TO: Jessica Taylor, Office of Protected Resources, NOAA Fisheries

DATE: October 12, 2023

FROM: US Wind, TRC Environmental, Marine Acoustics, Inc.

TRC PROJECT NO.: 016310

SUBJECT: US Wind Maryland Offshore Wind Project LOA – Proposed Rule Comment Responses

The following are responses to the comments received from NMFS regarding the Letter of Authorization (LOA) Proposed Rule for the Maryland Offshore Wind Project on October 6, 2023.

NMFS Comment: What boats would require dynamic positioning thrusters and how long would the thrusters be operating during vessel-based construction activities?

- ***US Wind Response***: See the table below. Dynamic positioning usage per day when the vessel is active during a given construction campaign provided; see Table 1-3 of US Wind's LOA Application for details by construction campaign.

Vessel Class	Vessel Role	DP capability?	DP usage per day (hrs)
Utility boat, Fishing Vessel	• Marine Mammal Observers • Environmental monitors • Guard Vessels • Acoustic monitoring	No	N/A
Fall Pipe	Installation of scour protection	Yes	24
Heavy Lift and General Cargo	Delivery of Project components from manufacturing location to staging/assembly port	Yes	Only while maneuvering in port
Jack-up crane or Floating Crane	Installation of Project components	Yes	During positioning only – 4 hrs per WTG or OSS; otherwise jacked up out of water
Multipurpose Offshore Supply	• Supply of materials and consumables • Pre lay grapnel run boulder clearance • Noise Mitigation • Foundation Grouting • Refueling • Cable Burial	Yes	24
Anchor Handling	Anchor positioning for installation vessels	No	N/A
Crew Transfer Vessel	Crew Transfer	No	N/A
Cargo Barge	Feeder Vessel: Delivering components from staging port to Project site	No	N/A
Tugs	Feeder Barge: Movement and general support	No	N/A
Jack-up or Accommodation Vessel	Housing for offshore workers during construction	Yes	Only while maneuvering to site – 2 hrs per WTG or OSS

Vessel Class	Vessel Role	DP capability?	DP usage per day (hrs)
Survey	Pre-Installation and Verification Surveys Geophysical and Geotechnical	Yes	24
Cable Laying	Cable installation	Yes	24
Rock / Mattress placement	Placement of Scour protection, concrete mattresses	Yes	24
Dredging	Seabed preparation / leveling	Yes	24
Service Operation	Commissioning Activities	Yes	24
Cable Barge	In shore cable installation	No	N/A
Anchor handling tug	In shore cable installation	No	N/A

NMFS Comment: What vessel types will be used during operations and maintenance? What is the max number of operation and maintenance vessels and the expected maximum annual number of trips?

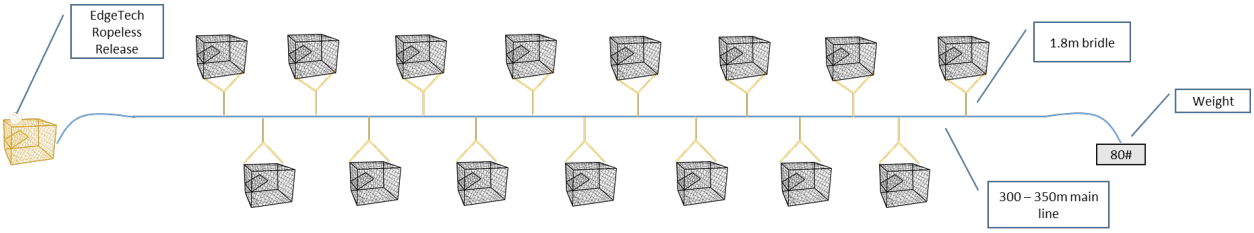
- ***US Wind Response***: Representative vessel types would include fall pipe vessels, crew transfer vessels, jack-up vessels, a sportfisher, and multi-role survey vessels. The maximum number of operation and maintenance vessels is anticipated to be 10; however, not all vessels would be operating at the same time. Four of the vessels indicated below would be for non-routine basis and would not operate every year, if at all, Crew transfer vessels unlikely to operate on a daily basis year-round; for conservative purposes daily trips are assumed. Preliminary information concerning vessel trips was initially provided in Table 1-3 of the LOA application and has been updated here to reflect the best estimates at this time.

