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Best Management Practices for North Atlantic Right Whales During Offshore Wind Energy Construction and Operations Along the U.S. East Coast

North Atlantic right whales are at a critical moment. At their current rate of decline, and in the absence of immediate conservation measures, we will lose this majestic animal within only a few decades. Their most serious threats are fishing gear entanglement, including chronic entanglement where they may drag fishing gear for months or even years, and vessel collisions, one of the leading causes of mortality for all large whales. The probability of a whale suffering a serious injury or mortality from a vessel collision significantly increases when vessels of any length travel at speeds greater than ten knots. North Atlantic right whales are also subjected to numerous stressors during their annual migration along the eastern seaboards of Canada and the United States, including significant levels of noise pollution generated by human activities. Underwater noise can mask important communication calls and reduce foraging success as well as the ability to find mates. Science tells us that such additional stressors force whales to expend extra energy, which negatively affects their health and ability to reproduce successfully. For the North Atlantic right whale to survive and recover, threats must be avoided, minimized, and mitigated to the fullest extent possible.

Our organizations strongly support development of environmentally responsible offshore wind energy along the eastern seaboard of the U.S. as a key to the critical transition away from harmful fossil fuels to a clean energy economy. Offshore wind power provides a tremendous opportunity to fight climate change, reduce local and regional air and water pollution, and grow a new industry that supports thousands of well-paying jobs. While the need for this transition is only growing more urgent, we can and must ensure that all U.S. offshore wind development is guided by science-based measures to avoid, reduce, and mitigate impacts on valuable and vulnerable wildlife, such as the North Atlantic right whale.

Our organizations endorse the measures outlined below as Best Management Practices ("BMPs") for the protection of the North Atlantic right whale during wind energy construction and operations of fixed foundation offshore wind projects off the U.S. East Coast. The BMPs are designed to: (i) reduce co-occurrence of development activities with this sensitive species; (ii) minimize and mitigate any impacts that do occur to the maximum extent practicable, including the prevention of any injury to right whales during construction; (iii) reduce risk of vessel collisions throughout the life of an offshore wind project; and (iv) ensure effective long-term monitoring of the health of marine life present at an offshore wind site to help guide the development of the American offshore wind industry. The below measures are intended to ensure that we can advance imperative, large-scale clean energy solutions while conserving

the health of this iconic whale species. Note that as the science, technology, and regulations related to right whale protection and offshore wind power advance, our groups will periodically reexamine and update these BMPs.

1. Site selection
   Offshore wind projects should not be sited in, at minimum, federally designated North Atlantic right whale critical habitat, as defined under the Endangered Species Act, until: (i) peer-reviewed scientific research determines that offshore wind activities are not likely to jeopardize the continued existence of North Atlantic right whales or adversely modify their habitat; and (ii) research informs the development of comprehensive mitigation measures. However, understanding that designated critical habitat may not include all important foraging, calving, and migratory areas for right whales, care should be taken when siting to avoid and minimize use of areas with consistent seasonal right whale aggregations.

2. Seasonal and temporal restrictions on construction
   Construction activities, including any geophysical surveys necessary to advise final micro-siting decisions, with noise levels that could cause injury or harassment in marine mammals must not occur during periods of highest risk to North Atlantic right whales, defined as times of highest relative density of animals during their migration, and times when mother-calf pairs, pregnant females, surface active groups (indicative of breeding or social behavior), or aggregations of three or more whales (indicative of feeding or social behavior) are, or are expected to be, present, as supported by review of the best available science at the time of development.

   Pile driving and geophysical survey activities should commence, with ramp-up, only during daylight hours and good visibility conditions to maximize the probability that North Atlantic right whales are detected and confirmed clear of the exclusion zone before these activities begin (*see* also 3, below). The activity can then continue into nighttime hours. If the activity is halted or delayed because of documented or suspected North Atlantic right whale presence in the area, developers must wait until daylight hours and good visibility conditions to recommence.

3. Monitoring exclusion zones during construction
   For the North Atlantic right whale, a minimum exclusion zone of 1,000 meters should be established around all vessels conducting activities with noise levels that could result in injury or harassment to this species (*e.g.*, pile driving and geophysical surveys). The size of the exclusion zone should be extended during periods of highest risk to right whales. The activity must be halted or delayed if a North Atlantic right whale is detected in the exclusion zone unless it must proceed for human safety reasons or because, in certain cases, stopping the pile installation mid-way through would result in an unusable turbine foundation.

   To maximize the probability of detection of North Atlantic right whales, comprehensive exclusion zone monitoring is essential. At minimum, a combination of National Marine Fisheries Service ("NMFS") approved Protected Species Observers ("PSOs") to watch for whale presence and passive acoustic monitoring with underwater recorders located in proximity to the exclusion

zone to detect when animals are vocalizing nearby should be required at all times. Staffing and shift-schedules should allow for each PSO to monitor a maximum of 180° during daylight hours. Aerial surveys would also provide a useful supplement to increase detection probability. At night, a combination of night-vision, thermal imaging, and passive acoustic monitoring should be used.

4. Vessel speed restriction for the lifetime of the project
   All vessels operating within or transiting to/from lease areas should observe a speed restriction of ten knots during times when mother-calf pairs, pregnant females, surface active groups, or aggregations of three or more whales are, or are expected to be, present based on best available science. A compulsory vessel speed restriction of ten knots must be required of all industry vessels within any Dynamic Management Area ("DMA") established by NMFS. Crew transfer vessels may exceed a speed of ten knots only if additional monitoring measures are in place, including aerial surveys or a combination of vessel-based visual observers and passive acoustic monitoring. Any collision should be reported immediately following NMFS guidelines.

5. Reduction of underwater noise during construction
   During construction, developers should commit to minimizing impacts of underwater noise on the North Atlantic right whale to the full extent feasible through: (i) the consideration and use of foundation types and installation methods that eliminate or reduce noise; and (ii) the use of technically and commercially feasible and effective noise reduction and attenuation measures, including the use of the lowest practicable source level.

6. Commitment to scientific research and long-term monitoring
   Developers should commit to carrying out scientific research and long-term monitoring in lease areas to advance understanding of the effects of offshore wind development on marine and coastal resources, and the effectiveness of mitigation technologies (*e.g.*, noise attenuation and thermal detection). Science should be conducted in a collaborative and transparent manner, utilizing recognized marine experts, engaging relevant stakeholders, and making results publicly available. Developers should coordinate with state and regional scientific efforts to ensure results from individual lease areas can be interpreted within a regional context and contribute to the generation of regional-scale data, which is required to address questions related to population-level change and cumulative impacts across the geographic range of the North Atlantic right whale. Developers should engage in regional and state ocean planning efforts and contribute scientific analysis and data as appropriate, including contributions to the regional ocean data portals.

7. Contribution to species conservation efforts
   As a broad commitment to species conservation efforts, offshore wind developers should support mitigation approaches and strategies to reduce other stressors facing potentially affected species such as the critically endangered North Atlantic right whale (*e.g.,* incidental entanglement in fishing gear).

This is an exciting moment for offshore wind energy development along our Atlantic coast. Several states have adopted ambitious offshore wind goals, with a combined total of over 15,000 MW committed by 2035. Many large-scale offshore wind projects are now advancing through the permitting process and are expected to be built off the East Coast over the next ten years, providing enough clean renewable electricity to power at least 5 million homes. These protective measures will help advance the offshore wind energy industry in a responsible manner that protects vulnerable North Atlantic right whales, and we call on all developers to adopt them as they design, build, and operate offshore wind turbines in U.S. waters.