAMPLING ALONG CABLE ROUTE** This section should be revised to include an explanation of why there is significant spacing of samples around VC-IRB-06 (which is likely one of the areas with fines in suspension).

4. **The model does not account for short-term impacts, only longer-term effects.**

   Subsection 3.1 - WATERSHED AND FRESHWATER FLOW – States "...we are evaluating long-term average conditions rather than a hydrologic time series." This seems to contradict this statement from the memo: "The duration of the suspended sediment plume is likely to last between 5 and 24 hours. Maximum sustained concentrations within the suspended sediment plume will be on the order of 7,270 milligrams per liter (mg/L)."

   Section 6.0 - CONCLUSIONS – Is the memo saying that sediment predicted to be suspended for up to 24 hours will only move 300m? According to the memo, "Based on this analysis, we have identified a 108m corridor where higher sediment impacts are likely to be experienced. The duration of higher suspended sediment concentrations is likely to be less than 5 hours based on the estimated settling time for silt-sized particles (4.2 hours). We have also estimated a 600m corridor where lower impacts may occur (300 m from the proposed cable route on either side). The duration of the suspended sediment plume in this region is likely to last between 5 and 24 hours."

5. **The model incompletely analyzes the role of freshwater inflows and mixing on sediment flushing rates.**

Subsection 3.4 - FLUSHING TIME

- This section does not indicate whether flushing time calculation precludes any mixing between Rehoboth Bay and Indian River Bay. This section should be revised to include any hydrodynamic model evidence that suggests mixing between the two bays.

- The interaction between tides and freshwater flow into the estuary is the primary driver of currents, but only in the context of surface water components for which almost all the freshwater flow into the bays is estimated (there is only one stream gauge monitoring flow into Indian River and Rehoboth Bays). This section should be revised to state whether groundwater is a large element of freshwater flows to the Bays and if so, whether it fluctuates over time. This section should also address whether fluctuations in groundwater flows would have any impact on the 2-D hydrodynamic model results.

6. **The modelers use simplistic assumptions to determine the rate at which sediment is lost to the water column in their model.**

- The model uses a loss rate of 25%, which was developed during a study in New Hampshire (RPS, 2015) but specifically states that *they found no published loss rates for silty/sandy sediment.* The loss rate assumption will likely be a key component driving dispersion. The analysis would have been stronger if the modeler had tested different loss rates and presented results. According to the HWR memo, "…25% is a common assumed value for jet plowing in many types of sediments. The loss rate of 25% was used in the modeling of jet plowing in Little Bay, a tidal estuary, in New Hampshire (RPS, 2015). Subsequent monitoring of a test run of jet plowing indicated that the modeling results were consistent with observed conditions (Normandeau, 2019). While not definitive, this work supports the use of 25% as the loss rate in an estuary."

- Model setup seems to be 'mean state of current', the report is unclear on how entrained sediment will behave for any specific set of tidal/wind circumstances. Per the HWR memo, "The maximum extents of the suspended sediment plume are shown in Figure 5-1. The timing of jet plowing with respect to tides may change the direction of the suspended sediment plume, but the total excursion from the cable is expected to be consistent with excursions shown in this report." The analysis would have benefited from a clear understanding of existing sediment concentrations along the proposed cable route so BOEM and other would have a clearer idea of the sediment load changes that will be caused by jet plowing.

WATER QUALITY AND WETLANDS

1. **The DEIS provides an incomplete assessment of dredging impacts.**

- This section includes no analysis of impact of dredging to fringing wetlands on the estuary once the channel is dredged and should be revised to include this information and analysis.

- The HWR memo not mention dredging that may need to be done to accommodate jet plow barge and supply vessel drafts and should be revised to include this information.

- The assumptions for Impacts to Water Quality are based upon the original sediment transport modeling previously presented by US Wind to the Center's STAC Wind Subcommittee. The Subcommittee had significant questions regarding that effort, requested further clarification, and has not received specific responses to its questions. As such, the assumptions and subsequent conclusions provided in this report related to sediment transport and related plumes impacting habitats and fauna may not be accurate. Additional sediment modeling is recommended to lend needed credibility to the evaluations of this report.