O&M Vessel Type	Homeport	Maximum Annual Trips
Fall pipe vessel*	Sparrows Point, MD	1
Crew transfer vessel* (refueling)	Ocean City, MD	20
Jack-up vessel*	Sparrows Point, MD	1
Multi-role survey vessel	Sparrows Point, MD	8
Multi-role survey vessel*	Sparrows Point, MD	5
Sportfisher	Ocean City, MD	100
Crew transfer vessel #1	Ocean City, MD	365
Crew transfer vessel #2	Ocean City, MD	365
Crew transfer vessel #3	Ocean City, MD	365
Crew transfer vessel #4**	Ocean City, MD	365

* Only for non-routine maintenance activities
** If needed

NMFS Comment: Are any ropes attached to the EdgeTech ropeless fishery pot gear that would lie on the bottom during the fishery monitoring surveys? If possible, please provide a figure that can be referenced.

- ***US Wind Response***: There will be 300 - 355 meters of 7/16" main-line rope that will lie on the bottom during the fishery monitoring surveys. There will also be approximately 1.5 meters of 7/16" line per pot that will form the bridle connecting the pot to the main line. The main and bridle ropes are represented by the blue and yellow lines, respectively, in the figure below. The EdgeTech ropeless release pot is depicted on one end of the main rope line and an 80lb weight is depicted on the other end. Each string of pots consists of 15 black sea bass pots, the EdgeTech pot and the anchor. Each survey consists of 6 strings deployed for a one-day soak time.



NMFS Comment: For the Denes et al. (2018) source levels for 11-m monopiles used in the acoustic modeling, please confirm whether these data were at 1 m or 10 m.

- ***US Wind Response***: Denes et al. (2018) does not state a specific distance where the source levels for the monopiles are defined, but the units of the spectrum figures are dB re 1µPa^2s/Hz/m, which were interpreted as an estimate at 1 m range. Also, MacGillivray (2014), which is referenced in Denes et al. (2018), states that the output of the source model is a set of time-domain pressure signatures referenced to 1 m. Therefore, MAI assumed the source levels were referenced to 1 m.

NMFS Comment: Please thoroughly describe how the sensitivity analysis was conducted and provide the results demonstrating that the mid-water site resulted in the farthest propagation of sound as compared to the deep water site.

- ***US Wind Response***: A sensitivity study was conducted to assess the differences in acoustic propagation at the selected intermediate-depth model location (27 m) as well as at the deepest (42 m) and shallowest (13 m) locations within the Project area. An acoustic propagation model was run for 3 water depths (shallow, intermediate, deep) for a source at 15 m depth for decidecade band frequencies and the source decidecade band levels were applied to the transmission loss (TL) results. The broadband received level (RL) field was generated for each location and the RL vs range was compared (US Wind LOA Application, Appendix A, Figure 5).

  The results of this sensitivity study indicated that although acoustic propagation was not significantly different between the sites, the modeling predicted lower received levels at the shallowest and deepest locations relative to the selected intermediate depth modeling location. Therefore, of the three considered modeling locations, the intermediate depth (27 m) location was selected to provide the most conservative and representative modeling results.

NMFS Comment: Please confirm that the acoustic ranges presented to both Level A harassment (dB SEL and peak) and Level B harassment thresholds include hammer strikes at 4,400kJ and provide the full hammer schedule considered in the acoustic model (currently we only have information on the number of strikes for up to 3300kJ).

- ***US Wind Response***: The acoustic ranges to MMPA Level A peak and Level B SPL thresholds are at a hammer energy of 4400 kJ for the 11-m monopile. A hammer energy of 4400 kJ was initially modeled for the monopile because US Wind originally considered hammer strikes at this energy level. However, the final hammer schedule (US Wind LOA Application, Appendix A, Table 10) did not include any strikes at the 4400 kJ energy level. Since no hammer strikes at 4400 kJ were included in the final pile progression schedule, no impact hammer strikes at 4400 kJ are included in the acoustic ranges to MMPA Level A SEL thresholds.

  Although the 11-m monopile impact hammer was modeled at 4400 kJ, the modeled sound levels at this energy were reduced by 1, 3 and 6 dB to represent the final installation hammer strikes at 3300 kJ, 2200 kJ, and 1100 kJ, respectively (US Wind LOA Application, Appendix A, Table 10). The dB reduction of 1, 3, and 6 dB was estimated using the scaling relationships between hammer energies presented in von Pein et al. (2022). Source levels for the 11-m monopile for each of these energy levels are found in the US Wind LOA Application, Appendix A, Table 12.

NMFS Comment: Please explain why the potential for harassment of harbor porpoise has been discounted such that no takes are requested during impact pile driving of 3-m pin piles and 1.8-m pin piles.

- ***US Wind Response***: The acoustic exposures (cumulative injury sound exposure levels [SEL] acoustic exposures, peak injury acoustic exposures, and behavioral sound pressure level [SPL] acoustic exposures) during impact pile driving of 3-m skirt piles and 1.8-m pin piles were zero. Therefore, no take for harbor porpoises was requested. Please see Tables 6-11 and 6-12 from the memo submitted to NMFS on September 6, 2023.