2. **The DEIS fails to adequately account for other statutes and regulations in the DEIS.**

   Subsection 3.5.8 - WETLANDS AND OTHER WATERS OF THE UNITED STATES[2] – The DEIS focused on Section 404 of the Clean Water Act. This is one of the many regulations that come into play regarding working in and around wetlands and other regulated waters. These need much more consideration and discussion in the DEIS. Other regulations should be recognized and discussed, including but not limited to:
   - The Rivers and Harbors Act of 1899, with special attention given to Sections 10, and possibly 13 and 14
   - Section 401 of the Clean Water Act
   - Section 307(c) of the Coastal Zone Management Act of 1972, as amended
   - National Environmental Policy Act of 1969
   - The Fish and Wildlife Act of 1956
   - Migratory Marine Game-Fish Act
   - Fish and Wildlife Coordination Act
   - National Historic Preservation Act of 1966
   - Marine Mammal Protection Act of 1972
   - Section 402 of the Clean Water Act (for adjacent upland area)

   If these regulations are addressed elsewhere in the DEIS, then that portion of the document should be referenced and the authors should limit reiterations of selected portions of that review. Lastly, the DEIS barely mentioned State regulations and omitted Sussex County codes.

3. **The DEIS relies on an inappropriate database to formulate its landcover assumptions (see discussions under 3.5.8)**

   The DEIS uses projected regional resource impact trends (unrelated to the project) as part of the assessment. All other permitting agencies focus, almost strictly, on the impacts of

[2] Maryland Offshore Wind Project Draft Environmental Impact Statement, 2023.

the proposed work/project. This use of projected regional trends to define proposed project impacts is both novel and inappropriate.

4. **This section is highly focused on wetlands, and nearly omitted a similar level of discussion on open water systems, which is the predominant resource disturbed under the proposed alternative. The focus of this section should more comprehensively address the open water system.**

5. **This section of the DEIS relies on the National Wetland Inventory (NWI) maps as the basis of the impact assessments. First, as noted above, open water systems were essentially omitted from the assessment. Second, the intended purpose of the NWI mapping is stated as follows:**

> *"The U.S. Fish and Wildlife Service (USFWS) established the National Wetlands Inventory (NWI) to provide resource managers with information on the location, extent, and types of wetlands and deepwater habitats. The objective of NWI mapping is to produce medium resolution information on the location, type, size of these habitats such that they are accurate at the product scale of 1:12,000 (1:63,360 in Alaska). It is not designed or intended to yield legal or regulatory products, but may be used to support management decision-making processes."*

This inventory provides medium resolution for landscape scale trends analysis. It was not intended to be used to evaluate specific local utility line route alternative analyses. It is an inappropriate database to use for this type of localized evaluation.

6. **The section offered generic definitions of wetlands and related natural resources. When there is a regulatory definition for a term (e.g., wetlands), it should be stated and explained to provide an accurate foundation for subsequent evaluations.**

7. **This section of the DEIS offers a highly subjective discussion of the impacts associated with the alternatives, with insufficient supporting data.**

BIOTIC IMPACTS

1. **The DEIS fails to support its claim of minimal biotic impacts.**

Biotic resource impacts can be direct (taking) or indirect (removal of habitat, food source, alteration of temperature). The effects of disturbance to biota are usually unknown until a disturbance occurs, and has been found to be positive, neutral, or negative. Again, without sufficient monitoring, or independent research prior to the proposed disturbance, the impacts are not known and therefore cannot support the claim—as included in this DEIS—of minimal impact.

2. **The HWR memo asserts that Indian River Bay will be sensitive to sediment deposition but then inexplicably asserts that calculating the potential impacts to the following receptors is beyond the scope of this analysis:**
    - The cooling water intake for Delmarva Power and Light facility (sensitive to suspended sediment).
    - Tidal wetlands along the shoreline of Indian River Bay (sensitive to suspended sediment and deposition).
    - Shellfish harvesting areas (sensitive to suspended sediment and deposition).

3. **The DEIS lacks necessary analysis and discussion of the impacts of project-related activities on Benthic Resources; Finfish, Invertebrates, and EFH in the Indian River Bay, including the following:**
    - These sections lack an analysis and discussion of the impacts of disturbing contaminated sediments within Indian River Bay during cable-laying activities. The applicant should perform sediment contaminant transport modeling to support this analysis.
    - These sections lack a cohesive and detailed discussion of cable heat impacts and should be revised to include this information and analysis.
    - These sections lack any mention of egg and larval entrainment during jet trenching activities and should be revised to include this information and analysis.
    - The discussion of noise impacts is lacking detail. This section should be revised to include information regarding the level of noise generated by these activities, as well as information regarding the impacts of the particle motion aspect of noise on benthic organisms.

4. **The DEIS's description of affected environment (Section 3.5.5.1), does not describe the inshore cable route in Indian River Bay at all.**

    This section has only one sentence describing the finfish present in the Indian River Bay and does not discuss any invertebrates in the Bay. Without a description of the habitat and organisms present in Indian River Bay, one cannot fully understand the potential impacts of this proposed cable route.

5. **Benthic Resources, Proposed Action: This section should be revised to include more detailed information on the level of noise that will be generated by HDD and gravity cell installation.**

6. **Finfish, Invertebrates, and EFH, Proposed Action: This section lacks a discussion of noise impacts due to cable laying activities within Indian River Bay and should be revised to include this information and analysis.**

7. **Several potentially impacted aspects of Indian River Bay are listed as low/no impact and reference Appendix F. Appendix F is inadequate for a thorough, site-specific understanding of potential impacts.**
    - Appendix F is *"Impact-Producing Factor Tables and Assessment of Resources with Minor (or Lower) Impacts."* The main document (DEIS) should include some

discussion that categorizes/justifies a habitat or fauna as having minor impacts before it gets placed into these tables.

8. **Appendix F: Note: Most of the comments pertaining to 3.5.4 are arguably associated with the offshore work. Included herein because these comments are associated with flying species, whose impact offshore can impact populations within the Inland Bays.**
    - Example: 3.5.1.5.1.1: The report indicated a potential temporary effect (e.g., noise). Should seasonal restrictions during construction be discussed?
    - Also, this evaluation focused on Federally listed bat species. The Center suggests that New Jersey, Maryland, Delaware, and Pennsylvania be contacted to incorporate regional species of State concern. This is a general comment/recommendation for all fauna.
    - Figure 3.5.3-1: The bird geographic analysis area appears to hug the coastal and back bay shorelines. There does not appear to be any buffer upland or flyways included. Suggest including additional discussion on how the analysis area was determined.
    - 3.5.3.1 The document lists numbers of state species related to some kind of listing. The document does not indicate which state. Since these species are migratory, the Center recommends this assessment to include all coastal Mid-Atlantic states that fall within traditionally accepted migratory pathways (including neotropical species).
    - 3.5.3.5.4: This section stated four species are of concern and only three species were noted. Is this a cut and paste error or is there another species not noted?
    - Birds General: There is just not enough discussion on neotropical species. A main route for these species is the leap from Cape May Point, NJ to the Lewes, DE region. Heavy winds, storms, or other distractions could bring species off-course and into the project area while making the crossing. This is an issue that should be evaluated. There is a weak discussion on Page F-73 regarding passerine species. This is not sufficient to dismiss this avian resource when considering its proximity to a major migratory pathway.
    - 3.5.3.6: How can a wind turbine field be considered “moderately beneficial” to birds? This is a major stretch without a good deal of back up information and presentation effort.
    - 3.5.4.5.2.2: There should be more discussion on how lighting could impact migration pathways.